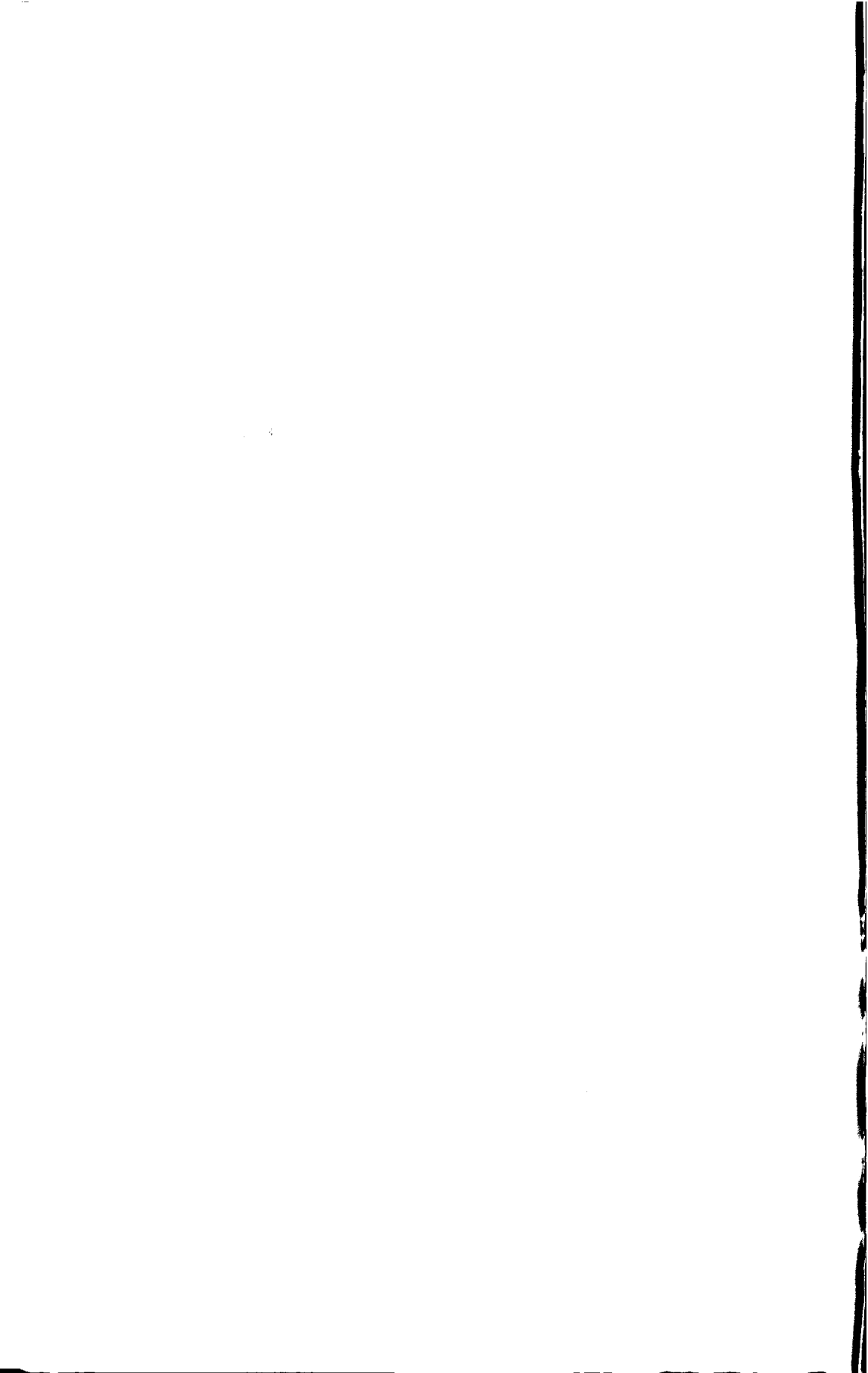


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**Institutional Transplantation**



# INSTITUTIONAL TRANSPLANTATION

How to adopt good transport infrastructure  
decision-making ideas from other countries?

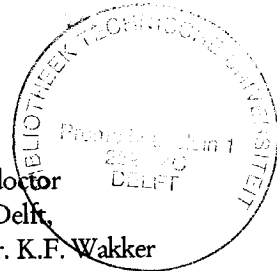
PROEFSCHRIFT

ter verkrijging van de graad van doctor  
aan de Technische Universiteit Delft,  
op gezag van de Rector Magnificus prof.ir. K.F. Wakker  
in het openbaar te verdedigen ten overstaan van een commissie,  
door het College voor Promoties aangewezen,  
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door

Willem Martin DE JONG

doctorandus in de bestuurskunde

geboren te Vlaardingen



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## Preface

When I first proposed to my professor to make an international comparison of policy-making practices, he was rather hesitant about the idea: he knew my outspoken eagerness to travel the globe. He was also of the opinion that students of public administration were merely capable of understanding their own national systems. Foreign systems had unfathomable logics that would never be disclosed to us. Perhaps he was right. Somebody even wrote that an illustrious man such as Montesquieu derived his 'separation of powers' and 'checks and balances' from what he thought the English system was like. Unfortunately the Frenchman had a distorted view of it. Looking across the border is apparently difficult. But all was not lost. I had the unheard luck of receiving an offer from the Dutch Ministry of Transport and the ir Lely Foundation to perform a funded study on the prioritisation practices for transport infrastructures in as many countries as I could handle. This reminded me of another part of Montesquieu's story: despite misinterpretations, his writing had still been influential. My professor understood I was unstoppable anyway and let me take off in search of the best and most efficient institutional system. A decision neither he nor I ever regretted.

When I landed some five years later I had learned at least two things. Firstly, exciting things are by definition *inefficient*. Secondly, it is easier to describe policy-making for other countries than for your own country. Some years ago, the abroad was a mystery to me. Now the Netherlands is.

My intellectual journey has been particularly pleasant. I owe much to many people. My promotor Ernst ten Heuvelhof has conscientiously fulfilled his role of process manager, and has been able to draw the absolute maximum out of me. Several times, he made corrections I disagreed with at the time and agree with now. Apart from him, my colleagues of the Public Management section (Heleen de Vlaam, Ronald Oosting, Helen Stout, Ellen van Bueren, Arco Timmermans, Joop Koppenjan, Ria van der Helm, Nelleke van der Wel, Tanja Abbas, Hans de Bruijn, Jurian Edelenbos, Michel van Eeten, Martijn Kuit, Igor Mayer, Silvia Pauly, Garrit Schumacher, Mark van Twist, Hugo Verheul, Hans Rijckenberg, Lien de Voogd and Haiko van der Voort) have stimulated my work tremendously. I have also

collaborated in three informal discussion groups, the Quality Club (among them Willem Salet, Wander van den Berg and Ruud van Dael), the Argumentation Club (Pieter Bots, Remke Bras, Frederique de Graaf, Joanneke Kruijssen, Odette van de Riet and Daniel Tijink) and the Infrastructure Club (Karin Boersma, Anupama Dokeniya, Rolf Künneke, Jolien Ubacht, Wijnand Veeneman and Daniëlle Wille). Many other faculty people have contributed too, particularly the Transport, Logistics and Organisation section. As I hate to make distinctions, I won't mention them personally. Please accept my hugs and sympathy at a later stage as an apology. My former office mates deserve a few extra compliments. Henrik Stevens spent the first theoretical year with me and reciprocated my stilted theoretical contemplations with a seemingly simple moral lesson: 'we help each other, we do not use each other.' I still cherish it. Jeroen Maartense, Vincent Marchau, Jan Nederveen, Kiliaan van Wees and Eric Molin were a rigorous physicist, mathematician, civil engineer, legal scientist and methodologist respectively and showed me that the social sciences do not need to be vague babble, even though they are more fun that way. Biologist and friend Hans Cees Speel has enriched my book immeasurably by inciting me to read about evolutionary theory and explaining it to me a great many times. His contributions made for a 'critical juncture' in my work. A few academics from other universities also went through large parts of the manuscript. Anton Hemerijck (Erasmus University Rotterdam), Vincent Wright (University of Oxford), Ed Page (University of Hull) and Bruno Frey (University of Zurich) have been quite helpful.

I also owe enormously to the Dutch Ministry of Transport. The PI project has hosted me three days a week for more than two years. Gerard Offerman and his crew (Stef van der Voort, Ronald Annaert, Sieds Halbesma, Mohammed Benzakour, Aart Houweling and Miranda Remmerswaal) taught me how the Dutch civil service works. Working and dining with you were a joy I will not easily forget. My foreign trips I spent with Herman Wilmer were both intellectually instructive during interview evaluation and a good laugh at the bar. I'm still fascinated by your quixotic but tireless urge to reform and strengthen Dutch local government. You know I share your ideals, but I devote my life to other things. The supervision committee consisting of Krijn van Beek, Frans Blanker, Arjen 't Hoen, Marinus de Jong and Regina Oosting confirmed my suspicion that nothing is more boring in scientific writing than completeness. Apart from PI, the Wegverlichting people, especially Johan Jakobs and Hans Beckers, deserve to be mentioned. Other people in the Ministry who helped and supported me often and at the right times were Marion Gout, Wieger Fransen, Iddo de Jong, Peter Gerbrands and Tanja van Beek. Thank you all. The Ministry as a whole has been quite helpful. Despite my impression that citizens want infrastructure improvements but get policy reports, I

think there are few organisations where openness and freedom of speech are more respected. I will be glad to continue my collaboration with you.

My respondents abroad have been inviting without exception. They are listed up in appendix 2. Among them Samuel Zimmerman (US DoT, Federal Transit Agency), Frank Limacher (Caltrans) and David Murray (MTC) have been especially wonderful hosts. Their innovative ideas on policy-making merit serious attention too.

My close friend Gerhard van Roon has made the pretty photos in this book. He knows as well as I do that it only has impact if it has beautiful pictures in it.

Last but not least come my family and other friends. To all of you, but most of all to my parents: *I* know that it was *not* hard for you to spend time with an obsessed author, because you liked it as much as I did. And *you* know that for me you're always the ones to fall back on when it matters most.

Montesquieu fought hard for the acceptance of what he thought was the English system in France. At last his ideas fell on fertile soil, not in France, but in the United States. My efforts are aimed at introducing more checks and balances in the Dutch institutional structure for infrastructure planning. They have not been very successful so far. On the other hand, I received mail from an Australian internet friend, Glenn Davis, who wanted to receive my writings to see how the Bay Area system, one of my favourites, operated *according to me*. He thought it a good idea to introduce parts of it in the Australian state of New South Wales. Is that what the tinkering and tampering of institutional transplantation is all about?

Martin de Jong, Delft, 11/01/99.



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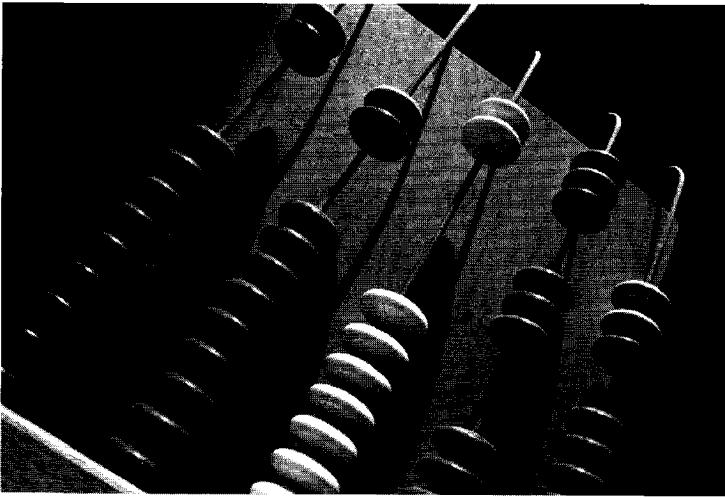
### **Box 1: Planners and pushers in 1988**

**Smit-Kroes (Dutch Minister of Transport, Public Works and Water management):** (...) Efforts are also underway in Brussels to devise an objective methodological system which could be employed as a potential policy basis. As I have already said, it seems to me that – even if you did manage to find an objective system for, say, inland shipping – the time is not yet ripe for implementation.

Mr Chairman! We always try to benefit from the ERDF subsidies whenever our projects are suitable.

**Chairman:** I should like to ask a question about freight transportation. The budget suggests more strongly than the minister has just given us to understand that an active search is in progress to find a workable method of addressing more objectively the cost of the road, rail and waterway infrastructure. The budget suggests that laborious searching is taking place on a daily basis.

**Smit-Kroes:** Not just on a daily basis; an hourly basis would be closer to the truth. Up to now no objective methodology has been put forward which can stand the test of criticism. It is largely contingent on whoever initiates the study in the first place. Then comes the question of how it is to be applied in policy because, obviously, there are many instances in which transport technologies make use of an infrastructure which may be deployed for several purposes. Take waterways, for instance, which is crucially important in the system of water management in the Netherlands. Finding the right formulas here is no easy matter. We have been discussing this with the railways for several years now. But let us avoid any misunderstandings on this count. You must not interpret my comments as indifference. I care deeply about this matter. But I want to see a methodology that a large number of people will accept as a gospel worth preaching (Rijkswegenfonds UCV 1988).



# 1. Planners and pushers in 1993

## 1.1 Integral appraisal of transport infrastructure

### *Policy analysts on integrated appraisal of transport infrastructure*

In the early 1990s, in the wake of the Second Structural Plan for Transport and Traffic (SVV), advisors and officials at the Dutch Ministry of Transport and Water Management compiled an inventory of the infrastructural connections that needed to be laid. At the same time, they calculated the realisation costs and the available budget space. Traffic experts, econometrists and financial specialists churned out reports on the costs and benefits of various policy options; they selected connections with a high net cash value or cost/benefit ratio, worked on priority lists for study programmes and realisation projects, set realistic cash-flow rhythms for the budgets over the coming years and compiled overviews of the potential effects of diverse types of trajectories. To help them formulate an integrated appraisal of the diverse modes of transport the analysts had access to a large arsenal of revised methodologies, criteria and basic data compiled both by themselves and external consultancy agencies. Two methodologies for appraisal crystallised out at the start of the 1990s: SPW for priority setting in trunk roads and PIOV for priority setting in public transport. These were well-developed and balanced methodologies which were commendable for their user-friendliness and their affinity with the mood of the time. They encompassed economic costs and benefits, traffic safety, residential and leisure environments, and wildlife and landscape. Moreover, menu-driven micro-computer software made it possible to perform sensitivity analyses. The methodologies also allowed varying degrees of weight to be attached to the criteria so that the decision-makers could experiment and steer the results to suit their own ends. And it was all conceived with the aim of making policy analysis more sensitive to political practice.

All the analysts ran into the same irksome stumbling block: the budget for the next few years was already allocated before the priorities which were underpinned by analysis and calculations had had a chance to exert any influence. Projects that had come about in a more or less ad hoc fashion walked off with all the money. And this was not a one-off occurrence. Almost without exception, recommendations submitted by policy analysts were seldom translated into government-approved budget figures. The budgets for the coming years were systematically swallowed up by parties who proposed infrastructural projects other than those put forward by the analysts. Clearly, other projects were finding their way to the budget via alternative routes but no-one knew exactly how it was happening. At any rate, extra money was always needed to realise projects with inherent value. It was forked out on a few occasions but most of the time analytical priority became political posteriority.

With a healthy appreciation of the art of understatement Mulder comments as follows on the practice of appraisal:

The results of the SPW are indeed an important piece of data in the ultimate planning but they are definitely not the decisive factor. In the final planning, a project's eventual placement takes place, subject to preconditions, on the basis of the maximisation of goals. However, in recent years these preconditions have played an increasing role (1993: 3).

In other words, the constraints imposed by the preconditions have made it more and more difficult to maximise the goals set by policy analysis. The preconditions in question are the exhaustion of the annual budget, the release of funding in step with physical planning procedures, the implementation deadlines set by administrative bodies, the avoidance of wide budget fluctuations and inter-project coherence. Mulder believes that, after the appearance of the SVV and debate in the Second Chamber, yet another major precondition was added, one which has since exercised a considerable influence on annual planning: prioritisation was introduced into three categories of road, namely hinterland connections, main transport junctions and other trunk roads. The role of integrated appraisal was pushed even farther into the background. However, this conveyed, at least, what the Chamber understood by prioritisation.

The Research Team for Problems Regarding the Infrastructure Budget (BPI), which tried to produce an overview of the funding requests and obligations for 1993 and subsequent years, identified the following bottleneck:

The fact that decisions are being taken on the same matters along different lines and from different vantage points is leading to conflicting results. This carries with it the inherent threat that people will shop around. They will seek out that circuit in which the infrastructure project is doing best in the market. The team has discovered that because the decision-making circuits are linked to different interests, priority-setting criteria in the sector line are different from those imposed on integrated projects.

The budget cannot accommodate all the projects being proposed by the various circuits. As projects will ultimately require funding, which considerations should carry the most weight? At present, actual planning is dominated by sector-related considerations, partly because the sector line controls the budget (1992a: 32).

The blame for policy analysts' failure to convert their well argued and meticulously calculated studies into hard cash is pinned on 'political and public-sector undertakings' which the minister and her retinue are apparently able to give to sympathetic civil servants having channels of influence which are more effective than substantial arguments. The mechanics of these processes continue to be unfathomable and are perceived as a mysterious 'black box'. However, though this practice is undesirable, its legitimacy is beyond question, for politicians always have the last word. Budgets are more or less gobbled up before substantial arguments

can even be put forward, but no-one cherishes the illusion that matters like these could ever be any different in a democracy.

*Politicians on integrated appraisal of transport infrastructure*

In this same period, parliamentary debates were held on priority setting in infrastructure projects. Meetings were called to discuss the 1993-94 budget for the Ministry of Transport and Water Management and the four-yearly Programmes for Infrastructure and Transport (MIT), which included the projects that were eligible for funding over the coming five years. In addition to an impressive list of projects the Minister also sent a number of appraisal models so that the Chamber could see exactly how integrated priority setting actually operated. It had explicitly requested this technical material. However, despite its ostensible comprehensiveness, the documentation offered no solution. The calculation steps which were taken between the model and the list were unclear to virtually all the party pundits. Once in a while they picked up signals that urgent problems needed addressing or that the renovation of a station was costing more and taking longer than had been originally estimated. They could fix that with a few extra millions. But they could not come to grips with determining main policy lines or setting integrated priorities: the very tasks which are expected of democratically elected parliamentarians. The fact that the most comprehensive package of information to date still failed to give them the insight they sought made them rather despondent. Moreover, they had drawn up their own priority list of project types some time ago: this was the list that the policy analysts had seen as a constraint rather than an opportunity for priority setting. The list read as follows:

- 1) Projects in the process of realisation
- 2) Formal government undertakings
- 3) Hinterland connections
- 4) Main transport links
- 5) Projects listed in the Randstad Accessibility Plan (BPR)
- 6) Other connections

It then turned out that this list of priorities was also being outstripped by actual decision-making practices. An incensed Van Gijssel (PvdA, Labour Party) made the following comments:

Now I come to the roads. Almost every year we have urged that priorities be monitored. Last year I remarked on the distribution of the projects with reference to the MIT. At that time a total of 56 projects were concerned, 22 of which were not marked as transport link, hinterland connection or Randstad Accessibility Plan projects. They accounted for 30% of the funding. The total number of projects has since fallen to 55 while the number in the unmarked category has risen to 25 (accounting for 33% of the funding). This says everything



about how we are handling prioritisation. Every year, attempts are made from left and right to undermine cost-benefit based prioritisation (8 November 1993).

Minister Majj-Weggen (CDA, Christian Democrats) was unable to offer an adequate explanation for this phenomenon and promised to look into it. It was not only the policy analysts who suspected that priorities would eventually end up as posteriorities; Wolffensperger (D66, Radical Democrats) clearly felt exactly the same way:

I agree by and large with priority setting in the road network budget. It is however disturbing to see that it is not leading to decisions on what should be addressed first but rather to what should be put on hold. Priority setting at present is resulting mainly in posteriorities (28 October 1991).

Is there an unacceptably large power vacuum in the Netherlands, filled by invisible officials?

#### *New hope: the introduction of the Infrastructure Fund*

The dissatisfaction on all sides had not, however, completely crippled the will to make structural improvements to the situation. Parliament decided to put into effect the Act and Resolution on the Infrastructure Fund on 1 January 1994. All transport infrastructure funding which had previously been subsumed under various parts of the general budget of the Ministry of Transport and Water management (the Budget Chapter XII), the National Road Fund and the Mobility Fund would be merged to form a new fund. This will include all funding for national infrastructure and much of the funding for the regional line infrastructure (roads, railways and waterways). No better starting position than a statutorily recognised overview of this kind could have been wished for. The fund had two main objectives:

- 1) To redistribute the resources earmarked for infrastructural investment across the budget. A separate comprehensive overview of expenditure on the construction, maintenance and management of infrastructure would put paid to the compartmentalisation of the various transport sectors (roads, railways, waterways and resources for local authorities); hence the inclusion of 'Infrastructure' in the name. The incessant pound-for-pound allocation of funding over the diverse transport modes could at last be laid to rest.
- 2) To monitor the continuity of investment expenditure on infrastructure. This could be achieved by carrying forward funding from one year to the next if there were signs of under- or over-depletion. This explains the inclusion of 'Fund' in the name. It was believed that budgetary separation of investment from operational expenditure would guarantee that any spending to strengthen

the structure of the national economy would not be dramatically affected in the event of cutbacks. Operational expenses were brought under the category of under single-use public spending; if any financial blows came, it would be better for them to land there.

This twin objective was the result of a delicate compromise between the parties in the Second Chamber. The left-wing parties were motivated mainly by the possibility of using a large proportion of the resources from the National Road Fund (which had hitherto been earmarked solely for roads) to improve public transport. At the other end of the political spectrum the VVD (conservative liberals) agreed to support the new fund because they thereby hoped to introduce a capital service. The members of the Left were afraid that the government would routinely carry over the resources without consulting Parliament, while the right-wingers wanted to maintain the compartmentalisation of the transport modes: after all, there was still plenty of work to do on the roads. However, CDA minister Majj and her party came up with a 'happy medium'. They accepted a one-off budget increase for the railways at the expense of the roads budget. Thereafter, any extra funds for the railways and local authorities would have to be drawn from other sources. At the same time, the money in the infrastructure fund would not (or scarcely) be carried over to the following years (the Ministry of Finance would reclaim any remaining money) and no loans would be taken out on the capital market to temporarily cover a shortfall (the State of the Netherlands is the most solvent financier, which makes loans via the Ministry of Finance the cheapest of all). The infrastructure fund was, in effect, just another chapter in the budget, but it would be unconnected with operational expenditure.

The first budget of the infrastructure fund, which was submitted in 1994, was not hailed as a great success by any of the parliamentary parties. Jorritsma-Lebbink (VVD) expressed satisfaction that a decision had been taken to use some of the income generated by natural gas to give infrastructural projects such as the Betuwe Line and High Speed Rail an extra financial injection of several billion guilders. However, as this would be paid out of the Fund for Structural Economic Reinforcement (FES), which was in the hands of the Ministries of Economic Affairs and Finance, an integrated overview of all the infrastructure would not be maintained. Guarantees were given for the continuity of the financial resources and any future deficits in the analysts' budgets were covered, but this success was not thanks to the Infrastructure Fund itself. Even Lankhorst (Groen Links, 'Green Left'), who had had such high hopes for the integrated appraisal, was obliged to downwardly adjust his expectations:

As Groen Links has always been deeply committed to the infrastructure fund, we looked forward to this year's budget with predictable excitement.



We see the infrastructure fund as having had two main objectives. The first was to promote continuity in the resources; this will probably be achieved. The second, crucial objective was to reach an integrated appraisal of priorities; in this respect I have been bitterly disappointed. The documents gave me very little to go on when I tried to shift things around to find out whether the integrated appraisal could be reached in another way. The exercise was just as frustrating as it has been in previous years. How on earth did the department ever manage to work with them? How can we be expected to reach an integrated appraisal of rail, road and waterway transport? When I look at these documents I get the impression that we would have had the same priority lists even without the Infrastructure Fund. Were we not supposed to get more information? And was it not to be presented through other channels?

We have had an evaluation of the second part of the SVV. We could debate it tomorrow but we would only be raking over the traces if we have already spent the money on roads railways and waterways – and that would be an enormous pity. What kind of role has this evaluation played in the integrated appraisal? (...) This is, after all, the first time that we have had to deal with an infrastructure fund. Now is the moment for an integrated appraisal. We are sitting here so that we can make this appraisal for 1994. I find it a pity that the minister has not given us the means to do so. (...) Clearly, we can hardly make adjustments, while this fund was set up specifically in order to enable us to reach a integrated appraisal. If I question the Minister on this she cannot give me an answer (8 November 1993).

It was true. Apparently, money was leaking away at points which could not be traced to official procedures. The Infrastructure Prioritisation Team (PI), another Ministerial project team, was specially appointed to implement the integrated appraisal embodied in the Infrastructure Fund Act and made a bold attempt to open the black box of the practice of appraisal:

It is virtually impossible to provide convincing answers to questions on the necessity and use of specific projects. (...) Open and well-balanced decision-making is being impeded by individual officials who believe that the greater their discretionary scope in policy making, the greater their prestige and influence. Others cannot evade their powers. The clearer the selection process, the less their influence. A need is therefore perceived at several levels to introduce an element of obscurity into policy-making (1994b: 14, 26).

Prioritisation is more a question of structuring a series of decisions than comprehensive methodologies or funds. Information from traditional policy analysis does not provide a strong enough basis for the arguments which are needed to answer questions on 'necessity and use'.

## 1.2 Policy analysis, politics and 'good' decision-making

### *Students of public administration on integrated appraisal of transport infrastructure*

The 1990s have witnessed the publication of several academic works on decision-making in infrastructure. Authors who approached the material from the perspective of public administration questioned the technical viewpoint of

appraisal. They claimed that many players bring their own agendas and instruments of power to bear in the dynamic decision-making processes for technically complex problems and that any approach which focuses on integrated appraisal from the perspective of the policy analyst or the parliamentarian cannot do justice to the overall conception of social and governmental interests. The gradual evolution of unstructured interaction and intertwined objectives (Teisman 1992) or structured interaction and intertwined resources (WRR 1994a, Van Beek & Koopmans 1995) is far more likely to lead to 'good' or 'rich' decisions than simply throwing all the information on the table at a particular point in time – which is both impossible and undesirable. Players need to reach consensus together; this is a learning process. If this does not happen and the technocrats are given a free hand then social or administrative obstruction will follow (Huigen, Frissen & Tops 1993, Teisman & Verheij 1995). The above-mentioned academic works place the emphasis squarely on political factors and not upon the rational analysis in the appraisal.

Public administration experts believe that the players involved in making infrastructural decisions can proceed with collective action only when this will enable them to promote their own interests or realise their own visions. It is therefore no longer accurate to describe the policy cycle as a consecutive process of policy framing, decision-making, implementation and evaluation. The true state of affairs is better reflected by dividing the whole exercise into the phases of identification, development and selection (Simon & Newell 1972, Witte 1972, Mintzberg *et al.* 1976) with innumerable possibilities of acceleration, deceleration and feedback. More importantly, this vision can be more easily maintained even from the normative perspective because feedback and revision lead to decisions which are well thought-out, differentiated and strongly underpinned. At the end of the day, decision-making is a question of striking a deal. One player may be ready to bargain while the other is not. One may have more to gain through postponement while the other wants to speed things up. The initiators are those who are especially adept at devising alternatives while the selectors are those who give projects a green, red or amber light (Teisman 1992). Still others – the facilitators – have control over basic instruments of power, such as expertise or funding, which they are prepared to sell. There is scarcely any structure in the decision-making procedure; its complexity prevents it from being otherwise. No wonder that the question of whether a project is to be given a Yes or No crops up time and again in the agenda, as it did in the case of the Betuwe Line even long after preparations had been made for its construction. And just when the funding is starting to make peristaltic movements towards implementation, the rival players suddenly return to the table with a 'serious and worthwhile alternative'.

Table 1.1 Expenditure on infrastructure and transport through the infrastructure fund 1994-1998 in fl.millions

Budget item	Art.nr.	1994	1995	1996	1997	1998
<i>Road network</i>						
Investments	IF 01.01.01	1136.3	1451.9	1237.9	1255.8	1281.4
Maintenance	IF 01.01.02	712.6	752.2	792.4	813.1	829.6
Outsourcing	IF 01.03.00	112.2	117.8	117.4	109.3	111.9
Tunnels allowance	IF 01.04.00	39.0	39.0	50.0	95.0	97.0
<i>Waterways</i>						
Investments	IF 02.01.00	291.0	322.0	272.8	241.3	231.2
Maintenance	IF 02.02.00	334.2	335.7	282.8	262.2	290.2
Contribution to waterway						
maintenance	IF 04.03.00	36.7	36.0	35.6	35.6	35.6
General expenditure	IF 05.01.02	0.4	0.4	0.4	0.4	0.4
<i>Collective transport</i>						
Railways	IF 03.01.00	999.0	1122.8	1348.4	1425.3	1352.0
Maintenance contribution						
and capital costs	IF 03.02.00	1037.6	1092.1	1129.6	1147.6	1160.2
NS prefinancing interest/ loan repayments						
	IF 03.04.00	60.0	60.0	60.0	60.0	60.0
Urban/ regional construction						
	IF 04.04.00	462.0	462.0	452.0	452.0	582.0
Contribution to maintenance and capital costs						
	IF 04.05.00	347.9	449.4	606.3	645.4	661.4
Running costs contribution (excluding the natural gas revenue for HSR Amsterdam-Paris and Betuwe line)						
	XII 03.10.00	2225.9	2047.2	2023.3	1995.0	1991.4
<i>Urban transport</i>						
Investments in roads, cycle paths and safety measures						
	IF 04.01.01	188.0	202.7	221.7	165.8	181.0
Transport regions	IF 04.07.00	15.0	20.0	30.0	30.0	30.0
<i>Other infrastructure</i>						
Eurogeul guarantee scheme						
	IF 04.06.00	3.5	3.7			

Source: MIT (four-yearly programme for Infrastructure and Transport) 1994-1998.

The phases of identification, development and selection continue to follow one another in never-ending circles. The time factor is used to permutate the gains and losses of each player, each of whom does his utmost to personally capitalise on any opportunities which arise. At key moments of decision during the budget rounds, the players come together with objectives in one hand and solutions in the other. The game of supply and demand is played in proportion to the material power possessed by the participants and by shrewd manipulation of the rules. Its course is determined by estimations of power and interdependence (March & Olsen 1976).

The parties are, of course, under absolutely no obligation to take decisions only at official decision moments. To do so would be naive. To consolidate their positions, the players can make agreements beforehand, engage in a sort of horse-trading and form alliances which need only be formalised at official moments. Anyone who fails to comprehend the importance of informal moments of consultation will simply miss the boat time and again.

This form of collective action and intertwining of objectives and resources results in a highly fragmented idea of appraisal. Decision-making can be likened to a chaotic reception desk area where people come with various types of problems and solutions and work constantly at cross-purposes instead of participating in an orderly process to find the right solution for a problem. Objectives and resources are appraised at most in the case of the individual player, and not for all the players collectively. The term 'integrated' would have been better left uncoined.

The empirical findings of the public administration experts are invaluable in obtaining a clearer understanding of how decisions are made. But what is particularly remarkable is the speed at which they came to the conclusion that things which do not happen in reality, cannot happen, and that because nothing can be done, nothing needs to be done. Thus, since integrated appraisal does not happen in reality, it cannot happen in reality and must not happen in reality.

#### *The double edge of decision-making and decision-making theory*

The above paragraphs demonstrate that researchers and policy makers in appraisal processes are faced with the tension between the rationality of policy content on the one hand and the rationality of politics on the other. Informal lobbying by lower authorities and pressure groups is a highly effective practice of which policy framers and makers are the unhappy onlookers. The main source of the frustration among the policy makers is the fragmented nature of the administrative system in which appraisal should take place. This fragmentation has a vertical component, since various layers of government have competencies which relate to the level of their own geographical scale level. But it also has a horizontal component because the diverse transport sectors, namely the roads, the railways, the waterways, the ports and the airports, have their own weapons of power which they deploy to their

own purpose when decisions are being taken. Adjacent policy areas such as zonal planning, economic development, environmental regulation, and finance also put forward 'participating players' to reflect the spatial, economic, ecological and financial implications of investments in infrastructure. Finally, single-issue groups and (affected) members of the public also join in on occasion. Even if the facts or statistics could prove the policy analysts right a hundred times over, all these players can still mobilise a political strength which totally overshadows that of the policy analysts. The planners simply cannot get past the pushers.

A situation in which the processes of political interaction alone would suffice and which would declare the analysts' data as technocratic or superfluous is scarcely more attractive. However, there are those who believe that decision-making consists purely of the exercise of power and that solutions to social problems are merely a by-product. Or has consensus-forming become the new synonym for solving social problems and does actual data no longer matter? Process orientation combined with a lack of concrete norms provides no direction at all in the who and what of problem-solving and entails a distinct risk of running aground on legitimacy problems. There is a difference between those who have the power to use consensus-forming for their own ends, the involved actors, and those who are affected by the consequences of the decision, the interested actors (Huberts 1988). In the absence of an independent diagnosis by an expert or members of the public, the participating players alone are allowed to reach a verdict on the allocation of public resources. The distinction between right and might virtually disappears. The problems caused by the fogging and discretionary policy scope of the individual officials are not solved. Those who are powerful enough may join in, those who have no power must remain on the sidelines and will not get a chance to look inside the black box.

No, the construction of infrastructure is more than just a political process; it is the delivery of a product. Traffic congestion needs to be reduced, toxic emissions need to be restricted, the occupation of space should be balanced, a bridge needs to be a good technical construction and it must all be achieved at an affordable cost. Analytical aspects and content therefore belong in decision-making theory, especially when it is approached from a normative perspective. The question of whether players are involved is relevant for the political feasibility and the support base of the decisions but, in itself, gives no indication of the quality of either. Those who equate learning with consensus between politically relevant players forget that planning catastrophes occur most often in constellations where policy analysts and members of the public have had little or no influence. Consensus between relevant players is tantamount to pushing through decisions. In *Blijvende blunders: de grote nutteloze werken*, ('Permanent Blunders: the great and useless works') the Belgian

writer De Coninck (1993) frivolously and skilfully explains how decision-making processes in Belgium that encounter no political resistance during the planning and implementation phases result in the highest percentage of useless projects in the world. There are therefore two sides to theories about decisions and decision making.

- 1) On the one hand, knowledge of policy analysis is crucial in order to obtain a proper view of the whole and to opt for well- considered change. Taking decisions without the right facts and figures is tantamount to feeling one's way in the dark. However, the methodology of the policy analysis stems from the mathematical science of decision-making and system analysis, which have been proven inadequate in complex situations (Dunn 1981, Miser & Quade 1985, 1988, 1995, Majone 1989, Fischer & Forrester 1994). People have to realise that social reality cannot be manipulated as if it were a model or an operating system. Making models for the social world calls for simplification, which is of very little use when one is making realistic predictions in a complex world. The power games of the various players are certainly not the least of the causes behind the limited use of modelling.
- 2) It is therefore vital that policy analysis be approached with a sharper awareness of the political reality of decision-making. Insight into the administrative system is essential in order to understand why decision-making processes follow the course that they do. Decisions based on comprehensive databases and with a wide range of alternatives in reserve are doomed to failure if they do not have the consent of those in charge of the funding or those responsible for approving the intentions (Lindblom 1990, Wildavsky 1989, 1993). What is more, information from other sources can also offer new insight and enrich decisions. The science of public administration uses the pursuit of selfish interests or the influence of players upon perception as a standard argument. This kind of reasoning offers insufficient perspective for a grasp of the policy content. The science of public administration desperately needs to be steered in the direction of information processes if it is to have any meaning for decision-making practices.

#### *Research question*

This book makes an attempt to forge stronger links between the rationality of politics and the rationality of policy content. Quality criteria will be formulated for the decision-making processes. The political rationality behind the actions of people, departments, organisations and tiers of government – in short the players – will be treated as an empirical data. But this political rationality must fulfil the preconditions of policy analysis if 'good decision-making' is to result. The research question therefore reads:

*Can the quality of decision-making on infrastructural projects be improved by according methods of policy analysis an effective place in the policy process?*

*Is there a design method that can be used to develop institutional structures providing a firm basis for the discussion and assessment of arguments in the political process?*

Decision-making is defined here as a series of decisions which may be taken in separate but interconnected arenas (Teisman 1992). It need not always be as chaotic and inscrutable as some administration experts have suggested. Up to a point, decision-making can be structured so that there is less variation in players and the process displays a more or less orderly sequence. Procedural rationality, the structuring of a series of decisions, plays a central role in this book.

Following on from Dunn (1981), policy analysis is described, roughly, as the application of information for decision-making purposes. Policy analysis can take various forms in various domains, ranging from mathematical rules of decision to verbally expressed scenarios and from profitability forecasts and score cards to argumentation, all depending on the degree to which research methods have been standardised in the domain in question. The definition includes various types of policy analysis and opens windows of opportunity for drawing together the analytical and the political side of decision-making. After all, the information used in decision-making is a continuous flow, not a one-off occurrence. Good or high-quality decision-making stems from a process of political appraisal in which this information is not left on the shelf but is used to underpin decisions.

Miser and Quade have discerned three roles played by policy analysts in the decision-making process. These clearly illustrate the problems discussed here (as summarised in Korsten & Toonen 1990).

- 1) *A purely cognitive role* in which the policy analyst plays the impartial political advisor who is looking for the best decisions: the policy analysts referred to in earlier in this chapter assume this role.
- 2) *An advocative role* in which the policy analyst dutifully assumes the value system of his client and is totally self-effacing. Policy analysts whose position is not consolidated institutionally do not escape docility.
- 3) *A catalyst's role* in which the policy analyst generates acceptable and workable policy options by staying in constant touch with the various parties involved in the process. He is neither a problem solver nor a lobbyist but a broker in arguments. His input is synthesised in one total entity.

It is this last role which this book defends. The institutional structure of decision-making must be conducive to the catalyst's role if the policy analysts are to avoid regressing into one or other of the alternatives. The job of developing and

substantiating proposals for institutional redesign is, however, no sinecure; it requires knowledge of the potential and limitations of alternative institutional structures and how they affect the quality of the decision-making. It is for this reason that an international comparative analysis has been carried out of the practical application of appraisal in transport infrastructure and the institutional frameworks within which they evolve. This can offer inspiration for institutional design, provided we do not lose sight of the context of the individual countries.

### 1.3 Structure of the book

The book has the following composition:

1. *The problem is diagnosed and the research question is posed.* In many decision-making processes the data from policy analyses is left unused and much of it does not find its way into decision-making. Pushers, powerful officials responding to pressure from their political environment, allocate money in their favour by-passing advice from planners, those who perform studies to enable judgement on the contents and desirability of policy alternatives. The research question reads: *Can the quality of decision-making on infrastructural projects be improved by according methods of policy analysis an effective place in the policy process? Is there a design method that can be used to develop institutional structures providing a firm basis for the discussion and assessment of arguments in the political process?* (Chapter 1).
2. *A theoretical answer is given to the research question.* The quality of decision-making can be improved by applying Simon's concept of *procedural rationality* to complex problems swathed in uncertainty. Procedural rationality requires an institutional, not a content-related approach. Procedural rationality is a synthesis of the analytical and political rationalities. Institutional structures should stimulate generation of information by various actors and incorporation of this variety of information among all actors. Not decisions themselves, but search heuristics for information should be rational. *Institutional design* is presented as the methodology to change institutional structures in the direction of more procedural rationality. Institutional design if worked out as the borrowing of institutional characteristics from one country by another is '*institutional transplantation*'. Adequate institutional transplantation has two requirements: (1) realising an increased procedural rationality in the host country by selecting transplants from a *more procedurally rational* donor country, and (2) adopting a transplant *fitting in with the constitutional and institutional rules* prevailing in the host country. Institutional transplantation is the methodology to implement such copying practices (Chapter 2).
3. *Quality criteria for procedural rationality are formulated.* In order to recognise and realise procedural rationality, one has to be able to determine what it consists of. It is upheld that a great variety of information sources has the highest value,



as they can be checked against each other. Decisions based on a large variation of ideas, concepts, indicators and data rely on two principal mechanisms: (1) generation of a great pool of information and (2) storage of this variation in the official analytical decision framework. Maximum generation of variety and average to moderately high storage of variety reflect procedural rationality in institutional structures. Two 'quality guarantors' are developed, one to reflect *the variation of ideas generated in the whole system* and another to reflect *the inclusion of this variation in the selection environment* of the system (Chapter 3).

4. *The two main mechanisms that influence achievement of procedural rationality (generation and storage of variety) are elaborated and transformed into a typology of institutional structures.* The generation of variety mechanism results in a distinction between multicentric and monocentric structures. Multicentric structures are full of checks and balances and create much informational variety. Monocentric structures develop little variety because of domination by one or very few players. The storage of variety mechanism results in a distinction between cooperative and competitive institutional systems. Cooperative systems punish opportunistic use of information, leading to a high degree of storage. Competitive systems do not provide stimuli to avoid strategic use of information, thereby minimising storage of variety (Chapter 4).
5. *An empirical analysis of the procedures and practices of transport infrastructure prioritisation in six western countries is performed.* This creates both a characteristic picture of each country, an impression of their institutional similarities and differences and a fan of suggestions to help us come closer to the ideal of procedural rationality. The six countries are Switzerland ('prudence by a trek along the bodies'), Germany ('advantage by thoroughness'), the Netherlands ('patience is a virtue'), England ('no pay, no cure'), the USA ('a joint adventure') and France ('long live complicity!') (Chapter 5).
6. *The country reports are reworked into country scores on the generation of variety and storage of variety dimensions. In this manner they find their place within the typology of institutional structures.* To realise this the empirical data on the various countries is translated into four administrative indices: federalism-unitarianism, democracy-technocracy, integralism-reductionism and corporatism-pluralism. Federalism and democracy are both aspects of multicentrism, integralism and corporatism lead to high cooperation. Conversely, unitarian and technocratic countries tend to be monocentric and reductionist and pluralist countries generally have competitive institutional structures (Chapter 6).
7. *The quality of decision-making in the six countries is evaluated.* The degree of procedural rationality which was proclaimed at the theoretical level in chapters 2 through 4 is now applied to the institutional structures. Thereby, a picture arises showing how the diverse countries deal with checks and balances of information provision. After that, the procedural rationality scores are

compared with three alternative criteria: (1) speed of decision-making, (2) satisfaction of the actors involved and (3) Benefit/Cost evaluation in administrative structures. As an important point of focus in procedural rationality is the assumption that procedural quality M is a good proxy for product quality Q, a test is done on the quality of the *infrastructure* systems in the six countries. We will then get an idea of the plausibility of the relationship between institutional systems and infrastructure systems. At the end, it has become clearer which are the countries that worth while studying to take institutional transplants from (Chapter 7).

8. *The suitability of institutional transplants for a given host country is tested using the concept 'families of nations'.* Chapters 6 and 7 have focused on the first requirement of adequate institutional transplantation: procedural rationality. Chapter 8 will focus on the second one: suitability. Not all innovative institutional transplants will land on fertile soil in the host country. Compatibility indications can be obtained with the aid of the term 'family of nations'. A family of nations consists of countries with similar legal styles and/or cultural value orientations. Families of nations for the six countries in the selection are distinguished, both at the institutional and constitutional levels, which will permit a well-informed estimation of the fit between the basic structure and culture of the host system and the transplant's donor system background. Transplants do not necessarily have to derive from a country in the same family (transplantations from a different family may be quite fruitful), but the institutional designer must be aware of possible complications that may arise after adoption (Chapter 8).
9. *Two alternative institutional design scenarios are put forward for improvement of the Dutch institutional structure.* A practical exercise in institutional transplanted is worked out to strengthen procedural rationality in the practice of prioritisation of transport infrastructure projects in the Netherlands. Requirement 1 leads us to suggest that only some countries are interesting as innovative institutional systems. Requirement 2 thins out this list by dropping a few countries which for legal and cultural reason are not wise or convenient as donor systems for the Netherlands. For the two remaining promising institutional structures, suggestions for institutional transplantations are made. These scenarios are named the Rhineland scenario and the Bay Area scenario (Chapter 9).
10. *A synthetic answer to the research question is formulated, based on all theoretical and empirical study in the preceding chapters.* It appears that in 1998 the same tower of Babel between planners and pushers persists. In the course of five years, many policy reports have made recommendations for the modernisation of the prioritisation process, and yet none has been successfully implemented. This book claims that for this to be realised institutional change is required. Procedural rationality and suitability of institutional transplantation are the

basic factors for this change for the better. But this transplanting is no sine cure. Like organ transplants, borrowed institutional features from one country must become integrated with the system into which they are introduced. Introducing new institutions in such a way that they intertwine with the existing complex of institutions and steer them in the right direction seems to me the ideal synthesis of design and evolution (Chapter 10).



## 2. Procedural rationality and institutional design

*A theoretical answer is given to the research question.* The quality of decision-making can be improved by applying Simon's concept of *procedural rationality* to complex problems swathed in uncertainty. Procedural rationality requires an institutional, not a content-related approach. Procedural rationality is a synthesis of the analytical and political rationalities. Institutional structures should stimulate generation of information by various actors and incorporation of this variety of information among all actors. Not decisions themselves, but search heuristics for information should be rational. *Institutional design* is presented as the methodology to change institutional structures in the direction of more procedural rationality. Institutional design if worked out as the borrowing of institutional characteristics from one country by another is '*institutional transplantation*'. Adequate institutional transplantation has two requirements: (1) realising an increased procedural rationality in the host country by selecting transplants from a *more procedurally rational* donor country, and (2) adopting a transplant *fitting in with the constitutional and institutional rules* prevailing in the host country. Institutional transplantation is the methodology to implement such copying practices.

### 2.1 The legacy of Simon

Despite criticism from fellow social scientists, many economists still apply the ideal assumption that all the relevant information is available whenever decisions need to be taken. They do not actually believe this to be a true reflection of the situation but they justify it by arguing that it keeps the models clear and comprehensible. They take the view that as long as the assumptions that underlie the model are explicitly stated, the technical content is irrelevant. This approach can lead to some hilarious situations especially when it is extended to every single choice and social act:

As is well known, the rational man of economics is a maximizer, who will settle for nothing less than the best. Even his expectations, we have learned in past years, are rational. And this rationality extends as far as the bedroom for, as Gary Becker tells us, 'he would read in bed at night only if the value of reading exceeded the value (to him) of the loss of sleep suffered by his wife' (1974: 1078, in: Simon 1978: 2).

When we talk about making more operational decisions we usually have a calculable number of options open to us and sufficient information on hand. But this cannot be said of complex strategic decisions, given that the options and data then tend to be unlimited. These situations frequently lend themselves to the theory of expected utility which aims to compensate for uncertainty by spelling out the probabilities of the results. The concept of expected utility assumes that the players maximise their expected utility after having calculated how it would appear in relation to the

various options. The expected utility is then defined as the utility they draw from an incident multiplied by the probability of it actually taking place. I am assuming here that factors which cannot be calculated are made up for by applying rules of thumb, which may not adequately describe the problems but nevertheless provide a means of coping with irreducible uncertainty. Expected utility theory still leaves us with the question how the discrete options emerged in the first place and what determines the probability of any future results. This is all very interesting in theory, but it gets us nowhere when we address the practical issues of problem solving.

Herbert Simon, winner of the Nobel Prize for Economics, founded a school of thought in decision theory which has laid to rest the assumption that full information is available. Simon argues that as soon as the consequences of decisions can no longer be rationally calculated, we are dealing with a situation of bounded rationality. At this point, uncertainty needs to be addressed using procedural instead of substantive selection processes. When faced with a high level of uncertainty, the question is no longer how we are to use existing data to calculate results, but how we are to generate additional data to serve as a basis for our choice and when we can be reasonably sure that we know enough. The learning process cannot go on forever: it is attention and *relevant* information that are in short supply, not information as such. This vision involves a shift from rational *selection* processes towards rational *search* processes. Decisions no longer hinge upon the marginal costs and benefits of the future, but upon gathering information until a level of ambition known as the 'zone of indifference', is reached. It is vital to keep the learning process alive in complex and dynamic situations to avoid missing opportunities to adapt to change. A theory that works in tandem with procedural rationality chimes with a world in which the players engage in ongoing reflection and improvisation; theory based on substantive rationality does not.

The study of procedural rationality in circumstances where attention is scarce, where problems are immensely complex, and where crucial information is absent presents a host of challenging and fundamental research problems to anyone who is interested in the rational allocation of scarce resources (Simon 1978: 14).

In the same article Simon sets out the scientific research agenda for the development of 'procedural rationality'. First he points out the need for a clearer understanding of the institutional contexts in which learning processes and decisions come about. He then stresses the importance of gaining deeper insight into the cognitive processes which lie at the very heart of behaviour. Simon is not alone in this opinion. Sage also sees a role for procedural rationality in the search for solutions to problems in the broader social context. He writes:

Behavior is rational, in a procedural sense, when a person effectively uses existing cognitive powers to choose actions in order to alleviate some issue. It is the process of selecting procedures for the resolution of issues that is the basis for and the justification of rationality, rather than the outcome of the decision. Procedural rationality is, therefore, the method of searching for information for solutions to problems. (...) Generally, one would exhibit substantive rationality in an environment of technical or economic rationality. In the environments of social or political rationality we would expect procedural rationality to be the dominant form (Sage 1983: 137-138).

*It seems to me that procedural rationality offers a structured approach to the tension between analytical and political rationality.*

If procedural rationality is the ideal for judicious decision-making, then institutional design is the methodology by which to achieve it. The implications of this statement will be explored in this chapter. Strategic investment decisions, which require complex appraisal due to a severe shortage of information, will serve as an example in later chapters. The allocation of funding to transport infrastructure involves appraisals concerning the expenditure of billions of guilders on accommodating and/or adjusting the increase in the transport flow. The complexity and dynamics which these decision processes bring to the players' environment and to the actual content of the problem are typical of the kind of decision-making and problem-solving contemplated by procedural rationality. The theory and methodology themselves, however, presumably extend beyond the specific domain of infrastructure investments.

First, the core concepts of 'Institution' (2.2) and 'Design' (2.3) will be scrutinised and defined. Though institutional structures evolve, the methodology suggests that (re)design is also possible. Paragraph 2.4 looks for a way of reconciling evolution and design and concludes that, paradoxically, both relate to one and the same phenomenon viewed from different perspectives. To an outside observer institutional systems seem to evolve autonomously in the course of time, but viewed from the inside a great deal of designing turns out to be occurring by the subsystems, alias the players/actors within the system. 'Transplantation' as a metaphor will reconcile between direct intervention and organic growth.

## 2.2 Institutions

Much has been written about institutions but they still defy clear and concise description. North calls them the rules of play in a society which limit actions by excluding a wide range of options.

The major role of institutions in a society is to reduce uncertainty by establishing a stable (but not necessarily efficient) structure to human interaction (North 1990: 6).

At the same time, these institutions enable us to take alternative routes by pointing clearly in a specific direction. At a certain point, the 'path-dependence' which has historically preceded current choices leaves open only a narrow and logical – almost pre-ordained – range of options. As decision-makers could not possibly cope with an infinite number of options, this may be interpreted as an enabler of options as well as a behavioural limitation. Institutions are largely historically shaped and they structure the processes of human choice through a number of organised basic certainties. This stable structure significantly reduces the uncertainty created by the complexity of problems and the limited problem-solving capacity of the actors. Behavioural patterns which are stimulated by institutions are clearly articulated in society and point the way for the institutions of the future. Behaviour which is regarded as negative or unacceptable will gradually die out. The future is, in a sense, prestructured by the past. According to North, institutions derive their relevance from the value they attach to the measurement of whatever is worthwhile, to the protection of rights and the exactment of consensus.

Hodgson (1988, 1993) sees institutions as expectations of behaviour based mainly upon common sense. Formal institutions represent only a small subcategory of this. Though the players cannot address problems or take decisions without support from the institutions, we must not assume that they are always efficient. Players do not aspire to maximum social efficiency, so the institutions which they create are not really geared towards achieving it. Inefficient institutions can survive the march of time if they serve the interests of dominant coalitions of players. Individual players are apparently prevented by limited rationality from achieving individual efficiency, but even if this were not the case, the interplay of individual rationalities would still not produce collective efficiency (Olson 1965, Ostrom 1986, Coleman 1990). It seems that the emergence, continuity and decline of institutions can be decisively influenced by historically evolved and replicated power relationships (Lane & Ersson 1991, Powell & DiMaggio 1991, Steinmo *et al.* 1992).

#### *Formal and informal institutions*

In general, sociologists see institutions as the unwritten *conventions governing social interaction*. Thus, an institutional complex consists of informal behavioural patterns which tend to be acknowledged only when they are breached. These patterns evolve almost automatically without ever having been explicitly agreed. Although they develop gradually through interaction of the players (NIG 1995a) they eventually acquire a legitimacy of their own from which the actors cannot unilaterally withdraw without being penalised. A heavy emphasis rests upon the cultural authoritativeness of shared patterns of behaviour, their repetitive use and minimal changeability. However, institutions do not always develop step by step. In hectic or critical periods it is not uncommon for the established social order to collapse under the pressure of the changed environment. When this happens



renewed fighting breaks out among the players who jostle for their positions and have to actively learn to develop alternative visions and concepts which are more in tune with the new situation. These moments – generally referred to as ‘critical junctures’ – break the established trend, create a new equilibrium, and form the ultimate framework in which new, lesser adjustments can be anchored (Krasner 1984, 1988, Hall 1993).

Legal experts – masters of the art of category definition – define institutions as *rule systems with a praxis*. An institutional system can best be compared to a game that is played by formal rules. These formal institutions do not actually exist but are notional concepts. A cohesive system of initially non-existent rules is designed with the specific aim of rearranging the routine interaction between the actors. Whether these formal institutions acquire legitimacy in informal practice depends on the degree of congruence between the two, which is in turn expressed in the level of acceptance by the players. If the two situations are congruent, the formal rules will eventually start to operate as informal conventions and will be seen as social facts (Rowe 1989, Ruitter 1993). Formal institutions need to undergo a specific programme of design and verification in order to flesh out the new configuration and the way it is to be maintained. The steadily evolving informal institutions determine the bandwidth for the degree to which direct intervention using formal institutions can be made effective.

The duality between rule systems and social norms is discussed by Scharpf (1989) and Krebs (1990) who both argue that there is a crucial difference between ‘decision rules’ and ‘decision styles’. Decision rules stimulate players of (limited) rational ability to display certain types of behaviour by providing a formal framework for striking deals. However, this still leaves a whole range of behavioural options; the remaining uncertainty is filled up with decision styles, or cultural orientations, which give more substance to the structural framework on the basis of what is acceptable and unacceptable. Many of the behavioural options which were theoretically left open by the decision rules do not yet rank among the actual possibilities.<sup>1</sup> We might suppose that consideration of the formal structure would in itself bring the players to a ‘logic of consequentiality’ which would enable them to calculate the consequences of their behaviour on the basis of formal rules, free from cultural influence. But their freedom of choice diminishes still further by the confluence of structural and *cultural* prestructuring. Players adapt their behaviour to suit specific situations and apply the ‘logic of appropriateness’. According to March & Olsen (1989), institutions are interrelated rules and routines that define appropriate actions in terms of relations between roles and situations.

The formalisation of informal institutions is known as *codification*. Attempts to adjust informal social conventions by introducing new formal institutions is known as *modification*. In both cases the equilibrium in the behavioural relationships of the players must be broken. The effects are fairly mild in the case of codification as

tangible rights can then be derived from former contactual norms, but they cannot be accurately predicted in the case of modification because the existing contactual norms are deliberately broken. Thus, the greater the deviation from the existing complex, the more precarious and uncertain the effect of intervention. In many cases, a new equilibrium will develop only through a long and tentative process of adaptations, because the original stable structure emerged out of a combination of the formal and the informal.

#### *Interactive and interpretative institutions*

Institutions are rules which structure thinking *and* behaviour. Certain assumptions or agreements have to be made in order to cope with uncertainty and confine the search for relevant data. Institutions (or heuristics if we view them in terms of search procedures for information) can facilitate the search process immensely.

Players have to deal with two rationalities when making choices: political rationality and analytical rationality. Campbell has renamed these *interactive* rationality and *interpretative* rationality (NIG 1995b). When an actor wants to maximise his utility he needs to secure or extend his material resources and competences and to realise some measure of the substantive objectives implied by his role. Each rationality has its own brand of uncertainty which is kept in check by other types of institutions.

The analytical uncertainty on the part of the players is linked to the way problems are solved. The players have to gauge the information they need in order to make a justifiable choice which will ease or get rid of their problems. But as they cannot go on collecting information indefinitely to reach as rational a decision as possible, they apply general guidelines or approaches to assess the effect of a decision or intervention and ascertain whether this will be enough to meet a set standard. Problems are interpreted within the framework of specific concepts and assessment criteria which enable decisions to be taken despite the intrinsic uncertainty. These are known as *interpretative* institutions because they organise the conceptual content of decision-making. Nelson & Winter (1982) call them 'routines' and compare them to standard business operating procedures. When they are informal in character, they consist of conventional schemata for addressing problems, such as conceptual models and visions of the future, which are usually formulated in terms of quality and reflect the ideas behind models of policy analysis. When they become more formal they take the form of criteria analyses, decision norms and standards, which are used as decision-support tools.

Interpretative institutions structure the *thought processes* of the players who take the decisions. Each player has his own notion or idea of the problem but this is not always tightly structured and often amounts to one or several accounts in which a few dominant concepts are more or less moulded into a coherent whole by argumentation. Moreover, not all of them have converted this implicit or explicit vision into a model which could serve as a basis for investment decisions. The use

of a decision model makes sense only to those in control of real instruments of power. Other participating (secondary) actors with goals but no means benefit from the influence of concepts and information on the investment results, but as they are unable to assertively steer the allocation of the funding they have little use for a decision model. In other words, they can contribute to a changing variation in the interpretative institutions and supply data to help flesh out the decision model, but they cannot select the concepts which will serve as the basis for the selection of investment initiatives or programmes.

Political uncertainty on the part of the players is related to the behaviour of the players in the vicinity. Each player has to estimate how far the others are prepared to deploy their instruments of power, but often he does not know enough about their preferences and tactics to make an accurate prediction. In a field riddled with interdependence the actors experience a pressing need to agree on behavioural norms which will curb opportunism and cultivate mutual trust: 'governance structures' (Williamson 1985, Bromley 1991), 'ownership rights' (Richter & Furubotn 1984) or 'interaction rules' (De Bruijn & Ten Heuvelhof 1994). This type of institution determines 'what's yours' and 'what's mine', it dictates the amount of say in the interaction processes and divides up the material resources or production factors and legal competences among the players, thus establishing the negotiating positions from which they will attempt to realise their goals or ambitions. These institutions, or behavioural norms, represent the *interactive* side of decision-making and organise the process of interaction. When *informal* in character, they take the form of behavioural codes; when formalised they are turned into procedures or arrangements.

Unlike interpretative institutions, interactive institutions do not involve innovation but convert the results of the allocation into costs and benefits for the various players. They are the consequence of the gaming element behind the investment programmes. Besides the sought allocational efficiency optimum, the investments also have implications for (re-)distribution among the actors. Expectations regarding changes in allocation of costs and benefits spur the actors into joining battle to ensure that these work out to their own advantage. This battle of interests is to some extent circumscribed by implicit and explicit behavioural norms which also offer guidelines on the rules of engagement. Violations can and do happen but sanctions applied by the other players generally ensure that anyone who tries to win more benefits and/or bear fewer costs than the codes and contracts allow is punished accordingly.

#### *Matrix of institution types*

We could summarise all of this in the following sentence:

*Institutions are the designed and/or evolved rules of play which structure human interaction by allowing a restricted set of options for thought and behaviour.*

Institutions can be categorised first as either formal or informal:

- 1) *Formally established institutions.* These are designed by the players and aim either to change the existing informal practices (modification) by intervention or to formalise routine informal practices (codification). Formal institutions offer a structure.
- 2) *Informally legitimate institutions.* These evolve organically and become routine practice without being explicitly established by the players. Informal institutions are a cultural legacy.

They can then be assigned to the subcategories interpretative or interactive:

- 1) *Interpretative institutions.* These are characterised by the way problems can be solved or substantive objectives can be achieved. They reflect a conceptual approach by the players.
- 2) *Interactive institutions.* These are characterised by the way the costs and benefits of decisions are divided among the players. They reflect the power relationships which determine the patterns of bargaining and interaction.

This twin categorisation allows us to capture the essence of this paragraph in the following matrix:

*Table 2.1 Types of institution*

<b>Type of institution</b>	<i>Formal</i>	<i>Informal</i>
<i>Interactive (political)</i>	Arrangements (procedures)	Behavioural codes (interaction norms)
<i>Interpretative (analytical, conceptual)</i>	Assessment norms and standards (rules of decision)	Customary conceptions (perspectives or conceptual models)

Decision-making arises through the interaction of the actors. However, the behaviour of some players is often perceived by others as an unknown factor in the equation. Will they, for instance, be prepared to collaborate in the realisation of investment projects or will self-interest make them compete because they think that this will better serve their interests? Implicit and explicit behavioural norms function as positive or negative stimuli in shaping cooperation and guarantee that some degree of certainty is established.

- 1) Implicit behavioural norms are informally established institutions which determine whether cooperation or competition is acceptable. Violations of these *behavioural codes* are punished at most by informal sanctions such as exclusion.
- 2) Explicit behavioural norms are formally established rules which determine whether cooperative or competitive behaviour is to be encouraged. These *arrangements* indicate whether and in what way breaches of contract are to be punished.

At the same time, decision-making is based on concepts and visions of problem solving which, as concrete interpretations of the object of the decision, reflect thoughts about the problems. Interpretative institutions consist of two main elements:

- 1) A limited number of key concepts and their interrelationships in a *conception* or *vision*. The conceptual richness, range and size determine the range of arguments upon which decisions can be based.
- 2) A more *formalised* model which categorises incoming data and may convert it numerically. This is usually linked to one or more *decision rules* which indicate the decision to which the combination of model and data is expected to lead. The decision model is the result of the embraced concepts taken from a generated variety of concepts. The model is the conceptual selection area for decisions.

Almost without exception, interpretative and interactive institutions are entwined in an institutional complex in such a way that conceptual and power-related issues can be addressed in tandem. Ideas and behaviour are closely connected in decision-making processes through proposals for initiatives and the way that these are underpinned. Even when a player's sole intention in the negotiations is to maximise benefits and minimise costs, he still needs to argue his case. There is apparently a need to back up hard intentions with soft words:

Why this indirectness as though the success of the game depended on appearing not to play it?... And individuals tend to employ strategies of mystery and mastery, seeking to master the situation while keeping their own thoughts and feelings mysterious (Schön 1983: 225, 227).

(...) since most political processes have the potential of being disruptive for an organisation (by placing strains on the status and power system), organisations will approach all decisions as if they were analytical problems. Even when it is obvious that bargaining takes place attempts will be made to conceal it in an analytical framework (March 1976: 89-90).

The principal aim of the players is to bag for themselves the best possible ratio of costs and benefits. The interactive institutions determine the scope of possible actions. In the long run it is behaviour and not rational thought which determines the allocation of the budget and the resources. At this point the interactive prevails over the interpretative. However, keeping in mind the *motivation ethos* mentioned earlier, this explanation does not cover all aspects of the selection process. Though interaction can account for cooperation and competition, (in)efficient allocation and the implications of certain choices for the players, it says nothing at all about the *nature* of the choices. It sheds no light on the way the problems are solved, the conceptual changes and innovation, the range of considered alternatives, or why some facts and arguments are singled out for a role in the selection processes and others are not. Interactive institutions merely reflect the comparative and static aspect of institutional processes. The interpretative dimension, on the other hand, clarifies the changes in the applied analytical concepts and explains the criteria for the choices. Active experience and fresh insight are translated into new preferences; the range of concepts is determined by the diversity of arguments generated individually and collectively for the players. When all of this is converted into the decision model we can see how far this range is also employed in selection processes for physical innovation. Altogether this forms the dynamic aspect of selection processes. Without this dimension there would be no way of explaining movement.

### 2.3 Design

Like 'institution', the term 'design' is an umbrella concept which is applied by countless disciplines. However, the very fact that it is applied in so many areas raises the question of whether it is always used with the same meaning. Roozenburg & Eekels (1991) point out that the methodology of design distinguishes between knowledge of the object and knowledge of the process. Knowledge of the object is specific to each separate discipline whereas knowledge of the process is a generic term for all design processes. Knowledge of the process – which will be discussed in this section – stems from system theory and operational research and will be applied as a general methodology to the diverse objects.

What exactly do we mean by 'design'? Writers generally agree that design relates to every change that is deliberately introduced into a system. In this sense, it would involve little more than organising the elements of an existing system and searching out the arrangement best suited to meet the demands of the environment on the system output (Jackson 1991). The design process begins with an analysis which reduces the actual situation to a model in which a system is formed by the interrelationships of the most relevant elements. These relationships are then rearranged (catalysed) to bring them into closer harmony with the environment (Foqué 1975). Each alternative arrangement results in a new design. Criteria

external to the system can then be applied to identify the design best suited to the environment. This subsequently qualifies for implementation in the social and/or physical domain. The adequacy of the model can be measured by the emergence of the anticipated effects once the changes have been pushed through. If direct implementation is too risky, the model can still be used experimentally and the effects of changing the elements and/or rearranging their interrelations can be observed in a test situation. Experiments can of course be conducted in laboratories with physical designs but they often take the form of sketches or computer simulations in which elements and interrelations are converted into construction plans or programming rules. In other cases they resemble games or mental exercises where logical thought processes are expected to lead to plausible results or scenarios. In the last two cases the results are virtual since no physical product is delivered. They therefore clarify the mechanics of the design only in so far as the system model is able to reflect the actual situation. The design has, in a sense, been tested for implementation through the desired and anticipated effects which emerged during the experiment.

Essentially, the duality in design theory culminates in the question of how far design is determined by rational and analytical activity and how far by intuition and experience.

#### *Scientific design theory through general principles*

Even though designs will see the light of day with or without the aid of methodology, Simon (1969) still thought it a good idea to develop one. He maintained that it made sense to establish a generic design methodology to avoid having to re-invent the wheel time and again. This theory would allow all individual, idiosyncratic design activities to be subsumed in a set of scientific principles. Typical of design theory (he lists the disciplines of engineering, medicine, business administration, architecture and painting) is an engagement with *desirable or potential worlds* rather than *already existing or necessary worlds*. Design science does not concern itself with the way things are, but rather with how they could be – with artefacts. These artefacts are functions of human goals and aspirations and are adapted accordingly. Science engages with (descriptive) analysis and design theory with (normative) synthesis.

Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. Design, so construed, is the core of all professional training; it is the principal mark that distinguishes the professions from the sciences (Simon 1969: 55-56).

Designers who stick rigidly to academic theory set pure sciences or disciplines at the top of the hierarchy and see engineering as an applied science for making

diagnoses and prescribing cures. Skills and attitudes which can put into practice the academic principles are for people who operate in real situations.

This approach allows us to break down the workings of a designed product into three main components:

- 1) *Task*. The function(s) of the design. What is it used for? Often comprising criteria, requirements and preferences from the system environment. Many future users or customers have specific requirements over and above the main function.
- 2) *Constraints*. The inherent system constraints, which are locked into the system and must be left alone. There are usually physical laws in the case of physical products or processes and rules of human behaviour in the case of social products or processes.
- 3) *Parameters*. Variables with a constant value within the existing system but which are nonetheless manipulable and may be adapted to suit the demands of the environment. Tinkering with these parameters is considered acceptable in some cases and unacceptable in others.

The normative crux of these artefacts now lies in the adaptation of the functions of the internal system to the external demands of the environment. Deliberate reshaping of the elements and interrelationships by fine-tuning the parameters (3) to the task (1) will deliver higher levels of achievement than in the natural system configuration. The acid test for the design is then the degree of adaptation required by the system functions in order to meet the demands of the environment. To identify the most effective artefact we would therefore have to be able to abstract from all the internal constraints (2), and the design itself would have to correspond exactly with the demands of the environment (1). As this will be a Utopian ideal in most cases, the constraints of the internal system will continue to be visible. The intricate assignment which Simon sets the designer is based upon the mathematical method of optimisation:

*Decompose complex problems to a set of sub-problems and express these in terms of tasks (1), constraints (2) and parameters (3). Take as given the constraints (2) and fixed parameters (3a which must not be manipulated), and find the values for the variable parameters (3b) which lead to maximisation of utility (maximum realisation of the goal). Take into consideration all possible worlds which meet the goals and the criteria of the external environment (1). Then find the specific world in the set which also meets the constraints (2) and the fixed parameters (3a). This will leave only the variable parameters (3b) in the equation. Find the combination of variable parameters which meets the demand for maximisation of utility.*



The origin of an alternative should be traced before deciding whether it is viable. In other words it is necessary to find out which heuristics have led from the existing to the desired situation. Even Simon realises that it would take a Herculean effort to generate all possible worlds and their potential consequences, for he adds that the time needed for the search depends mainly on the standard of the results which the designer is prepared to accept and not on the total range of possible worlds.

*Applied design theory via variations on a theme*

Those who reject the theoretical principles of design think that far more can be learned in practice through dialogue with the problem area. Situations ought to be understood and changed at one and the same time. Contrary to the claims of scientific design theory, specific cases do not fit into a limited range of subcategories; the true situation is far more erratic and made up of unique cases. The founders of operational research accuse their own epigones of being obsessed with techniques, mathematical models and formal algorithms, and of having lost touch with the real business of formulating and solving problems (Churchman 1971, Ackoff 1978, Checkland 1981). If designers are to avoid turning into technocrats, it is imperative that they align their competing visions of problem solving so that subjectivity can be guided in a dialectic process to a state of inter-subjectivity which verges on objectivity. The basic assumptions of the various visions will confront one another in a participatory process and create added value. Managers do not have to deal with isolated sub-problems but dynamic situations resulting from chaotic and complex situations made up of mutating and inter-related problems. In this quagmire we must rate flexibility higher than methodological stringency. The means should not be sought amongst the goals; both should be discussed regularly. The prudent designer will use a process of *reflection-in-action* to make continuous qualitative judgements which he cannot possibly underpin with explicit criteria. Most of the time he applies his skills without recourse to rules and procedures or constraints and parameters. These implicit measurement norms, otherwise known as 'tacit appreciative systems' (Vickers 1973), are a set of interrelated, tacit standards of assessment which serve as a basis for organising and evaluating experiences; a blend of experience, intuitive judgement, coincidence, surprise and improvisation create closer harmony with the complexities and dynamics of the actual situation, because every undertaking produces feedback leading to a new incremental change which meets the requirements more precisely.

In a good process of design, conversation with the situation is reflective. In answer to the situation's back-talk the designer reflects in action on the construction of the problem, the strategies of action, or the model of the phenomena, which have been implicit in his moves. (Schön 1983: 79).

The desired situation is, as it were, unveiled step by step as problems and solutions are reformulated. Models which provide insight and invite response are indispensable tools in this process. There is moreover no linear time sequence behind the formulation of problems and solutions. The designer owes his success to whatever he himself experiences as a solution. Thus, success does not emanate from the application of a coherent general theory, but from an adequate theory of the unique case which has gradually been constructed through action and reaction. The alternative, which the interactive designer is offered in exchange for scientific design theory, is known as *variations on a theme*: the more a designer sharpens his powers of perception and broadens his experience in the course of his career, the more he will be able to discover and reconstruct different variations within representative main themes. At the same time, the reservoir of patterns at his disposal will increase so that his own ingenuity will become more and more of a match for the reality.<sup>2</sup>

### *Discovery and justification*

We might get a clearer idea of the difference between the theory and application of design if we take the winning of a game of chess as an assignment: checkmate your opponent in  $x$  moves. Simon, who himself was a highly respected amateur writer of chess programmes, has boosted the further development of this form of artificial intelligence by devising *systems of rules* for fields and pieces, and by designing trees which cover all possible moves (Simon & Newell 1972). These systems have, in the meantime, advanced much farther and are capable of calculating billions of moves. Modern chess computers do not make 'mistakes'. There is no way that world chess champion Kasparov could match calculation capacity of this calibre but, until only recently, he still managed to beat the best computers in the world.<sup>3</sup> He does this by *identifying patterns* in the positions and basing his moves on estimations. It is no longer the individual noughts and ones that count but the overall configuration. Kasparov compensates for his limited mathematical ability by feeling his way very selectively through immense trees of potential combinations. He has built up in his memory an extensive collection of recognisable patterns with the attendant combinations of moves and search procedures. This saves him enormous time and effort when deciding on his next move. However, to say that Kasparov's virtuosity proves that it is better to approach design with the *esprit de bricolage* than the *esprit d'ingénieur* is only half the story.<sup>4</sup> For no chess player can build up enough expertise to win a grand master's title unless he has a profound grasp of the rudiments of the game – and this requires more than just trial and error. The basic themes of what the pieces are allowed to do, how much they are worth, the object of the game, popular combinations of moves and so forth must be learned before they can be converted into tasks, constraints and parameters. It is only upon the basis of this rudimentary knowledge that chess players can build up experience and discover

more variations. General principles of design are a useful starting-point but they need to be enhanced with pragmatic reflection-in-action so that they can be applied to unique practical situations. It is impossible to calculate the values of the variable parameters because of the virtually infinite number of routes that lead to checkmate. The core of elementary basic knowledge must be adapted to new, practical discoveries. As this core is surrounded by ambiguity and requires interpretation, the designer has to work from the central themes towards more specific variations. In this way an explicit structure can be created from its analytical elements. Work commences from a position of planned expediency.

Summarising, we could say that where applied design theory is concerned, the 'context of discovery' precedes the 'context of justification'. In scientific design theory, momentum accumulates precisely because of the rational combination of analytical elements (Losee 1989). In the former case synthesis precedes analysis, while in the latter analysis precedes synthesis. If we take the view of Roozenburg & Eekels and regard design essentially as the conversion of a required function into a specific norm by applying a sequence of systematic steps, then applied design is more akin to what the English understand by the *art of design*. *Engineering* places greater emphasis on a standard analytical approach dominated by calculation. In both cases the central themes are linked with the variations and together they prove necessary for the ultimate product, but discovery and justification are applied in reverse order. When the method of design leads to a final synthesis through a verifiable process of reductionist analyses, we can, essentially, conclude that the most desirable result has been generated. This conclusion cannot be drawn when it is impossible to reconstruct the steps to the synthesis because there is nothing to compare it with. Every alternative path might lead to solutions that are equally effective and perhaps even better. Simon (1962) formulates the problem of system designability as follows in 'The Architecture of Complexity': when the relationship between the system and its environment can be excluded from the equation (in other words when *ceteris paribus* stipulations can be applied), and the internal system relationships are predictable, the overall picture is so clear that a reductionist approach is realistic. The complexity is manageable. Churchman (1971) described these systems as 'separable'. Systems which are intensely related to their environment or are subject to unpredictable internal relationships cannot be redesigned in this way. Changes in the elements and relationships 'leak away' into the environment or into the system itself to such a degree that the desired effects can be achieved only by large-scale tentative holistic intervention. These systems are known as 'non-separable'.

The level of standardisation in the design approach depends on the level of consensus within the discipline with regard to the basic principles. Basic principles are easier to develop for separable systems than for non-separable systems. It is not

unrealistic to differentiate between disciplines according to the rigidity of their paradigmatic core and to conclude that they could be approached less intuitively and more analytically as diagnoses and formulas become more standardised. We have opted for the following general definition of design:

*Design is the deliberate and methodically structured adaptation of a system to meet external quality requirements by manipulating elements and relationships. The analytical arrangement of elements and the creative synthesis of patterns does not come about in a fixed chronological sequence, even though the rational element will become more and more dominant as professional working methods become more standardised.*

Table 2.2 Two approaches to design

Design philosophy	Scientific design theory	Applied design theory
Type of systems	Separable systems	Non-separable systems
Approach	Engineering approach, manipulation of elements and relations	Art of design approach, dialogue with the situation
Justification	Context of justification	Context of discovery
Relevant methods and techniques	Standardised mathematical methods	Diverse experimental methods

## 2.4 Institutional development: design or evolution?

*Evolution is not merely 'spontaneous order'*

If institutions are the consolidated uncertainty-reducing rationales and behavioural codes which have gradually evolved through the past interaction of players, any desire to actually design institutional systems might come across as somewhat naïve. Interactive and interpretative institutions have both emerged through the passage of time and an external designer is bound to lack the knowledge and other instruments of power that are needed to overhaul these deeply entrenched structures. Hayek (1949), for example, categorically rejects suggestions of hierarchical structuring, not only because he considers them unfeasible but also because he finds the evolutionary existence of a 'spontaneous economic order' preferable as a norm. Unstructured spontaneous action leads to the strongest mobilisation of new knowledge and the most desirable form of institutional renewal (Hayek 1949, 1990, Witt *et al.* 1991, Hodgson 1993, Vanberg 1994). The players know themselves what is good for them and cannot allow their initiatives to get bogged down by extensive regulation; in this context institutional design is seen as pure blasphemy. Nonetheless, this polarisation of design and evolution may actually be attributable to a misunderstanding. Both the public and the private sector regularly undergo programmes of reorganisation; they often set up long-term joint ventures and projects and take decisions on mutual relationships and the

distribution of ownership. Realistically, they cannot even live with the uncertainty emanating from total spontaneity, and so they actually look for anchors when making choices.

Changes which have developed in institutional systems over a long period of time can be explained if we place them against a backcloth of evolution. There is no place in these systems for direct intervention by designers. Evolution comes across as an insular, uncontrollable and aimless process which offers few openings for explicit proposals for institutional adaptation. However, in everyday reality, these openings are experienced by the players as a real need. If we home in on a shorter timespan we suddenly encounter a completely different scenario of:

(...) players purposively changing the rules of the game in order to increase the number of options (Tsebelis 1990: 7-8).

Tsebelis uses the term *institutional design* to describe this practice of manipulation. In other words, he does not see institutional design as, by definition, an approach involving a designer who independently draws up a plan for a procedural-rational system with the aim of its implementation, but rather as a tug-of-war in which the players try to manipulate the rules to their own advantage in order to acquire greater discretion and more say. These practices do not of course preclude input from designers. But they will not deploy a monistic approach, which would mean overhauling and redesigning the whole system; they will adopt a partial approach in which one or two changes will be proposed and substantiated statements can be made as to their effects. Churchman (1971) applied the terms 'monistic' and 'pluralistic' to the one-sided and the multi-sided approach and wrote the following:

Thus we can see the lines of the intellectual battle. It is a fight between pluralism and monism, between those who wish to see and design their world in pieces and those who see it and design it as a whole. The pluralist is a problem solver, incrementalist, individualist, empiricist. He becomes most uncomfortable when challenged to explain what the system is supposed to accomplish, what are its 'real' objectives, because in his heart he doesn't believe that a system has objectives; 'only people have objectives', he says. (...) The monist's tenets are all concerned with the concept of the 'whole system'. A whole system in its broadest sense is that system of which every other system is a part. This implies that the goal of the whole system sets the goals for every other system, since according to the definition of a system given above, 'part performance' is always evaluated in terms of system performance (Churchman 1971:71).

Institutional design is, in reality, almost invariably 'pluralistic', but this is fundamentally different from a situation in which design is impossible or undesirable. Design and evolution are not real opposites. Even though institutional complexes have gradually evolved they have also been deliberately manipulated by the players along the way.

### *Universal optima and local equilibria*

The institutional structure at any fixed point in time has been reached by following a set route punctuated with specific moments in which choices had to be made. Paths are followed and turnings taken which define the structure of these moments and may be instrumental in shaping possible future developments. This trend is generally referred to as *path dependence* (North 1990, Arthur 1990, 1994).

Inherent in this approach is the notion that individual innovations are part of a 'policy sequence' in which institutional development renders some interpretations more persuasive and makes some prospective policies more politically viable than others. Underlying the concept of a policy sequence is the notion of 'path dependence': decisions at one point in time can restrict future possibilities by sending policy off onto particular tracks, along which ideas and interests develop and strategies adapt (Weir, in Steinmo *et al.* 1992: 192).

Though institutional systems often develop one step at a time, fundamental changes still take place now and then: it is as if a crossroads is reached and a choice has to be taken between two or more paths leading in different directions. Venturing down one of these paths triggers an irreversible process. Usually these decisions turn out later to have been crucial in the further development of the system; they establish 'lock-ins' or emerge afterwards as 'critical junctures'. Alternative routes are ruled out from that moment on and vanish from the scene.<sup>5</sup> This phenomenon has also been discerned in biology (Gould), the philosophy of science (Kuhn), economics (Arthur), political science (Krasner) and technology dynamics (Dosi):

Technological paradigms have a *powerful exclusion* effect: the efforts and the technological imagination of engineers and of the organizations that are focused in rather precise directions while they are blind with respect to other technological possibilities. At the same time, technological paradigms also define some ideas of 'progress'. Again in analogy with science, this can hardly be an absolute measure, but has some precise meaning within a certain technology. (...) Once given these technological and economic dimensions, it is also possible to obtain, broadly speaking, an idea of 'progress' as the improvement of the trade-offs related to those dimensions. (...) 'Progress' on a technical trajectory is likely to retain some cumulative features: the probability of future advances is in this case related to the position that one (a firm or a country) already occupies vis-a-vis the existing technological frontier (Dosi 1984: 15, 17).

A critical juncture enables players with superior knowledge of a specific area to use institutions for their own ends and thereby to increase their knowledge advantage and improve their control over other instruments of power. After the change has been implemented they are usually able to capitalise on their advantage: this is the point at which the law of the increasing returns comes into effect (Arthur 1994). Other players arrive too late and lose ground in terms of obtaining resources or

achieving objectives. Lock-ins can have a positive effect upon the institutional system as a whole, but this is by no means guaranteed. Sorties along new paths do not always end well, or might have ended more favourably if proper attention had been paid.<sup>6</sup>

How can the premature selection of a less desirable alternative be prevented? The most convenient way of assessing the position of an institutional system and its prospects is to compare it with similar institutions (in other commercial or policy sectors or countries) which owe their existence to an evolutionary process. But although remarkable similarities may emerge between the institutional systems, redesigns must unequivocally focus on each of their specific trajectories in order to prevent a system crisis when new elements are introduced. Institutional systems can take lessons from one another on how to steer developments in particular directions, but introducing the institutions of one system into another does not automatically guarantee identical effects. It takes time for the results of redesign to become visible because the players have to adjust to the new structure and because the reciprocal influence of the *Fremdkörper* and the various host elements can affect the structure and process in ways which were not evident in the donor system. The alien element must be viewed in the light of the institutional complex in which it will operate – a complex which has followed a different path-dependent route from that of the donor system. It is not always possible to estimate how players will respond to new, borrowed institutions as their functions will acquire meaning only when they become embedded in the total institutional infrastructure.

The other side of the coin is that the designer runs the risk of actually focusing too much on institutional structures as mechanical entities and of adopting an over-deterministic approach. There is a very thin line between voluntarism and determinism:

Analytical problems in the social sciences are often complicated by the fact that they embody a particular relationship between what we would call structures and freedom. If micro-behaviours are not entirely constrained and are capable of affecting their own environment and the future, strict determinism is bound to neglect the existence of a *range* of possible worlds which can emerge, holding structural worlds fixed (Dosi 1984: 299).

Eventual consequences of institutional reforms can be assessed by the designer only if he considers the whole structure; and even then there is still a chance that unpredictable behaviour on the part of the players might lead to unanticipated effects.

The influence of redesign on performance can be accurately predicted only if the actors' behaviour is dictated solely by the position or role implied by the interests of each one of them. However, players are flexible and adapt their strategies as soon as institutions have been changed. Thus, the most that the designer can do is make a rational estimate of the consequences which the institutional changes could

bring about. Arrow (1963) showed that these rational estimates could definitely be a useful activity when he discerned the path-dependent course of institutional systems without any knowledge whatsoever of the jargon. He recognised the significance of the sequence and timing of the alternatives offered to the players. High-quality alternatives can appear on the agenda too early or too late and perhaps the less desirable ones come precisely at the right time to be selected in. This timing sometimes has far-reaching consequences for the paths that are taken and irreversible choices are often made. Essentially, the 'Arrow paradox' reveals that even though all the relevant alternatives are present, the sequence in which they are addressed could result in sub-optimal solutions being chosen. The future may be unpredictable in theory, but designers of institutional systems can make intelligent proposals by reflecting long and hard on the structures and the capacity of the players to adapt.

Although institutional designs are able to improve the performance of a system, the universal optimum is still out of reach. After all, one crucial effect of path-dependence upon institutional systems is that that each 'optimum' is a local optimum which applies only to that specific system. Unique evolutionary processes have made it impossible to compare the departure points of different institutional complexes. The work of the institutional designer is geared to the realisation of a partial optimum for a specific path-dependent system.

Functional arguments are arguments about the movement of systems toward stable self-maintaining equilibria. But without further specification, there is no reason to suppose that the attained equilibria that are reached will be global maxima or minima of some function rather than local, relative maxima or minima (Simon 1978: 4).

### *Stasis and dynamics*

Interactive institutions relate to the equilibrium that is agreed for the allocation of resources among the players. How are the resources of an institutional structure divided? Which behavioural protocols are used? Interpretative institutions, on the other hand, relate to the creation of cognitive perspectives. What significance is attached to the goals and resources within the institutional structure? What shared knowledge comes into play in the interpretation of phenomena? Institutional equilibria can be broken only when the players develop new insight through practical experience and subsequently change their preferences. At such moments these players try to break the established equilibrium to make it meet their new requirements. If they manage to spread this 'innovation' to other actors or if the changed vision is adopted or imitated by fellow players then the equilibrium will indeed be broken. Thus, an interpretative-institutional change will fan out into a battle about the allocation of resources: the interactive institutions will take their cue from the interpretative institutions and make sure that the new relationships stabilise when the fight is over.



This evolutionary duality has already been identified in biology in the transmission of genetic information:

Eldredge (1985: 7) construes evolution as involving two largely independent hierarchies – genealogical and ecological:

‘Genes, organisms, demes and monophyletic taxa form one nested hierarchical system of individuals, that is concerned with the development, retention and modification of information enscenced, at base in the genomen. But there is at the same time a parallel hierarchy of nested systems, that reflects the economic organization and integration of living systems. The processes within each of these two process hierarchies, plus the interactions between the two hierarchies, seem to me to produce the events and patterns that we call evolution.’

Eldredge explains the dissonance that seems to characterize our view of evolution with reference to the fact that these two hierarchies intersect, but do not coincide (Full 1988: 219).

Darwinian natural selection entails two mechanisms rather than one. It entails a selection mechanism that decides upon the relative success or failure of organisms of producing offspring. But it also presupposes the functioning of a replication mechanism that ensures that features are responsible for reproductive success or failures are transmitted to subsequent generations. The units that the inheritance mechanism works on are genes, or more generally, *replicators*. Selection forces, on the other hand, impinge on *interactors* (Vromen 1994: 120).

(On Nelson & Winter) (...) their theory incorporates the working of two evolutionary ‘feedback’ mechanisms rather than one: ‘natural selection’ and ‘adaptive learning’. Both mechanisms can produce adaptation via feedback loops on actual results. But whereas ‘natural selection’ brings about population dynamics and presupposes individual status, adaptive learning typically brings about individual dynamics (Vromen 1994: 137).

Natural selection and interaction in the form of economic or ecological relations with the environment are both aspects of a static dimension. Data transmission, genealogies, adaptation and new variations are aspects of a second, dynamic dimension. There are units of information which are copied from generation to generation (replication), those which are retained (retention) and those which develop deviations (mutation); mutants increase the variation and, when ‘fit’, can evolve into new ‘species’. Other information bearers exist which exhibit behaviour in response to their economic or ecological environment and are selected when they have found their ‘niche’. In the process they clash with bearers which try to deny them their niche (competition) and they work symbiotically with other bearers in order to survive (cooperation). Evolution is the result of the combination of both aspects of the duality: replication (retention or mutation) and interaction (cooperation or competition).

Without mutations interaction would remain in a state of perpetual equilibrium, like neo-classical economic models: not a single change would occur in the information

which the bearers work with. Organisms would never develop genetically and would always belong to the same original species. Players would never change their views and would continue in unchanging interdependent relations. Without interaction no selections could be made from the various replicators: because information would not be tested against need, all replicators would survive and not just the fit ones. Organisms would have infinite scope to reproduce because there would be a never-ending food supply and no natural enemies; then, after a time, a limitless number of mutants could arise. Players could develop fresh insight time and time again and try to convert it all into innovative decisions; after all, there would be no standard policy practices to test them against.

However, the combination of replication and interaction leads to transformations commonly known as evolution (Hull 1988: 408-409). The institutional designer seems very far removed from this kind of timescale. What has now become of the

(...) players purposively changing the rules of the game in order to increase the number of options (Tsebelis 1990: 7-8)?

*Evolution is also 'deliberate intervention'*

In this whole process an institutional designer is a player who, at certain moments, gently tries to steer the way that actors replicate and store information units. Obviously, his power is limited, but it can be enhanced by knowledge of what determines the 'fitness' of information units, players, institutions and institutional complexes. Toulmin refers to the 'conceptual weeding-out process':

In any live discipline, intellectual novelties are always entering the current pool of ideas and techniques up for discussion, but only a few of these novelties win an established place in the discipline, and are transmitted to the next generation of workers. The continuing emergence of intellectual innovations is thus balanced against a continuing process of critical selection. Some conceptual variants are picked out for incorporation, others are weeded out and ignored; yet, in suitable circumstances, this same process can account for the continued stability of a well-defined discipline, or for its rapid transformation into something new or different (Toulmin 1974: 139-140).

It is not enough for the institutional designer just to wait and see which 'fit' concepts are left after the selection. The chance that highly promising concepts become lost because they fail to get 'locked-in' must be minimised. The generated range of ideas must be as wide as possible and form the basis of the selection. Highly promising mutant concepts which merit further development turn up on a more than incidental basis, but they will never reach maturity unless helped by deliberate intervention. This is why the designer must not only keep an eye on the concepts and conceptual variations in circulation at each stage but also those which are selected in the institutional structure or incorporated in the collective tradition. In other words, *these* fit and inclusive concepts ought to be selected which have

emerged from a broad range of concepts. There is, after all, a greater likelihood that the concepts and conceptions which are favoured are those which offer most in terms of problem solving. And that is what procedural rationality revolves around.

Whilst there is no doubt that the designer can influence the conceptual course of institutional history, the way in which the concepts that he introduces, nurtures or protects stay fit is always highly unpredictable and dependent on the context. Thus a concept that is embraced by one environment may take on different connotations in another despite identical terminology. This phenomenon is known in genetics as the one-to-many relationship between genotypes and phenotypes. The genotype is the genetic blueprint of an individual organism; the phenotype is the exterior form, which grows under the influence of its physical environment (Dawkins 1982). Depending on the situations which arise in the course of the development, the genotype usually offers enough scope for the development of a wide range of phenotypes:

Genes do not dictate the behaviour of organisms. Even if genes fully determined the phenotypic characteristics of organisms, Sober (1984) argues, they may not do so on a one-to-one basis. Sometimes the relation is many-to-one: some phenotypic trait is not the result of one single gene, but of the interaction among an ensemble of genes. This phenomenon of *polygenic* effects is well known among biologists. According to Sober, this phenomenon implies that the contribution that some single gene makes to the productive success of organisms is context-dependent (Vromen 1994: 184).

Each genome, each 'genotoken' to use Wimsatt's felicitous term, has the structure that it has and no other, just as each organism, each 'phenotoken' has the structure that it has. Given any genotoken, numerous alternative phenotokens may be produced, depending on differences in the environment. All possible translations of the structure in a genotoken into various phenotokens are known collectively as a reaction norm. Thus, the 'information' encoded in genome is narrowed to one eventuality, one phenotoken. None of the other potentialities equally 'programmed' into the genotoken are realized. The net effect is the loss of nearly all the potential information in the genotoken. Replication at both the genetic and the organismal levels requires environmental input (Hull 1988: 415).

The introduction and incorporation of concepts in institutional complexes is analogous to this. Each concept has a number of potential meanings which crystallise out only when the concept itself acquires meaning in relation to its institutional environment. Which other concepts is it connected to? Which players will use it? Only when it is placed within this framework will the concept acquire meaningful shape and its potential be realised.

Moreover, when memes (i.e. cultural ideas or concepts, MJ) come into contact with each other in a mind, they have a marvellous capacity to become adjusted to each other, swiftly changing their phenotype to fit the circumstances – and it is the recipe for the new

phenotype that then gets replicated when the mind broadcasts or publishes the results of this mixing (Dennett 1995: 355).

Neither the actors nor the designer can predict the exact meaning which these concepts will acquire within an institutional system. But rational ideas can still be developed on how concepts will be embraced. And this is precisely what is needed for the design of desirable alternative institutional structures.

*Institutional design as the transplantation of individual characteristics*

The designer must take account of two major requirements when redesigning an institutional system:

1. *The design must stimulate innovation.* This means that (a) the decision-making processes must be structured in such a way that they generate a wide range of ideas and (b) this range of ideas must actually be used as a basis for selection. This requirement will be explored further in Chapter 3 with the aid of two guarantors.
2. *The design must fit into the path-dependent history* of the institutional system which it aims to replace. The incorporation of characteristics from other systems in an alternative design for the host system is introduced here as 'institutional transplantation'.

Watson (1993) coined the term 'legal transplantation' for the practice of copying parts of one legal system to another. This expression, which conjures up associations of non-compliant organicity as deliberate intervention expresses perfectly the synthesis of design and evolution in institutional design. A transplanted organ 'fits' into the body of a new owner, provided it is not rejected, and will then become integrated with the other organs. This is more or less the image that is applied to the transplantation of institutional characteristics from an alien system into a newly designed host system. Will they become a logical part of the greater system and behave as if they have always belonged there or will they be unused and rejected as foreign bodies? Or will they, as dominant *Fremdkörper*, make the operations of the other institutions impossible?

A successful legal transplant – like that of a human organ – will grow in its new body, and become part of that body just as the rule or institution would have continued to develop in its parent system. Subsequent development in the host system should not be confused with rejection (Watson 1993: 27).

In this book the term 'congruence' is used with reference to the practice of borrowing institutional characteristics from 'families of nations' (Castles *et al.* 1993). A family has a style of formal legislation and informal social conventions which

creates a resemblance among its members. It often has a recognisable parent somewhere in its genealogy who has exported the system elsewhere (e.g. France or England) and whose descendants have inherited many or all of the characteristics.<sup>8</sup> But in the course of time, some members also take on characteristics from other systems and cease to be an exact copy of the original parent. This is how 'hybrid' institutional structures come about. Therborn shows that families can develop in several ways:

We may distinguish between four types of families or groupings of nations. First, there is the lineage type, held together by descent from a common origin of some sort. Secondly, there are the *separated* siblings, kindred nations kept apart by state boundaries or, more concretely, non-state bound social units with significant similarities between them, irreducible to common ancestry. Then we have what might be called (elective) *affinity groups*, the *Wahlverwandschaft* connected by the process of diffusion, of imitation or avoidance (negative affinity), freely elected or established by pressure. Finally, there are the *partnerships*, the unions of deliberate coordination. The kinship of nations is multilinear, overlaid and subject-centered. Any given member may count his or her kinship affiliation in terms of overlapping lineages, affinities and partnerships. So should the observer (Therborn in: Castles *et al.* 1993: 329).

Borrowing characteristics from other institutional systems is not an easy option. It is usually safe enough for a design to include institutional characteristics from countries which originate from the same or related families but this is not always what a system needs in order to remain vibrant. Sometimes it is actually better to adopt less obvious characteristics which the institutional structure would never develop on its own, but which would have a renewing, refreshing or systematising effect. The designer should verify the congruence of this kind of hybridity before introducing it.

1. *Congruence with the structural and cultural (constitutional) ground rules of the host system.* Institutional rules are often closely related to constitutional rules and generally imply the same primary method of approach (see Chapter 8 for a further elaboration). The adopted institutional characteristics need not necessarily belong to the same family (certain forms of hybridity can prove advantageous) but they must not clash. Thus a designer in Germany could follow the American example and speed up the decision-making process by relaxing the appraisal procedures and arranging hearings at random intervals. But he would have to bear in mind that the accompanying legal systems and norms involve a higher level of self-assertion and a lower level of risk avoidance, which organised groups will have to get used to. These groups are, after all, accustomed to acting at fixed times as the legitimate representative of a specific interest and not to engaging in competence battles with other pressure groups in order to get their case heard. Conversely, an American designer who hopes

to strengthen the position of collective transport by following the German example must realise that players in America use checks and balances far more egoistically to promote their own narrow self-interest and that they focus on short-term returns. Change is not impossible but it would involve a learning process with partly unpredictable consequences.

2. *Congruence with the institutional rules of the host system.* An institutional designer in England who is inspired by the democratic aspects of decision-making in Switzerland, where the institutional structure is totally different, can hope that the introduction of tight lump-sum budgeting will also result in a creativity in England allowing the adoption of *pendolini* (tilting trains) to run on existing tracks, but he has probably failed to realise that privatised rail companies hardly ever tolerate government intervention and that parties in England are less loyal to agreements than are the Swiss. A designer who submits institutional proposals to the Swiss *Bund* to curtail the power of awkward cantons – something which can be done by central government in London – runs a huge risk that relations will deteriorate with these cantons, which can still find plenty of openings in the institutional system to make life disagreeable for the Bund. This would only consolidate existing deadlocks. The correlations shown in Chapter 6 will give an indication of the degree of similarity between the institutional structures employed in the appraisal of transport infrastructure.

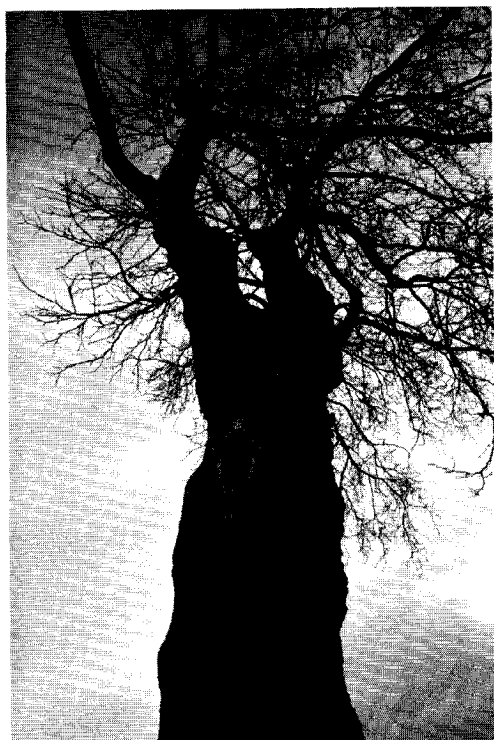
Orücü explained for students of comparative law how families of nations could be identified in a hybrid system; this is likewise applicable to the problems here.

The first concern of a comparatist undertaking a study of mixed and mixing systems and most important, 'shifting systems' or 'systems in transition' therefore, is to seek the permanent characteristics of the legal families between which the established mixed jurisdictions have moved. These characteristics cannot arise out of substantive rules of law, but must be related to the structural and philosophical roots of the families. It is generally agreed that legal rules and the borrowing of them do not alter the position of a legal system within the classificatory scheme. (...) Thus it is not the borrowing of the rules and provisions, even the principles and standards of another legal system that is crucial. What is crucial is the borrowing of a mode of thought and the handling of the law, its structure and sources (Orücü *et al.* 1996: 338).

Hybrid systems come about through mixing. However, the way in which this mixing takes place is crucial for their functionality and productivity. Added value can be gained through the entwinement and exchange of characteristics. In situations where, say, the stages of decision-making which require consensus are dominated by flexible institutions of the Anglo-Saxon type and the (logical) implementation phases are dominated by German institutions, added value can be achieved by mixing broad orientation with precise implementation. At this point

procedural rationality comes into play by combining the best of both worlds. When the mixing is unstructured, there is a greater risk that characteristics from diverse origins will be at total variance with one another. The application, sequence and prioritisation of rules will become dubious and ambiguous. The system will end up incorporating two or more institutions which sometimes have the same aim but are not clearly connected. Players will become confused and start squabbling about the scope of the rules. Struggles like these can persist and eventually result in the subordination of one institution to the other or the pointless duplication of procedures. Orücü *et al.* (1996) use the term 'structured mixité' for goal-oriented or coordinated mixing in which identifiable basic principles are applied and 'unstructured mixité' for spontaneous or incidental mixing. Viable institutional designs can be developed provided mixing is judiciously carried out; otherwise, unforeseen and undesirable consequences will ensue for the whole institutional structure. These consequences are far more likely to arise if institutional characteristics are imported ad hoc from foreign sources as some elements in the overall structure could – unforeseen by the designer or through the absence of one– overshadow or frustrate others.

Chapter 2 has explained that procedural rationality provides a framework on how to deal with information for complex problems in dynamic worlds where planners and pushers work past each other. Institutional design can be regarded as the improvement methodology that accompanies procedural rationality. When designs are developed with the help of foreign examples, this is called 'institutional transplantation'. The fitness of transplants must be constantly borne in mind throughout the reorganisation of the institutional structures, also with regard to the historical path-dependence of the particular institutional system. Major emphasis has been placed here upon the *feasibility* of potential designs. Families of nations is a useful concept in this context. We will find it back in chapters 6 through 8. Chapter 3 will address the question of *desirability*. Two quality guarantors will be discussed with a view to identifying 'good decision-making structures'.





### 3. Institutional design via quality guarantors

*Quality criteria for procedural rationality are formulated.* In order to recognise and realise procedural rationality, one has to be able to determine what it consists of. It is upheld that a great variety of information sources has the highest value, as they can be checked against each other. Decisions based on a large variation of ideas, concepts, indicators and data rely on two principal mechanisms: (1) the generation of a great pool of information and (2) storage of this variation in the official analytical decision framework. Maximum generation of variety and average to moderately high storage of variety reflect procedural rationality in institutional structures. Two 'quality guarantors' are developed, one to reflect *the variation of ideas generated in the whole system* and another to reflect *the inclusion of this variation in the selection environment* of the system. The starting point in this chapter is the observation that existing institutional structures comprise a bias in favour of specific conceptual topics at the expense of others (3.1). Two guarantors aimed at increasing the variation of the information supply are then introduced (3.2 and 3.3). Since a certain amount of bias is inevitable, it is concluded that a varied bias is the ideal (3.4).

#### 3.1 Existing bias as starting point

Since institutions are heuristic entities which fill in gaps of uncertainty, they fulfil a useful function, limiting the costs of the search for information and facilitating choices.

The standard decision processes enable the economic system to economize on the intellectual and material inputs of the control processes. It is impossible to devote great energy to each and every problem of economic life, to explore all consequences of their acceptance, to weigh extensively all bounds on acceptance of every interested party, and so on. The standard decision imparts 'automatically', as it were, to economic actors a reasonable number of control processes (Kornai 1971: 119).

Weimer (1992) also devotes attention to the positive aspects of 'automatic government'. According to him, stable decision-making rules deserve more attention from economists (fixated as they are on maximisation of benefits 'at the margins') than they tend to get, because they are cheap and embody wisdom from the past. In the view of Vromen (1994), routinised decisions and marginal benefit calculations need not even be incompatible: only when it becomes clear that an institution is not 'working' does the need for replacing the routine framework and recalculating the benefits arise. Such an institutional change only occurs when zones of indifference are crossed. Routinised behaviour involves a 'truce' in interorganisational conflict. Another important function is that it facilitates the

storage of the organisation's specific operational knowledge. Routinised behaviour both has a motivational aspect ('routine as a truce') and a cognitive aspect ('routine as a memory') (Nelson & Winter 1982).

However, not all effects of the institutions existing at a given moment are by definition favourable. In the first place, they are certainly arbitrary, reflecting as they do the views and wishes of the actors who brought them about. It was for this reason that Schattschneider (1965) called institutions the 'mobilisation of bias': they are the decision-making rules of those who had the power to introduce such rules, intentionally or unintentionally, in the past.

There is a considerable power in structured ways of seeing. These are often based on reification, that is to say, their arbitrary character remains hidden. Consequently, people do not recognize them as moments of positioning but simply assume that this is the way one talks on *this sort* of occasion. Routinized forms of discourse thus express the continuous power relationship that is particularly effective because it avoids confrontation (Hajer 1995: 56-57).

### **Box 2: The profitability bias**

Financial or economic institutions reflect the gains that dominant actors have been able to establish in the past. This holds e.g. for the profitability standards applied to infrastructural projects in various countries, and for the way in which these standards are given concrete form in individual cases. In France, for example, an official limit of 8% is applied fairly rigidly for high-speed lines by the Ministère de l'Équipement, des Transport et du Tourisme. This figure is not a matter of business economics, but of socio-economic considerations. Since everyone knows that many social benefits cannot be expressed in monetary terms, and that countless benefits are difficult or impossible to calculate in advance, the above-mentioned limit is largely a political affair: the national ministries use it to force local authorities to make a contribution to the project themselves if they are going to realise disproportionately large profits from it. It is striking, too, that the technical or economic vision of administration passed on jointly to high-ranking civil servants and company directors at the Ecoles Supérieures continues to survive in an environment where, while it may be less than adequate as regards content, it remains perfectly viable from a political point of view. The opposite case is found in Switzerland, where hardly anyone dares to estimate the value of large-scale projects on economic grounds, and the ultimate decision is usually taken on the basis of a referendum. Voters there are apparently not prepared to accept cost-benefit ratios which they do not understand, and do not give the administrative elite the chance to use such indicators unilaterally. The presentation of a clearly defined transport concept with a basic service offer is more effective there. In most other countries, profitability standards of 5% or 8% based on the rate of return on state bonds, operate in the background but play little or no role in public discussions.

The data produced do not exist in a vacuum, but derive their significance from the framework of institutionalised concepts and standards within which they are employed. A profitability percentage is only meaningful in the theoretical context within which it is used, and the effect of considerations of efficiency, effectiveness or social desirability can only be understood in the context of the interpretative institutional complex built up around them. Churchman notes that

Facts, measurements and theories are methodologically the same (Churchman 1982: 71).

All institutional structures are associated with a certain bias, with weak and strong sides. In vital, innovative systems, however, this bias is as many-sided as possible.

### 3.2 Product quality Q and process quality M

It is important to evaluate existing institutional systems with reference to quality criteria in order to determine whether interaction and replication processes are leading to the desired results, and how such processes can be improved. In this evaluation, the designer subjects the system's parameters to qualitative assessment.

#### *Q and M*

An institutional structure aimed at ensuring high process quality will probably increase the chance of high product quality, but there is no guarantee of this:

A man may be encouraged to perform better in certain designed environments, but he can never be designed to create (Churchman 1971: 4).

Institutional systems go through a process of interaction and replication to deliver a certain content, which may be a product or service. The product performance Q describes the quality of the content of the system output. Q corresponds to Becker's 'substantial rationality', introduced in section 2.1. Of course, a good product is what we really want, but unfortunately Q cannot be determined as such before the process that produces it is in existence, and must thus be regarded as a necessary analytical fiction. In order to maximise the chances of getting the desired results and achieve procedural rationality, we opt for maximisation of the process quality M (which may be taken as a Measure of the Quality we are really after). In other words, the procedures of the institutional system should be such as to ensure that the course taken by the decision-making process maximises the likelihood of achieving the desired product.

We thus introduce two types of quality:

- 1) *The product quality of the physical system (Q)*, which indicates the social cost-benefit ratio of the infrastructural network. Q may be expressed e.g. as an overall

assessment of production costs, transaction costs and benefits. In the example used here, this requires data on the performance of the transport network, viewed in the light of the preferences of the population. Such data can be collected e.g. with the aid of statistical methods (congestion figures, duration of the decision-making process, intermodal content of the infrastructure) or via surveys of infrastructure users, but only after the whole process of decision-making concerning the construction of the network, and the actual construction, have been completed. The fact that Q can only be determined ex-post with the aid of indicators and never in advance means that Q cannot be used to determine what is a desirable institutional system. Nonetheless, in section 7.4, a few indicators of Q in the countries studied will be discussed.

- 2) *The procedural quality of the institutional system (M)*, which indicates how well the structure of the decision-making process reflects procedural rationality. This procedural variable M is a proxy for Q. For the actors in the institutional system, it is the only usable measure of the quality of decision making, because while decision-making precedes the physical production, the decision makers still want some indication of whether they 'on the right path'.

This choice of an institutional or 'social' approach to the quality of decision-making processes is not unique. Design experts such as Bucciarelli have also advocated placing decision-making about technology in a social, rather than a material, context:

In its simplest terms, design is the intersection of different object worlds. No one dictates the form of the artefact. Hence, design is best seen as a social process of negotiation and consensus, a consensus somewhat awkwardly expressed in the final product. (...) I want to break away from this 'technology as element' vision of technology in culture. I will adopt a more alchemical perspective that allows for transmutation and recognises the irreversibility of history. I want to frame my study so that technology is more integral, more ideational, more fully social than is allowed by a framing process that sees it only as a material element of culture (Bucciarelli 1994: 20, 50).

Decisions are first taken at the level of ideas within a specific path-dependent institutional structure, and the physical artefacts arising later from these decisions reflect the previous idea-based considerations. The Q score thus, as it were, 'lags behind' the M score. The material infrastructure network realised in a given country, with the associated costs and benefits, reflects the immaterial decision-making structure prevailing there.

#### *An M that reflects Q*

Q is identical with Becker's substantial rationality. It has proved impossible to determine this in practice, because too little information about wishes and possibilities is available to permit a calculation based on expected utilities. Q is the

ideal image, but it does not provide a usable tool before decision-making has taken place; at most, it can be used in retrospect in an attempt to evaluate the perceived value of the physical product once made.

Working on the basis of procedural rationality demands an M which reflects Q as closely as possible without itself being content-based. The deviation of the course of the decision-making process from the wishes of the customer (Q) will then be minimised. Since M remains a surrogate for Q, it has something in common with quality determination in accordance with the ISO 9000 standards, which apply to more operational production processes: the design of a well thought out decision-making structure can avoid a great deal of errors and defects. No guarantee can be given, however, that all considerations made will be well based and will result automatically in the production of good decisions: at best, the procedures offer probabilistic satisfaction in the sense that the risk of mistakes and missed opportunities is intentionally minimised. And if the final physical results turn out not to be what was wanted, the decision makers will have less to reproach themselves with.

But the question remains, how can a link be laid between Q and M? How can an institutional system be designed to be as closely in line as possible with the wishes of customers? This is where an information-oriented approach to decision-making can prove its worth.

In complex, dynamic investment organisations, the institutional system can be approximated to as a search system, where the attention is not restricted to the interactive institutions determining cooperation and competition in the decision-making process. The interpretative institutions which are the source of innovation via conceptual variation are equally important. The systems analyst Sage (1983) stresses the importance of collecting a sufficient variety of concepts and information to permit mapping of the possible decisions. Justifiable selection is only possible on the basis of a sufficient variety of information.

It almost goes without saying that decisions, at least prudent decisions, are seldom made without information. For it is only through information that one becomes aware of the need for a decision. Information is often defined as data of value in decision making. The activities of data acquisition, aggregation, evaluation and distribution are generally involved in information processing. (...) The objectives of human information processing for decision-making include acquiring data that is most relevant for the decision at hand, and obtaining a relatively full and complete interpretation of the data that is obtained (Sage *et al.* 1983: 149-150).

Two business anthropologists put forward a similar viewpoint:

Generally speaking, investment policies can be no wiser than the quality of information shared (Hampden-Turner & Trompenaars 1992: 187).

Finally, the philosopher of science writes:

We must begin, therefore, by recognizing that rationality is an attribute, not of logical or conceptual systems as such, but of the human activities of which particular sets of concepts are a temporary cross-section: specifically, of the procedures by which the concepts, judgements and formal systems currently accepted in these enterprises are criticized and changed (Toulmin 1974: 133).

### 3.3 Two quality guarantors

#### *Demonopolisation of the information supply*

Procedural rationality comprises aspects of both consensus formation and of problem solving (see Chapters 1 and 2). Lakatos (1971) claims that acceptance of consensus as the exclusive norm in the assessment of alternatives takes away the criteria for 'progress' or 'solution'. There must be procedures which guarantee the content of scientific input during appraisal. At the same time, he is of the opinion that while some scientific theories or paradigms may have more explanatory or predictive power than others, we must never go so far as to assume that one particular theory has definitively 'beaten' all its competitors. According to Lakatos, the rejection of a theory does not necessarily imply the rejection of the entire paradigm (or research programme) to which it belongs. A paradigm can still be valuable after some of its specific theoretical components have been 'falsified'. There is a need for a variety of disciplines and research traditions, each able to comment on the others. Procedural rationality demands 'institutionalised criticism', with as wide as possible a range of visions released to tackle problems. It may be noted, however, that these different theories may still remain separate, not integrated into a single system. Rein & Schön (1994) criticise the dominant approach in policy analysis, in which politicians formulate policy aims while scientists and other experts provide the analytical processing and support for them. This is unrealistic, and does not match the requirements for an innovative social debate about problem solving: after all, forming an opinion about a given problem of relevance to society is also a social process in which all relevant actors should participate. Ackoff (1978) believes that professional interdisciplinary teams give added value when it comes to problem solving. When various disciplines are confronted with one another and all are invited to contribute their own specific insights, we get the best chance that the full range of the problem will be covered and that the maximum field in which solutions may be sought will be brought into view.

The institutionalisation of possibilities for delivering corrective criticism is also a pragmatic solution which may allow us to approach the Habermasian ideal of power-free dialogue and increase the reflexivity of the system (Habermas 1991, Hajer 1995). Only such a demonopolisation of the information supply in

institutional structures makes it possible to solve problems and reach consensus at the same time.

Calibration points or guarantees which can be used to test the quality level of a system are called 'quality guarantors' (Churchman 1971). Institutional systems built up on a rational procedural basis include such guarantors, which demand as wide as possible a variety of information for the purposes of decision making. Two guarantors may be defined with reference to the two dimensions of institutional evolution mentioned in Chapter 2, viz. mutation/retention (1) and cooperation/competition (2). When a variety of ideas have to be generated for decision making, these two evolutionary mechanisms come into play as follows:

1. *The creation of a wide variety of ideas.* To this end, a large pool of arguments, opinions, facts and figures must be generated. This demands frequent, active conceptual mutation.
2. *The taking of a decision based on this variety of created ideas.* This requires a selection environment, capable of dealing with this variety during the selection of the desired alternative. Without this selection environment, the variety of input ideas will be lost when it comes to decision making. The appraisal framework should thus either contain a rich pool of criteria capable of ordering the chaotic mix of arguments, opinions, facts and figures from the environment, or be flexible enough to permit determination of new criteria to deal with the varied input. A recognisable selection environment demands enough cooperation between the players to permit creation of a compartmentalised conceptual framework in which the generated variety can be pigeonholed.

*Guarantor 1: intentional creation of variation*

Rational search behaviour for information demands relativisation of the 'sanctity' of existing standards reflecting the current information status quo.

A standard can only be idealized in a relative sense - relative to one's current state of knowledge. A standard is neither immutable nor absolute. Hence as our understanding of a concept increases, we change our formulation of how it ought to be observed and measured (Ackoff & Emery 1972: 7).

This is where an evolutionary approach to the appraisal process becomes meaningful. Since the environment of institutional systems is constantly changing, the concepts, conceptions and decision rules used by the systems should change with it. One of the important insights we owe to Darwin is the realisation that functionality is never complete or absolute in practice, but that organs or organisms derive their value from their utility in a specific situation, which can only be revealed clearly via processes of trial and error. This insight is not limited in its

scope to the biological world, but also applies to the information world of science (Toulmin 1974, Hull 1988) or policy analysis (Majone 1989, Hajer 1995). The utility of concepts, conceptions, criteria or standards can only be revealed by the use made of them, showing that they do apparently meet a need.

**An evolutionary epistemology would be at minimum an epistemology taking cognizance of and compatible with man's status as a product of biological and social evolution. In the present essay, it is also argued that evolution - even its biological aspect - is a knowledge process, and that the natural selection paradigm for such knowledge increments can be generalized to other epistemic activities, such as learning, thought and science (Campbell, in: Radnitzky & Bartley (eds) 1987: 47).**

Or, to put it in another way, 'knowledge' must match the aims of actors if it is to be of value. The chance that a concept will prove useful increases with the number of phenomena it can be used to explain, so that other actors will also be able to use it to explain phenomena. Hull (1988) has called this utility characteristic 'conceptual inclusive fitness': a concept or conception is 'fit' in an evolutionary sense because a large number of phenomena can be described or understood with its aid; it is useful within various contexts. Churchman (1982) is of the opinion that concepts, criteria and indicators must possess both 'width' and 'depth'. In other words, a wide range of phenomena must be explicable with their aid, and this explanation should lead to deeper insight into the effects involved. The question is now how these viable ideas can be generated and maintained within the institutional system as a whole. The creation of valuable information is important not only for individual actors, but especially also for the system as a whole - for while each actor strives to satisfy his own requirements, the function of the entire institutional system must be of central importance for the institutional designer.

The more technologically and socially complex the activities of an enterprise, the more must the strategic manager rely on the managerial structure to insure that the activities of those involved in the specialized division of labour are consistent with the strategic goals. The role of the managerial structure is to overcome the bounds on individual rationality of those involved in the organization (Lazonick 1991: 78).

Individual rationalities must be deployed in the interests of the system rationality, and that demands 'structure'. Each individual actor wishes to disseminate and gain acceptance for his or her own concepts, conceptions and rules, in favour of those of other actors. But added value for the institutional system arises precisely through mutual evaluation by actors of one another's concepts. Such mutual evaluation leads to a rise in the number of mutations, and increases the conceptual variation. The problems experienced in relation to uncertainty and the mapping of observed uncertainty are due not so much to the unknowability of reality as to the low level of attention paid to the creation and acceptance of a wide range of alternative



theories, decision models, indicators and data. The wider the variety of concepts, the higher the risk that actors will actually filter out the richest and most useful ones.

The burden of rationality then consists in the fundamental obligation to continue reappraising our strategies in the light of fresh experience (Toulmin 1974: 503).

The argumentative approach conceives of politics as a struggle for discursive hegemony in which actors try to secure support for their definition of reality. (...) This struggle does not take place in a social vacuum but in the context of existing institutional practices. One should analyse in which practices discursive dominance is based and by what means specific conceptions are furthered. In other words, institutional arrangements are seen as the preconditions of the process of discourse-formulation (Hajer 1995: 59,60).

### **Box 3: The profitability bias (2)**

The lack of alternative approaches in the assessment of the viability of enterprises or projects is clearly reflected in the one-sided stress on 'return on investment'. Institutional structures should permit the incorporation of a wider variety of indicators in order to make wider, more valuable project evaluation possible. Indications such as lost 'opportunity costs' due to the failure to undertake other investments, the extent to which working capital is lying fallow, the motivation and job satisfaction of the personnel, customer satisfaction with the products delivered, shareholders' equity, market share and future perspectives in the overall market segment within which an enterprise operates are just as important as profit figures. Nearly all these indicators are also directly applicable to infrastructure projects, but are not given room to grow in many institutional structures. The role of the institutional designer is to ensure the creation of a decision-making structure in which alternative arguments are allowed alongside the dominant considerations.

#### *Guarantor 2: storage of generated variation*

Generated variation is stored when actors exchange ideas with others, and those ideas which are widely accepted grow into institutions. But to what extent are the alternative considerations mentioned in the previous subsection actually compatible?

It has become common practice to approach alternative interpretations in decision-making processes in terms of two or more opposed paradigms (Dosi, Hall), 'policy belief systems' (Sabatier) or 'discourse coalitions' (Hajer). There is less agreement between the various authors about the extent to which and the way in which these alternative approaches can be combined to arrive at new conceptions. These differences of opinion can be traced back to disagreements in the philosophy of science, where Kuhn and Lakatos believe (in contradiction to Toulmin and Hull) that paradigms are irreconcilable because they have different starting points and

hence radically different lines of argument. For example, Lakatos believes that research programmes consist of two main components:

1. A hard core of negative heuristics (the 'don'ts'), which form the deepest basis of the theoretical approach and state which questions should not be asked and which paths should not be followed.
2. A protective belt of positive heuristics (the 'dos') with various theoretical effects, which state which questions may be asked and which directions may or should be followed in a search for solutions.

In particular the existence of the hard core of negative heuristics for each group of theories means that the supports of the various paradigms can only communicate with one another via their protective belts, which provide a possible common interface for dealing with concrete problems. The deeper negative heuristics will never be the subject of discussion. In the last resort, all paradigms are internally consistent wholes, and their supporters will not allow themselves to be drawn into discussions which threaten the integrity of the hard core.

The opposing view is taken by Toulmin and Hull, who question the internal consistency of paradigms and point out that such fusions between paradigms can and sometimes do take place. The essentials of research programmes are not easy to describe clearly and consistently, for they change in the course of time. Moreover, the significance and description of the concepts used also change in the course of time, despite strenuous attempts to define them unambiguously. Such shifts in the meaning of concepts can change old antitheses into syntheses, and contradictions into paradoxes.

#### **Box 4: The dynamics of hard cores**

A similar dichotomy is found in the political sciences, as pointed out by Hajer (1995) in his comments on the differences of opinion reflected in the work of Sabatier (1987, 1993) and his own work. Sabatier distinguishes various policy belief systems, each of which is based on a deep core of images of man and society surrounded by layers of policy approaches and recommendations. Different policy belief systems can interface via their outer layers and undergo mutual shifts in the very long term, though at heart they are based on radically different assumptions. He bases this theory on empirical material from actors associated with various (economic and ecological) policy belief systems, who take turns in occupying the dominant positions of power. Hajer sees a different empirical reality. He observes that while there was an economic and ecological 'discourse coalition' in the '70s and '80s, the various groups involved worked with concepts and story lines which changed in the course of time, so that no stable essence could be found. As a result, these various trends merged in the '90s, giving rise to the 'ecological modernisation' discourse which stated that prevention of emissions to the environment can actually be effective and efficient, and can lead to innovation and increased

profits in the long term. 'Pollution prevention pays' was the slogan. A similar phenomenon may be observed in the appraisal methods used to determine priorities for the transport infrastructure, where more and more ecological criteria have been incorporated in the cost-benefit analysis during the '80s and '90s. The question as to whether the inclusion of environmental aspects in an economic interpretation framework, with values being expressed either in utility or in financial units, really represents a fusion of economic and environmental approaches is open to debate. It could also be regarded as a case of one body of beliefs swallowing up the other whole; in line with this, not all ecological actors feel an equal loyalty to the new CBAs. Many environmental groups feel that basic issues are being fudged. Moreover, the economic value of nature tends to be negligible compared with that of employment or mobility, which does not facilitate the acceptance of the ecological modernisation of extra infrastructure.

It is true, of course, that concepts and conceptions are not completely static and that their deep cores may evolve - but they do so at different rates. Dosi, writing about innovation processes, states for example that the dissemination of new concepts often changes the meaning of existing concepts and absorb such concepts very slowly, thus leading to a very gradual paradigm shift.

Although it is obviously simpler for the analysis to consider the patterns of diffusion of an innovation as if the latter were a once-for-all phenomenon, this might be misleading, since any major innovation is likely to yield a series of incremental changes and improvements, which change the potential number of adopters and the profitability of the adoption itself (Dosi 1984: 285).

The extent to which different paradigms can be combined depends ultimately on the time scale considered and on the degree of stability of the institutional structure.

When storage is strong in an institutional system, the tendency will be not so much for the concepts and criteria used to change quickly, but rather for new incoming concepts and criteria to be fitted eclectically into the existing framework if they prove usable. This framework changes gradually under this influence, getting the chance to grow into an internally consistent whole which we could call a 'paradigm' or a 'policy belief system'. As the internal consistency increases, it becomes increasingly difficult to incorporate new variation; this alternative information will tend increasingly to remain outside the dominant paradigm (the institutional complex), and to develop into a heretical, *recessive* institutional complex. This process continues until the dominant complex is no longer able to handle the incoming variation, and is dethroned to make way for the alternative complex, after a coup led by the recessive players. After this critical juncture, the institutional system will follow another path.

When on the other hand the storage in an institutional system is weak, it will be less easy to define a stable selection environment with clear criteria. The selection of incoming variation will proceed in a diffuse manner. Incoming concepts and criteria will be used in the selection process, but will not be systematically stored and transformed into an assessment framework. The variation 'evaporates' as soon as it is generated, so that both the variation pool and the selection environment remain highly dynamic: under these conditions, a consistent, systematised paradigm simply does not get the chance to develop. The system contains no essences, simply concepts or criteria whose significance is constantly changing and on which the actors are unable to reach agreement until a new concept manages to establish itself in the selection environment. Since a permanent assessment framework is never formed, we cannot talk of dominant or recessive views and a critical juncture does not arise since the whole system remains in a state of constant flux. Any change produced remains incremental.

In the case of guarantor 1, the motto for institutional systems was clear: the more variation in the pool, the better. Hence, it also holds that the more information is generated the better. The situation is not so simple in the case of guarantor 2. No storage leads to completely inefficient use of information; different approaches never get a chance to develop fully. Heavy storage leads, it is true, to powerful, mature assessment frameworks in the long run, but also to increasing isolation which eventually makes it impossible to deal with differences of opinion between dominant and recessive paradigms.

The slogan here would thus seem to be store a reasonable amount of variety in the selection environment, but not too much, so that criteria can be discarded again when they are no longer useful and room is left for the incorporation of new variety.

*Balance between guarantor 1 and guarantor 2: the retention mechanism*

Guarantors 1 and 2 are largely but not completely independent of one another: when too much variety is created, it cannot all be stored, and when too much variety is stored in the selection environment the readiness to store more decreases. Campbell (1987) offers a frame of reference which is very useful for dealing with problems of this kind. He considers that all information-processing can be understood as evolutionary processes of blind variation and selective retention. These processes comprise three essential elements:

- 1) Mechanisms for the introduction of variation,
- 2) Consistent selection processes, and
- 3) Mechanisms for the retention of selected variation.

It is this third mechanism, the retention mechanism, which creates a link between the first two. In this context, Campbell stresses the necessity of 'blind' variation, i.e. variation which is generated without anticipating the results of selection, if real innovation is to be achieved.

An essential connotation of blind is that the variations emitted be independent of the environmental conditions of the occasion of their occurrence. A second important connotation is that the occurrence of trials individually be uncorrelated with the solution, in that specific correct trials are no more likely to occur at any point in a series of trials than another, nor than specific incorrect trials (Campbell 1987: 56).

In his eyes, only blind variation can be expected to lead to fundamental innovation, since a search for information in the light of existing heuristics and/or institutions is bound to be so selective that it will follow well trodden paths. He opts for minimisation of the action of the retention mechanism, to allow optimum space for the blind variation. A side-effect of this choice is that the chance of consistent selection (the second mechanism mentioned above) becomes much smaller. He takes issue here with Simon, who goes for selectivity in the search for information as the spearhead of his procedural rationality in order to clear as much space for the search as possible.

We know today that human reasoning, the product of bounded rationality, can be characterized as selective search through large spaces of possibilities. The selectivity of the search, hence its feasibility, is obtained by applying rules of thumb, or heuristics, to determine what paths should be traced and what ones should be ignored. The search halts when a satisfactory solution has been found, almost always long before all alternatives have been examined (Simon 1992: 4).

The stress on the importance of consistent selection demands a strong retention mechanism, which limits the space available for the introduction of infinite variation. The heuristics or institutions of the retention mechanism cast their shadow ahead of themselves, in the sense that actors make use of them when introducing variation and anticipate the selection. As a result, a selection process operates on the variation generated even before it is submitted to the selection environment. Existing heuristics are made use of in the search, thus reducing complexity and dynamics to manageable proportions. Campbell sees another aspect of this phenomenon:

The 'selectivity', in so far as it is appropriate, represents already achieved wisdom of a more general sort, and as such, selectivity does not in any sense explain an innovative solution. In so far as the selectivity is inappropriate, it limits areas of search in which a solution might be found, and rules out classes of possible solutions. In so far as the selectivity represents a partial general truth, some unusual solutions are ruled out (Campbell 1987: 66).

Simon stresses the structuring of the search behaviour, thus giving priority to the conscious coupling between problems and solutions. In order to increase the chances of orderly selection, the generated variation is modified, made 'anticipatory'. Campbell's blind variation has no form of structuring at all, as he considers that this impedes fundamental innovation. Actors may try any arbitrary solution - and preferably as many as possible - to see if they work. The couplings between problems and solutions which succeed in occupying a stable niche in the course of time are apparently 'fit'.<sup>9</sup>

An inherent tension thus exists between maximum benefits and minimum costs, which may be summarised as follows:

Note that in general the preservation and generation mechanisms are inherently at odds, and each must be compromised (Campbell 1987: 56).

The dilemma confronting institutional designers is now more clearly delineated. Dynamism and stability are both valuable, but can only be achieved together within certain limits. Realisation of too much of one of them means a loss of the other.

*The power of the retention mechanism in decision-making about the infrastructure*

The choice between a strong and a weak retention mechanism is not completely arbitrary. When it comes to decision making, this choice depends on the properties of the deliverable. Retention of institutions shared between actors depends on the degree of cooperation between these actors. Williamson (1975, 1985) made the desirability of cooperation via 'governance structures' and 'relational contracting' dependent on the degree of asset specificity of the product. This asset specificity is higher when it requires a specialist contribution from participants and is of a durable nature.

Suffice it to observe that (1) asset specificity refers to durable investments that are undertaken in support of particular transactions, the opportunity cost of which investments is much lower in best alternative uses or use by alternative users should the original transaction be prematurely terminated, (2) the specific identity of the parties to a transaction plainly matters in these circumstances, which is to say that continuity of the relationship is valued, whence (3) contractual and organizational safeguards arise in support of transactions of this kind, which safeguards are unneeded (would be the sources of unavoidable costs) for transactions of the more familiar neoclassical variety. Thus, whereas neoclassical transactions take place within markets where 'faceless buyers' ... meet ... for an instant to exchange standardized goods at equilibrium prices, exchanges that are supported by transaction specific investments are neither faceless nor instantaneous (Williamson 1975: 61).

Failure to support transaction-specific assets with protective governance structures predictably results in costly haggling and maladaptiveness (Williamson 1985: 79).

Transport infrastructures have a particularly high asset specificity, because it both demands a specialist contribution from the various parties involved and is durable. They are indivisible, have a long pay-back time, large economies of scale and cause considerable externalities (Simonis *et al.* 1978). When the assessment criteria in the selection environment for infrastructure projects are continually changing, it becomes practically impossible to make long-term constructional commitments and to keep the parties involved together during the many years required for the decision-making and building activities. It will be difficult to realise the possible economies of scale and, driven by a lack of mutual loyalty, the parties will keep on trying to get the others to shoulder the adverse consequences of external effects. It follows that the building of transport infrastructure will benefit from firm retention and a high degree of cooperation. The selection must not be continually at the mercy of new variation: this would place undue pressure on the consensus required between all parties involved, and keep on impeding production or delivery of the highly specialised, durable products. Ideally, infrastructure projects should comprise a creative phase followed by one characterised by a high degree of loyalty.

### 3.4 Varied bias as final objective

No matter how coloured, information for the purposes of decision-making aims to say something about the physical system about which decisions have to be taken within the institutional system. That is how the link between Q and M is maintained. Policy analysis is as it were the filter through which the actors in the institutional system make their observations and with the aid of which they intervene in the physical system. An intense relationship between the institutional and physical systems via adequate information supply is of great importance. It is the antenna which maintains the vitality of the institutional system. The information collected is not simply a faithful image of the physical system, but is built around institutionalised concepts, conceptions, decision rules, standards and measuring units. These in their turn are based on estimates made by experts concerning relevant aspects and criteria. These experts observe and label phenomena, and may differ about the relevant categories and their relative value.

We take the perspective that designing is a process of negotiation and exchange across different interests, object worlds and disciplines and that participants must work to establish and maintain both the problem and the norms to be engaged in judging their contributions to the designing task (Bots 1989: 163).

Such negotiations lead to a situation where views and indicators from various sides are adopted, that is in information systems with a varied bias. The more varied this bias, the greater is the chance that it will reflect the physical world adequately.

Policy analyses in non-standardised form often consist of a number of concepts coupled together to form overall arguments, possibly backed up by numerical data. Formalised policy-analysis models often consist of the following components:

1. A category or description indicating the type of problems the model deals with.
2. A number of relevant assessment criteria, condensed from arguments considered to be of importance in connection with the cases to be assessed.
3. A number of weightings indicating the relative importance of the above-mentioned criteria.
4. A decision rule or standard, indicating what action should be taken on the basis of the assessment of the case currently under consideration.
5. A quantity indicating the content of the assessment of a case.
6. The unit in which the above-mentioned quantity is expressed.

The above-mentioned quantity and unit give a clue to the paradigm used to assess a given case or alternative, the category of cases under consideration, and the criteria, weightings and standards used in the positive heuristics layer for analytical formulation of the paradigm.

The institutional structure often contains a dominant appraisal model, the arguments and figures favoured by recessive actors then being kept in the background. In other cases, each actor uses his or her own appraisal model which competes with the models used by the other actors. The guarantors of a high-quality institutional system demand in any case a certain degree of communication between appraisal methods and indicators, and possibly some measure of harmonisation between them. It is not so much the internal consistency of the models which is important for good appraisal, but rather their utility. Rationality does not consist in the order or elegant formalism in which concepts are cast, but in their applicability to new, future situations. A wide variety of indicators and sensitivity tests within an appraisal model, and the availability of alternative models, would be what is needed to meet this requirement.

This multiplicity of evaluative standards and critical perspectives reflects the complexity of policy-making in a pluralistic society. Experience shows that debate among advocates of different criteria is often useful in reaching agreement and permits a more sophisticated understanding of public policy than is possible from a single perspective. Even professional evaluators now recognize that their work becomes relevant only in the broader context of competing criteria and evidence presented by various actors and interest groups. The new slogan is 'multiple evaluation'. This phrase acknowledges the legitimacy of different criteria and perspectives, but also suggests the need to reach a level of understanding that is more than the sum of the separate evaluations (Majone 1989: 169).



Now a dilemma arises. On the one hand, it is desirable to harmonise the existing variety of appraisal models and approaches, to permit a kind of cooperative evaluation. On the other hand, if actors swear allegiance to this new, harmonised appraisal model this creates a new dominant institutional bastion which blocks the way to any further innovation: the harmonised model acts as a stable memory, which does not permit any discussion of its own internal rules:

Memory erases mistakes and thus prevents our learning from them. Since learning is an important objective of the solution-control system, an inactive memory is required for the storage of decision records. The decision record should be used to inform the information subsystem what information is required to monitor the system. The assumptions should be checked periodically to see if they still hold, and the actual effects of the solution should be observed and brought together with the decision record. The actual and assumed conditions and the actual and expected effect should be compared (Ackoff 1978: 195).

The Campbell-Simon controversy returns to this issue at a more concrete level. Institutional structures with a tendency to store variation systematically develop stable appraisal methods which remain in use for a long time. Players have made a massive commitment to the chosen contents of at least a few of the six above-mentioned components of the assessment framework, and thus are unwilling to expose these points to new discussion. The paradigm is therefore thoroughly worked out, its basic principles remaining out of range. But after a certain length of time the recessive actors develop their alternative paradigm more and more strongly and the tension between the two paradigms increases, until the moment is reached when the dominant institutional model is found to be less and less adequate in practice, appraisals made with its aid are no longer greeted with general satisfaction and its position weakens. At this critical juncture, a combination of the dominant and alternative models is developed or a changing of the guard takes place. Changes in the sort of information delivered by the information supply system take a long time under these conditions.

Another possibility is that the various approaches are not harmonised, because a standard model smothers new concepts and data. Actors are not bound to a generally recognised method, but can input all kinds of new information in an opportunistic manner; in this situation, no stable, calculable criteria are encountered in appraisal practice. Dominant decision models are unlikely to arise under these circumstances, because they are not developed systematically. Approaches and assessment criteria change so quickly that it is difficult to establish post facto what exactly their essence was.

#### **Box 5: German reliability and Dutch flexibility**

A telling illustration of the difference between a stable and a dynamic selection environment is provided by a comparison of Dutch and German practice. The authorities in both countries have

for many years had a burning ambition to achieve thorough appraisal of infrastructure projects. Germany has had a standardised procedure for the integral appraisal of infrastructure projects since as long ago as the '70s. There is a *Bundesverkehrsplan* [Federal Infrastructure Plan] including all desired road traffic links, and a *Standardisierte Bewertung* [Standardised Evaluation] with a large number of criteria and subcriteria. All interested parties possess details of the associated calculation methods. Both the plan and the appraisal method are characterised by high stability and durability. The seventies version did not undergo thorough revision till 1992, when the importance of ecological criteria was reinforced and 'political opportunity' was made a separate criterion. After this far-reaching shake-up, the new plan and appraisal model will probably be used without any further change for a long time. Activities aimed at constructing a coherent traffic network will continue without interruption. The Dutch authorities also appreciate the value of a well thought out approach and a solid structure for appraisal processes; here too, long-term plans and scientifically based appraisal methods have been developed. The difference, however, is that actors in the Netherlands keep on using their own arguments and data despite the existence of officially approved practices. There have been several generations of plans and appraisal methods since the '70s, but not one has gained official recognition or corresponded to informal practice. The general agreement about plans and methods which has been sought - and found - in Germany is lacking. Project realisation bypasses plans and appraisal frameworks, and the information generated in this process is not incorporated in 'shared frames of reference'. The generally accepted results which have become commonplace in Germany after years of struggle are often used as examples by Dutch model-makers, but their imitations never achieve the same recognition. While a scientific approach, thoroughness and reliability are widely esteemed in Germany, the ruling philosophy in the Netherlands consists of social acceptability, political primacy and flexibility.

## 4. Typology of institutional structures

*The two main mechanisms that influence achievement of procedural rationality (generation and storage of variety) are elaborated and transformed into a typology of institutional structures. The generation of variety mechanism results in a distinction between multicentric and monocentric structures. Multicentric structures are full of checks and balances and create much informational variety. Monocentric structures develop little variety because of domination by one or very few players. The storage of variety mechanism results in a distinction between cooperative and competitive institutional systems. Cooperative systems punish opportunistic use of information, leading to a high degree of storage. Competitive systems do not provide stimuli to avoid strategic use of information, thereby minimising storage of variety.*

### 4.1 Two behavioural rules for actors

#### *Behavioural rules as assumptions about actors' motives*

Although actors can behave in an infinite number of different ways, an approach which attempts to explain this infinite variety on the basis of a limited number of motives is highly inspiring. A good example of how it is possible to explain a wide variety of behavioural patterns from a small number of simple assumptions is given by Waldrop (1992) in his introduction to complexity theory. It is astonishing how the behaviour of a flock of birdlike creatures moving in a quasi-chaotic manner can be reduced to three very simple basic rules in a computer programme.

Reynold's basic idea was to place a large collection of autonomous, birdlike agents, 'boids', in an on-screen environment full of walls and obstacles. Each boid followed three simple rules of behaviour:

1. It tried to maintain a minimum distance from other objects in the environment including other boids.
2. It tried to match velocities with other boids in its neighbourhood.
3. It tried to move towards the perceived center of mass of boids in its neighbourhood.

What was striking about these rules was that none of them said, 'Form a flock'. Quite the opposite: the rules were entirely local, referring only to what an individual boid could see and do in its own vicinity. If a flock was going to form at all, it would have to do so from the bottom up, as an emergent phenomenon. And yet flocks did form, every time. Reynolds could start his simulation with boids scattered around the computer screen completely at random, and they would spontaneously collect themselves into a flock that could fly around obstacles in a very fluid and natural manner (Waldrop 1992: 241-242).

This application of complexity theory shows clearly to what extent emergent complex processes can be decomposed into simple basic rules.

The 'boid' considered in the present study is called 'actor' or 'player', a unit engaged in some kind of undefined action. It may be an individual, a department, an organisation, a tier of government or even a nation state, depending on the theoretical or empirical requirements. For example, if we choose to call the organisation an actor, it must be verified that it can actually act as a unit and pursue a certain unified goal (Simon 1957, Eggertson 1989, Coleman 1990). If this is not the case, this 'unit' must be subjected to further analysis and resolved into smaller parts.

The reason why countless combinations of behavioural activities can be decomposed into a few basic rules lies in the analytical distinction that may be drawn between 'actors' and 'institutions'. Actors have a constant identity and may be expected to keep on making the same kinds of choices, while an institution in the sense used here is something (e.g. a practice or a relationship), usually established and maintained by social regulatory mechanisms - i.e. by agreements between actors. Actor behaviour centres on a few fundamental human needs or drives, but there can be an endless diversity of institutions and institutional complexes. The big differences that exist between countries may be explained by institutional differences, not actor differences. The behavioural assumptions simply expose in a concise way how the essentials of players' behaviour can be understood. Vromen (1994: 46) calls such a central drive a tendency law; a tendency law states the effect of one particular force that is studied in isolation. Tendency laws are only true *in abstracto*, true that is, if we abstract from other 'disturbing' influences and forces that may be at work at the same time. Tendency laws need not be true *in concreto*. They may not be observed in reality. The countless patterns observed in reality are found by taking the specific institutions, which may differ from one institutional system to another, into consideration.

#### *The satisfaction rule and the opportunism rule*

The rules used to explain actor behaviour in this book correspond to the mutation dimension (for understanding of the interpretative dynamics) and the cooperation dimension (for understanding of the interactive stasis). The first, which we call the satisfaction rule, is related to learning behaviour and is based on Simon's views about 'bounded rationality' and Nelson and Winter's ideas on routine behaviour (Simon 1957, Nelson & Winter 1982). The second, the opportunism rule, is based on the ideas of Williamson (1975, 1985).

### Behavioural rule 1: The satisfaction rule

*Actors think and act in accordance with prevailing institutions, and are thus not continually concerned with cost-benefit considerations relating to their utility function (Nelson & Winter 1982). As long as they can meet their objectives adequately in this way there is no need to collect extra information, and they just keep on flying on this automatic pilot. If however they descend below a certain limit - or pass through a 'threshold of sensation' (Komai 1971) or 'zone of indifference' (Simon 1978, 1992) - they top up their knowledge by collecting extra information. This may be associated with modification of goals and the collection of new resources - i.e., knowledge. The actors' 'utility functions' or perceptions also change (Eggertson 1989). Not until the actors rise above this lower limit again does the search process stop, and the new preferences and institutions gel.*

### Behavioural rule 2: The opportunism rule

*Actors think and act in such a way as to maximise the benefits accruing to them, while minimising costs. In order to realise their objectives, they try to use other actors' resources as much as possible for their own purposes, while minimising the use of their own resources by other actors for that latter's own purposes. If however this opportunistic line of action leads to excessive penalties, so that a friendlier line towards other actors proves more profitable, they will make agreements or contracts and stick to them. They hold themselves hostage, as it were, to avoid self-destruction due to excessively opportunistic behaviour.*

In empirical reality, these two rules are closely linked. The combination of limited rationality and opportunism is 'information impactedness', the collection and provision of information unilaterally aimed at maximising one's own benefits (Williamson 1975: 14). This bias may arise because insufficient information is available, and actors are often unable to check one another's assumptions and data unless information collection methods are harmonised or standardised. Despite this, actors are able to modify their preferences and change their objectives or resources in the light of new information. Striving for procedural rationality, one aims to bend off actors' inherent tendency to use information strategically into the common good. The negative aspects of 'information impactedness' are rendered harmless.

In the following sections four different types of institutional structures are developed which may be expected to influence and order the occurrence of 'information impactedness' differently, to lead to a different course of the decision-making process and ultimately to a different product quality.

## 4.2 Monocentrism and multicentrism

### *Market forms*

All players have resources, but they are seldom sufficient to permit these players to attain their goals by themselves. Actors are mutually dependent, because they need resources from other actors to attain their goals. Mutual dependency does not mean, however, that all actors in the system are equally strong. Some are considerably more equal than others: they have larger financial resources at their disposition, have legal competence allowing them to overrule the decisions of others or have an in-house think tank. Although the relationships between the actors in a network are often bi- or multi-lateral, the arrow pointing in one direction may be appreciably thicker than that pointing in the opposite direction. The results achieved by the institutional system will reflect these divisions of power. Dependency relationships can most adequately be conceptualised as the well-known micro-economic market forms. At the one extreme we have full competition, with an infinite number of parties demanding goods or services and an infinite number of parties offering to meet this demand. Neither the supply side nor the demand side has any influence on the amount of goods or services to be traded, or on the trading price: all actors have practically negligible power and the relationships between them are egalitarian. The price elasticity and amount traded are infinite, because if a given actor cannot reach a deal with a given other actor, there are still plenty of others he can try to reach a deal with. At the other extreme we have the market forms of monopoly (one supplier and many actors on the demand side) and monopsony (one actor on the demand side and many suppliers). The monopolist or monopsonist can determine the price and the amount traded within certain limits, since those who wish to buy from him (or sell to him) have no alternative trading channels. In full competition, monopoly and monopsony, the objectives and resources which are exchanged, are assumed to be homogeneous, though in reality they are heterogeneous. If we assume that the objectives and resources can exhibit qualitative differences, then complementarity and substitutability of goods come into play. Each player who does not wish to be dependent on another now has the option of getting the resources he needs from an alternative source - but they will not be exactly the same resources. Each actor has a certain power over his own niche as customer or supplier, but is dependent on the steps taken by competitors. The problem of 'oligopolistic indeterminateness' now raises its head: rational behaviour can no longer be deduced unambiguously from the context (Dosi 1984).

More than a century ago, Cournot identified a problem that was to become the permanent and ineradicable scandal of economic theory. He observed that where a market is supplied by only a few producers, the notion of profit-maximization is ill-defined. The choice that would be substantively rational for each actor depends on the choices made by other actors;

none can choose without making assumptions about how other actors will choose. Cournot proposed a particular solution for the problem, which amounted to an assumption about the procedure each actor would follow: each would observe the quantities being produced by his competitors, and would assume these quantities fixed (Simon 1982: 140).

System results can no longer be calculated with certainty, because each actor's utility function contains the utility functions of the other actors with who he has a relationship. This makes the course of the process under consideration uncertain. The way Cournot chose to calculate numerical results under these circumstances was to make certain assumptions which would permit values to be filled in for the utility functions despite the uncertainties involved. From an empirical viewpoint, however, it may be doubted whether the approach he chose was the best: after all, the assumptions actors make may involve mistakes. The agreements reached between the oligopolists (small number of influential suppliers) or oligopsonists (small number of influential customers) concerned determine the amounts traded, the prices at which trading takes place and the precise nature of the resources traded. And since the process of reaching agreement always depends on future actions to be taken by the actors, the results obtained are not predetermined.

An intermediate form occurring in practice between monopoly and oligopoly is market leadership (Shepherd 1985). One actor has much more power than others, and hence a predominating influence on the market, but cannot control market processes completely. He always has the option of taking the initiative in setting standards himself, but can only do this within certain limits and always has to deal with smaller, parasitic actors.

Alternative market forms reflecting reality more closely are bilateral monopoly and bilateral oligopoly. These are probably the forms found most commonly in reality - and also those whose functioning is least simple to model (Fellner 1949). In a bilateral monopoly there is one customer and one supplier who are entirely dependent on one another for the transaction in question, jointly exchange objectives and resources, and determine the conditions under which the exchange occurs. Bilateral oligopolies are the most complex: there are several influential suppliers and several influential customers who anticipate one another's behaviour as far as possible, and who therefore have to be masters of strategy if they are to realise their objectives. Actors can contact one another via many different channels, and search in this labyrinth for strategies which will allow them to gain as many benefits as possible while minimising expenditure.

#### **Box 6: American checks and balances and Dutch cartels**

The different market forms indicated above can be recognised in the way ownership rights are distributed between actors in the financing of infrastructure projects. In the federal United States, the finances required for infrastructure projects come from funds at various levels of government, often several sectors and private parties. The legal rights to the land, the availability

of professional expertise and the deployment of personnel also lead to a distribution of power of the kind one might expect in a bilateral oligopoly with competitive features. It is difficult or impossible to point out a dominant power centre, and all actors will only be able to realise their objectives within limits, after a certain amount of trial and error, while none of them will be able to determine the course of events completely.

In a unitary state like the Netherlands, the relationships between players are quite different. Most of the funds available for the financing of national and regional infrastructure are concentrated in the Ministry of Transport, Public Works and Water management. There are also ample reserves of expert knowledge and personnel resources at the national level. Lower levels of government also have some resources, in particular as regards legal competence to determine land use, but they are nevertheless forced into a limited, reactive role. Only players who allocate financial resources to others have the power to stage-manage the appraisal process; finances as a policy instrument in the realisation of infrastructure is not substitutable. The institutional structure in the Netherlands cannot, however, be characterised as a monopoly without further qualification; it is probably more accurate to characterise it as a form of market dominance. In the various decision-making processes described for the Netherlands (Huberts 1988, Teisman 1992, WRR 1994b), for example, many actors appear on stage but only few have a major say in the way things go: the Ministry (the dominant supplier of financial resources), the bigger municipalities and the bigger transport companies (Dutch Rail, ports and airports), the main users of the financial resources. The resources belonging to other actors are usually substitutable or can be bought off. The ministries of Transport, Public Works and Water Management and of Housing, Physical Planning and the Environment, the municipality of Amsterdam, the province of Noord-Holland and Schiphol NV were important partners for Schiphol's fifth runway, while the potential resistance from the municipality of Haarlemmermeer could be bought off with a financial contribution to a cultural festival. The situation here resembles that of a bilateral oligopoly with cartel-like features.

#### *The influence of market forms on the creation of variation*

The market form has a strong influence on the interpretative dynamics in decision-making processes.

Actors with a large share of the financial resources are in a position to determine the grounds or criteria on which project proposals emanating from other actors are accepted. This gives them so much influence in the selection environment that the variation created by other actors remains largely unused. When the relevant criteria in the selection environment are determined by a dominant market leader, alternative ideas from recessive actors fall on stony ground since they do not support the views of the dominant actor(s). Another long-term effect is produced in this connection: the recessive actors, pragmatic as they are, do not want to be completely excluded from the transactions so they modify their new proposals to bring them into line with the selection criteria so as to come into consideration for financing after all. If the selection environment 'arranged' by the market leader is



deaf to variation introduced by other players, these other, dependent, players cannot ignore the selection criteria. The dominant institutional complex of the market leader is faithfully copied by all others, thus practically excluding mutations. The volume of spontaneous new variations drops because the recessive actors adopt an anticipatory course of behaviour to avoid having their proposals continually turned down in the selection process. As a result, the heterogeneity in the objectives and resources exchanged remains very restricted.

The course of this process is very different in less monopoloid markets. As a result of the power-sharing, several actors have a say in the choice of the criteria which apply in the selection environment; hence, these criteria correspond more closely to the variation contributed by each of these actors (De Jong 1999a). When one or more of these actors wish to introduce changes in the selection criteria, the other actors cannot ignore this wish because of the interdependence between them; the selection environment thus becomes more dynamic. The input of new variation helps to create links between the objectives and resources of the various players, thus yielding benefits for each individual player since new chances arise of realising one's own goals with the aid of the others' resources. While other actors will appreciate the need to modify the selection environment on the basis of this innovation, they will not accept all new proposals without due consideration. When the new proposals hinder the achievement of their own objectives, counter-arguments and facts will be presented and debated until a new 'equilibrium' is produced. Ideas change much faster in this market form. The heterogeneity of the objectives and resources exchanged grows as a result of these fast mutations.

#### **Box 7: English central dominance and Californian client friendliness**

Telling examples of the effect of the market form on the course of the appraisal process may be found in England and the San Francisco Bay Area in the USA. The assessment model used by the English Department of Transport for the evaluation of project proposals from lower government levels is known as COBA (Cost-benefit Analysis). This is a package of criteria and calculation rules prepared by civil servants in the Department, which must be used by all actors submitting proposals for infrastructure projects to be financed if they wish to have any chance of getting a slice of the pie divided up in each annual budget. This model contains no criteria of any significance apart from costs, economic benefits and environmental benefits expressed in monetary terms. User benefits such as comfort may not be advanced as arguments by the local or regional government bodies making the proposals, since these are assumed to be taken into account in the market price; this is a real blow for the public transport sector. Extra justification may however be derived from evidence that the project will improve living conditions and yield better access to run-down inner city areas, or that at least 50% of the financing for the project has been promised by private sources of capital. These arguments are not presented so much as an integral part of the appraisal model, but should be seen as extra political issues noted in the margin of the model. Counties and districts follow this model docilely, though it must be said not

whole-heartedly. A case in point is that of Blackburn Borough in the North of England, which is sensible enough to present the ring road and bus connection it wishes to realise as a 'boost for the inner city'. Such dependence on the national Department justifies juggling with extremely 'fuzzy' data about contributions from private source of finance, possible sources of income and environmental benefits expressed in monetary terms.

The process takes a completely different course in the San Francisco Bay Area, where 17 different actors were invited by the Metropolitan Transportation Commission (MTC), a coordinating body for the appraisal of various infrastructure projects, to participate in brainstorming sessions concerning the criteria to be used for evaluation of their own projects. At a later stage, they all had a voice in the approval of the ultimate model, which included economic, ecological, physical planning and safety considerations. Where the federal Department of Transportation, the state Department of Transportation (Caltrans) and a large number of counties and districts contributed money to the MTC (which acted as distributor of the funds involved) for various aspects of the work to be done, they only had a say concerning the aspects to which they had made a contribution. At a later stage, further national funds for financing works of art intended to beautify the environment were also released for these infrastructure projects. It had been agreed that projects with a high aesthetic level should also be allowed to benefit from these funds. The MTC had some difficulty in persuading the actors involved to give this argument a place in the model too. Proposals for further modification of the appraisal model to make room for input of new ideas are made with great regularity. The MTC occupies an entirely different position in the appraisal process than the British DoT, since it is not the owner of the funds involved but receives them from the various actors taking part in the appraisal. Under these circumstances, it can hardly avoid adopting a 'customer-friendly' approach. The participants do not echo the ideas of the MTC blindly; rather, the latter coordinates the process whereby interdependent actors modify their own ideas. The price and amount of the objectives and resources traded vary, and the variety of the products delivered increases in proportion.

#### *Definition of monocentrism and multicentrism*

Monopoloid institutional structures lead to less mutation of ideas and more predictable processes. Objectives set are not often the subject of discussion. Institutional structures involving greater power-sharing (bilateral oligopolies without cartel formation) are characterised by a high level of mutation, as a result of which appraisal processes and actors' objectives acquire a large component of dynamic unpredictability.

*Structures where one or a few actors occupy a dominant position on the basis of the resources at their disposition, while other actors are perceived as having a dependent position, are called monocentric. These dominant actors manage to gain control over interactive processes, and exert a strong influence on the interpretation of key issues via the replication of their viewpoints by others, without dominating these processes completely. Interaction and interpretation follow a fairly predictable pattern. There is little built-in incentive for an intensive search for information.*

*Structures where no clear dominant interactive centre can be distinguished and where power is shared between various actors are called multicentric. No single party manages to gain control of the process of interaction without the explicit permission of the other actors. Processes of interaction and interpretation take a spontaneous, unpredictable course, the prices and amounts of objectives and resources traded fluctuate, and the interpretation of the problem under consideration evolves markedly as a result of the frequent mutation. There are considerable built-in incentives for an intensive search for information.*

Institutional structures are not immutable. Recessive actors can make alliances, cooperation agreements or even mergers in an attempt to increase their influence. When they realise that their large numbers and poor coordination mean that they have little bargaining power in negotiations with the dominant actors, they may decide to pool objectives and resources. Williamson (1975, 1985) distinguishes in this context between 'large numbers' (of independently operating actors) and 'small numbers' (of groups formed by cooperation or mergers). The creation of small numbers in this sense yields a closed front of previously powerless players, whose existence the dominant players can no longer ignore: the market form tends towards a bilateral oligopoly, with all the changes in interaction and interpretation processes which might be expected in this context.

#### **Box 8: From big numbers to small numbers in the English South East**

There seems to have been a shift towards 'small numbers' in the decision-making structures for the allocation of financial resources for infrastructure projects in England during the past few years. Until recently, all counties and districts in England competed for funds, so that the Department of Transport had a great deal of freedom in the selection of projects which it considered to be worthy of support. All parties submitting project proposals were at the mercy of the guidelines and whims of the civil servants in London, and the risk of failure in the hunt for funds was appreciable. But the situation has been gradually changing. Many local authorities, especially in the South of England, have started making intermodal package deals reflecting the wishes of all parties concerned (both the local authorities and the relevant branches of the transport industry) to a certain extent. Only after agreement had been reached at this level was the entire package jointly presented to the DoT. Discussion about what these actors consider to be realistic appraisal criteria has also started up. It is much more difficult to play the recessive actors off, one against the other, in this construction. Hence, these actors now tend to seize the initiative by coming up with innovative arguments. If this trend continues, the DoT will find its dominant position gradually eroded.

### 4.3 Cooperation and competition

#### *Degrees of freedom*

Institutional systems have a function. They also have a structure, determined by the lasting relationships binding one actor to another. An institutional designer has the task of designing a structure which matches the function. The systems theorist Rosen (1974) was one of the first researchers to concern himself with the idea of institutional design. In his 'On the design of stable and reliable institutions', he has the following to say about the relationship between structure and function:

It is the designer's task to take the kind of structural data which he receives from the sciences and use these to synthesize these new systems in such a way that they will manifest specific functional activities. Thus he may be able to infer things about functional activity from information which is initially presented to him in non-functional (i.e. structural) terms and this brings him face to face with some of the subtlest problems in systems theory: when is it possible to infer function from structure? (...) When is it possible to embody a desired function in a system constructed with a given set of structurally defined pieces? When and how can several desired functions stably co-exist in the same structure?

The function itself is always described as an input-output relationship: a rule which associates, with any particular system input, what the corresponding output shall be (Rosen 1974: 62).

Rosen's reasoning is based on the premise that the freedom of actors in any system is determined by the prevailing institutions. How these institutions affect the actors depends on the number of 'degrees of freedom' the designer allows the institutions. The fact that different degrees of freedom can be assigned to the different institutions allows the designer to modify the structure in such a way as to approach the ideal fulfilment of the function aimed. But within a given institutional structure, not all institutions are relevant to the function aimed at, or make a contribution to this function. Some of the institutions are really superfluous as they do not contribute in any way to the function aimed at, but do influence the functioning of the system. The designer now has the choice between two extreme options:

1. *Specific and short-lived institutions.* He can describe the system function very specifically, and tailor a small number of institutions to match this function exactly. These specific functions will then have very few degrees of freedom. The others, which are not immediately crucial for the function aimed at, are not taken specifically into account; they will thus have a very large degree of freedom. Such a system will fulfil the function currently aimed at very efficiently for a short time, but the spectrum of functions for which the system has been tailored is very narrow. New functions will soon become relevant as external circumstances change, and the institutions whose degrees of freedom

have been left intact will interfere with the function of the system as a whole. Thus, the system no longer meets requirements and will have to be redesigned for execution of the new functions. Such a specific system design does not remain effective for long periods of time. After a short period of close compliance with functional requirements, it will have to be redesigned.

2. *General and durable institutions.* He can describe the system function in much wider terms, making a larger number of institutions reasonably suitable for its fulfilment. He limits the bandwidth of their degrees of freedom less rigidly and describes them in more general terms. The loss of specificity per institution is compensated by the range of institutions over which he attempts to gain control. The number of degrees of freedom of a larger group of institutions is thus less strictly limited. Each individual system function is then fulfilled much less efficiently, but the range of functions that can be handled is much wider. The time that elapses before the uncontrolled institutions, under the influence of the environment, interfere with the operation of the controlled institutions is much longer. Since the institutions are given somewhat more degrees of freedom, they are also made somewhat more durable: they can handle a larger number of functions, albeit somewhat less effectively, than in the first case. The structure is robust, or stable, and will be able to function for a longer period before redesign becomes necessary.

Thus we have as a corollary that the same structure is in general capable of many different functions. Thus if we try to design a structure to carry out a particular function, we will invariably find that many other kinds of functions (i.e. system interactions) are built into the system, and incipient in it. This is the ultimate source of the dialectic character of systems; it is a necessary consequence of the fact that systems can interact with each other only through their structural degrees of freedom and the fact that a system will typically have many degrees of freedom not involved in the manifestation of a given function (Rosen 1974: 63).

In other words, the degrees of freedom of institutions can be set within very close limits; this will make them highly specific, but short-lived. If on the other hand they are set within wider limits they will be robust and durable.

#### **Box 9: German planners and Californian pushers**

The presence of decision-making or evaluation models for infrastructure investment purposes, and the precise form given to such models, reveals a lot about the institutional context within which they operate.

In Germany, a generally accepted *Standardisierte Bewertung* (Standardised Evaluation) has been developed for the purposes of integral traffic planning. This has been harmonised for the transport modes road, rail and water, and is used for all federal projects. The range of aspects taken into consideration is wide. Apart from costs and direct employment benefits, the model

also contains such criteria as all kinds of environmental loads, town planning and rural architecture values, the contribution made to completion of the traffic network and political priorities. Since its wide applicability necessarily means that it cannot be accurately focused on each individual project, it is sturdy and wide-ranging, but not very specific. It has won a stable position for itself, precisely thanks to this general applicability. Some German *Länder* (states) such as Northrhine Westphalia have also adopted this evaluation method as decision-making model for their own regional projects. Because representatives of the various branches of the transport industry and of the various levels of government are involved in the evaluation, the resulting *Bedarfspläne* (five-year programmes) which provide an overview of all planned projects and their costs receive relatively wide support. It is hoped that decision-making outside the standard evaluation model can be avoided, and that the model can be applied under the standard conditions for each new set of projects to be selected. Such an approach to infrastructure appraisal is only feasible when a high level of trust has grown up between the various actors, and when opportunistic use of evaluation methods outside the standard procedure is rapidly and effectively punished. This is possible in the cooperative institutional system characterising Germany, where delivery of agreed specific information is rewarded, and failure to honour agreement is not. Informal contacts outside the standard framework are not greatly appreciated. The situation in the American state of California is almost diametrically opposed to this. Here, cost-benefit analysis is used not as the standard procedure but as a voluntarily chosen instrument to defend or attack proposed projects. Projects of different modes are not weighed up against one another, nor are even different projects of the same type considered alongside one another as alternatives. Each bureau and (government) body organises its own analyses, with different criteria and weightings, and arrives at different results concerning the profitability of each project. Such an evaluation is moreover always organised on an ad hoc basis: each actor makes up his own mind when is the best moment to present his own project, or to deliver counter-expertise against a traffic link he disagrees with. No standard procedure exists for the priority setting and planning in individual projects. The *laissez-faire* process of information exchange and decision-making about the infrastructure may be characterised as competitive. All actors with relevant property rights can exercise these rights wherever they want to. Since the set of actors, and the form in which their information has to be packaged, are not clearly defined, no trust can grow up between the various parties. Information supply is aimed at short-term success.

### *The influence of degrees of freedom on the storage of variation*

The degrees of freedom have a strong influence on the *interactive* stasis of decision-making processes. Players operating in an institutional structure where many weak institutions offer little certainty and only a few specific short-term arrangements, provide a relatively firm foundation for agreements have much more scope for opportunistic behaviour. They only use the information available to them to gain benefits on issues concerning them, and they only frequent market-places where such benefits are attainable. And even these market-places will cease to exist when the players concerned consider that there is no longer anything of interest for them

to 'buy' there. These actors hardly ever meet their fellow actors outside these market-places. Information which is only relevant for use there is no longer used, and no longer disseminated, since the actors concerned would consider it irrational to make expenses at points and moments in time when no benefits are to be expected. When all actors take this selective attitude to the dissemination of information and no steps are taken to regulate or harmonise the flow of information, no limits are placed on the *information impactness* of the actors. Under these conditions, the size of the set of actors with property rights is emphatically unlimited. Actors are free to participate in the decision-making process at any moment they want, armed with whatever information they choose. Since no procedures aimed at encouraging cooperation are in place, competitive behaviour is the norm. While a wide variety of arguments may be presented during the appraisal process, there is no selection environment to sort these arguments in a structured way. The link between problems and solutions is laid without any overview of the context, and interpretative institutions will at most play an instrumental role in supporting interaction. This ad hoc approach to infrastructure, where projects are dealt with on an individual basis without any attempt to weigh up alternatives or set up coordinated programmes, does not favour the formation of an 'institutional memory'. The evaluation methods used will also vary from case to case, in line with this ad hoc approach. Institutional systems in which only the degrees of freedom of a few specific institutions are minimised, the values of the other institutions being left undetermined, are said to be *competitive*.

In *cooperative* institutional structures, on the other hand, the decision-making process is subject to more overall control. The larger number of institutions whose degrees of freedom have been reduced offers actors a kind of springboard to discussion or decision opportunities, and the link between problems and solutions is made more transparent. This structuring has a crucial side-effect: contacts between actors are made more durable. Thanks to the level of trust that grows up between them and the social sanctions on opportunism, they gradually adopt a freer attitude to exchange of information so that in the long run interpretations will start to be harmonised: the variety of information created is stored institutionally, which makes it easier to sort ideas according to their utility.

Conceptual harmonisation is a relatively effective way of limiting the extent to which actors 'blind one another with science' during the evaluation process, since actors can now get a clear insight into one another's calculation methods, and can check the other's calculations if so desired. The standardisation, acceptance and wide applicability of the evaluation methods will also increase their useful life, since they can now be used repeatedly without the need for continual redesign or modification to deal with new cases. Since the range of problems the institutional system can deal with is wider, the system becomes 'repeatable' (Sage *et al.* 1983).

The institutional complex is a *memory*, from which facts can continually be called up at will.

Cooperation does not only have advantages, however. Players not belonging to the recognised 'in-crowd' will tend to be excluded to a certain extent. Since the representatives of the various interest groups are the authorised spokesmen for these groups, messages from parties which are not recognised will be inaudible in the official channels. The crystallisation and standardisation of procedures for information exchange and decision-making in stable institutions can stifle innovation in the long run. The cooperation between a limited group of oligopolists can sometimes leave an unchallenged, dominant mark on the processes of appraisal, and can be deaf to messages from outside the happy few signalling radical changes in the environment. Stability can degenerate into rigidity.

#### *Definition of cooperation and competition*

Cooperative institutional structures lead to stronger storage of ideas because actors are stimulated to trust institutions and to share information. Institutional structures with a higher degree of competition are characterised by much less storage, because actors' tendency to opportunistic behaviour is given a freer rein.

*Cooperative structures are characterised by institutions which determine that the most important actors can contribute to the further development of the (interactive and interpretative) institutions and the appraisal processes which take place within them. These institutions are so generalised that various functions can be fulfilled with their aid; they are thus robust and repeatable. To keep them stable, they also have a high tendency to exclude actors from outside the system. The rigidity produced as a result of this means that such structures do not last forever: sooner or later, major restructuring will have to take place. While they exist, however, there is room for the development of mutual trust between the participating actors. Interaction is regulated, and opportunistic behaviour punished.*

*Competitive structures are characterised by institutions which determine that all actors may contribute to the further development of the (interactive and interpretative) institutions and the appraisal processes which take place within them. The paradoxical situation then arises that, since actors cannot thrive in the complete absence of institutions, ephemeral institutions are created to fill any gaps that may occur. These institutions are often so specific that they can only be used for one function at a time. They are thus non-repeatable, and cannot be developed to a closed system or achieve legitimacy because of the pressure exerted by the mass of external actors. Hence, institutions in competitive systems only have a short life. In addition, they are continually made ineffective by actors who do not accept established procedures, enter the appraisal process when they feel like it and demolish institutions before they have had a chance to form a permanent structure. The actors*



never manage to develop relationships of mutual trust. Interaction is weakly regulated, and opportunism yields benefits.

**Box 10: The types we are going to meet**

Various types of cooperative and competitive systems can be distinguished if the degree of formality of the institutions concerned is taken into account. It will be shown below that Germany and Switzerland tend to prefer cooperative systems where formal institutions ensure the necessary robustness, while the French system contains sufficiently informal institutions to ensure that order prevails above chaos in most cases. America and England tend to have competitive systems with both formal and informal features, while the Netherlands combines informal competitive practice with a formal cooperative structure. For further details, see the following chapters.

**4.4 Four types of institutional systems**

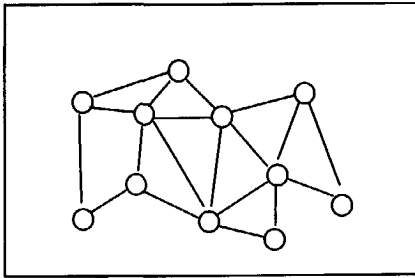
The insights developed above may be summarised as follows:

1. The creation of a variation of arguments and facts in an institutional system is determined by the number and pluriformity of the actors in that system. Multicentrism leads to faster mutation, thus delivering a greater degree of variety in terms of concepts and data than monocentrism, where replication of information is more common. This dimension reflects the *innovative power*.
2. The second dimension concerns the way in which the variation generated is stored, which is determined by the order imposed on the stored information. It is a memory containing institutions which the actors developed in the past and which provide a framework that will help to make future choices. Cooperation leads to stronger storage of information than competition; in the latter case, ideas and data are rarely exchanged because such activities are not perceived as giving the actors an appreciable competitive edge. This dimension may thus be designated the *storage power* dimension.

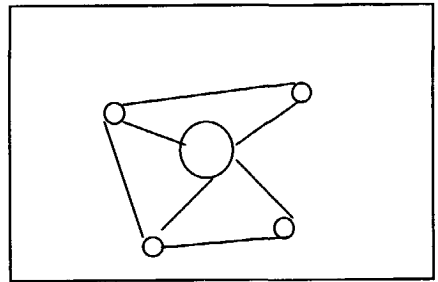
The above lines of reasoning may be combined to give the following matrix:

*Table 4.1 Four types of institutional structures*

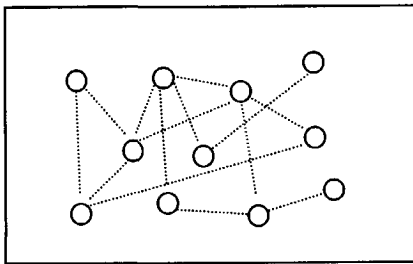
Evolutionary mechanisms	High innovative power (multicentrism)	Low innovative power (monocentrism)
High storage power (cooperation)	Type 1. Stable selection environment with much variation	Type 2. Stable selection environment with little variation
Low storage power (competition)	Type 3. Dynamic selection environment with much variation	Type 4. Dynamic selection environment with little variation



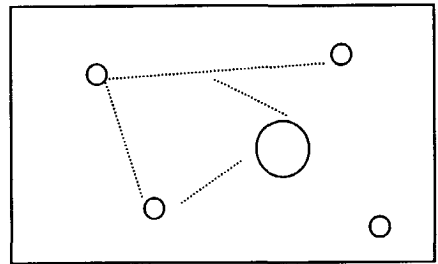
Type 1



Type 2



Type 3



Type 4

*Symbols:*

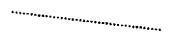
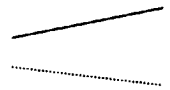
Dominant actor:

'Weak', recessive actor:



Durable relationship:

Ad hoc relationship:



*Type 1.*

The institutional system has a wide range of interdependent actors, who maintain durable relationships. Type 1 is the ideal for the designer, but at the same time the greatest challenge because it demands a combination of multicentrism and cooperation; both the generation and storage of variety must be strong (see the retention mechanism in chapter 3). Process quality measure M reflects product quality Q as closely as possible.

*Type 2.*

The institutional system comprises relatively few actors, who do however maintain lasting relationships among themselves. As a market form, this structure resembles an oligopoly with strong cartel formation. Cooperation is good, but the level of innovation is low.

*Type 3.*

The institutional system comprises a very wide range of actors, who maintain only volatile relationships between themselves. As a market form this structure resembles an oligopoly with a relatively large number of players on the supply and demand sides, who do not succeed in reaching agreement. There is a lot of individual innovation, but this innovation is only standardised after the event or not at all.

*Type 4.*

The institutional system has a relatively small numbers of different actors, who moreover maintain few relationships between themselves. Type 4 is the designer's nightmare, because it combines the worst of both worlds. *M* reflects the will of the market leader.

In 'A theory of justice', Rawls (1971) designs a political order in which economic growth is not retarded, and where all citizens can pluck the fruits of this growth. Such an order follows the 'maximin' principle, according to which the poorest members of society should be given as much of the resources available as possible. To arrive at this order, Rawls introduces the 'veil of ignorance': which order do players choose if they do not know what role they are going to play in the order when they make their choice? The players in the following example are manoeuvred into a comparable position:

**Box 11: Brainstorming to develop an intermodal framework**

Metropolitan Planning Organizations (MPOs) in the United States have the task of organising decision-making about infrastructural resources in such a way that the unimodal transport networks originally set up switch to a more multimodal mode of operation. The role of transfer points between the various modes requires reinforcement. But before the physical system can be modified in this way, the institutional system needs to be overhauled. Actors with interests in the unimodal sectors need to work together more, and this requires guidance from a regional coordinator. Armed with the insight that intermodality requires an institutional structure which is both pluriform and cohesive, the Metropolitan Transport Commission (MTC) invited all relevant actors to contribute to the design of a decision-making framework. In the first instance, MTC asked all parties concerned to take part in a brainstorming session, with the objective of producing a list of all possible assessment criteria which could be relevant for project evaluation,

selecting the most important criteria from this list, developing calculation methods on this basis and determining weightings. After completion of this time-consuming process (which was, however, judged to be highly satisfying by participants in a post-session evaluation round), agreement was reached concerning the formal interpretative institutions to be used, the intermodal decision model. Finally, matching interactive institutions were chosen. This whole process thus led to the birth of a new integral institutional system which was supported by all concerned and avoided a 'first come, first served' approach due to the absence of accepted evaluation criteria.

Which institutional system do actors choose for the long term when they renounce their own immediate interests (the concrete projects they wish to submit for financing)? The 'veil of ignorance' has been criticised as being an unrealistic abstraction, but the above example shows that the opposite is true. Unrelated individual values can be converted into group decisions produced through a voting procedure which the actors themselves jointly perceive as the best possible one. The recessive institutional complex gains a place within the dominant one.

Coming to the end of chapter 4, we are equipped with a typology of institutional structures, an understanding of actor behaviour and an understanding what guarantors contribute to procedural rationality. The next step is to place all six countries within the typology, so that one can determine from which countries institutional transplants should be taken. It is to the international comparison that we now turn.

## 5. Priority-setting for transport infrastructure in six countries

*An empirical analysis of the procedures and practices of transport infrastructure prioritisation in six western countries is performed. This creates both a characteristic picture of each country, an impression of their institutional similarities and differences and a fan of suggestions to help us come closer to the ideal of procedural rationality. The six countries are Switzerland ('prudence by a trek along the bodies'), Germany ('advantage by thoroughness'), the Netherlands ('patience is a virtue'), England ('no pay, no cure'), the USA ('a joint adventure') and France ('long live complicity!').*

### 5.1. Methodological background

#### *Priority-setting in a comparative international perspective*

Chapter 1 concentrated on the appraisal practice for infrastructure projects in the Netherlands. Politicians in the Second Chamber as well as policy analysts in and around the Ministry of Transport seem to lack a view of what happens in the grey area between general policy visions on the one hand and the politics of budgeting in the four-yearly investment programme Infrastructure and Transport (MIT) on the other. On the other hand, studies show that many appraisal methods in other countries are barely applied either when it comes to 'real' decision-making (Faber 1994). But the existing material does not provide a proper comparative analysis of actual decision-making processes. Chapter 5 aims to give this.

It describes the main lines of decision-making concerning transport infrastructure in six Western countries by comparing the formal decision-making structures with the informal practices. The mechanisms behind the actual use of information are described. After a preparatory study of the literature, each country was visited and interviews were conducted with key figures from governmental, advisory and scientific organisations. The list of respondents is found in appendix 2. Each country was examined according to the same list of questions (see Appendix 1). In so doing, the following institutional relationships were kept in mind:

- 1) *Intergovernmental relationships*: the relationships that exist between international, national, regional and local policy arenas.
- 2) *Interdepartmental relationships*: the manner in which the involvement of various adjacent policy areas is organised (urban planning, environmental policy, economic affairs, finances).
- 3) *Intersectoral relationships*: the manner in which connections are made between the various transport modes (roads, railways, regional and local public transport, seaways, airports and sea and internal ports).
- 4) *Social relationships*: the extent to which the process is open or closed to the comments and ideas of citizens and pressure groups.

A description along the lines of these relationships will allow the placement of the countries in the typology of institutional structures in chapters 6 through 8.

### *Selection of countries*

The known methodologists for comparative country research are rather strict in the selection of countries in case-guided research. Przeworski & Teune (1970) and Ragin (1987) are of the opinion that comparative research may only compare cases if they vary in only one facet (so as to systematically obtain an image of the causes or effects of this difference) or if they are similar in only one way (so as to be able to establish unequivocally the causes or effects of this similarity). These rules govern the selection of cases in competent research. Yin (1989) only approves of case study if the preliminary theory is carefully formulated. Thus, no statistical but only 'analytically generalisable' statements are to be made. This requires what is known as a 'critical case' in which a precise determination can be made of the relationships in the theoretical proposition. Falsifying a proposition means falsifying the produced theory. The requirements of both methodologies are based, in my opinion, on traditional suppositions in the philosophy of science. Ragin in his requirements for case selection refers to the ideas of J.S. Mill from the last century. All Yin does is produce the old Popper formula for falsifying theories, and declares them valid for research objects in which the environment or context is essential to the understanding of the objects. However respectable these methodologists may be, time has not stood still in the philosophy of science since these ideas were first formulated.

If case study is greatly context-related, as both authors admit, there is not a situation in which two cases are completely similar except for one factor. Nor does there exist a common analytically generalisable statement for other context-dependent cases. No two countries are similar except for one variable; we have to base the selection of countries on other grounds.

The following factors have been of great importance in the selection of countries: the availability of empirical material, the practical feasibility of document analysis and interviews, and the expected usefulness and applicability of institutional transplants in the Netherlands. Furthermore, more down-to-earth arguments such as mastering of the language and restrictions attached to research funding have been decisive.

The selected cases are Switzerland, Germany, the Netherlands, the UK, the United States and France. All countries about which there was already information available from an earlier comparative decision-making study (Kolpron 1994) were selected for this study with the exception of Belgium. Belgium is undergoing such great changes in its institutions at the moment that it is almost impossible to make clear statements that are valid for the long term.<sup>10</sup> Added to the 'Kolpron Group' is

the United States, since it is expected that it will score differently on a number of fronts and thus its inclusion may offer important extra insight.<sup>11</sup>

The six countries are compared for the manner in which the institutional system influences considerations concerning transport infrastructure decision-making and how information is used in this. Two promising authorities, the German state of Northrhine Westphalia and the US state of California with its Metropolitan Transport Commission (MTC), receive extra attention in the respective country reports on Germany and the USA as they provide interesting suggestions for institutional transplants. Northrhine Westphalia is a German state with a favourable reputation in the area of innovation in public transport. One of the reasons for this is the recent introduction of *Verkehrsverbände* (regional transport authorities). The MTC in the Bay Area owes its reputation to its establishment of criteria analyses according to a participatory method, in which all those involved provide input.

## 5.2 Setting priorities in Switzerland: *Vorsicht durch Instanzenzug* (*'prudence by a trek along the bodies'*)

### *Deliberation procedures*

In Switzerland, the desire to achieve comprehensive transport planning dates from 1978 with the publication of the *Gesamtverkehrskonzept* (Comprehensive Transport Concept). This federal report included an analysis of the competitive relationships between various modes and a policy vision for the whole traffic system. The government of the time, just like all others in Switzerland, placed a great deal of emphasis on environmental matters. The 'polluter pays principle' was applied to transport matters. The objective at that time, re-routing of financial sources by means of a sort of integral infrastructure fund, did not come into existence however; this interpretation of the *Gesamtverkehrskonzept* and its financial consequences was thrown out by referendum in 1982. Now that an infrastructure fund is lacking, the various income sources and expenditures for transport sectors are kept carefully distinct; taxes on automobile traffic are earmarked for specific purposes, all investment expenditures for the railway must come from general funds. It does not appear that this situation in Switzerland will change in the short term; cantons that are not centrally located fear that an integral infrastructure fund will give preference to the railway, and it is primarily the large cities that profit from this.

Despite the explicit slap on the wrist from the voters at the time, the authorised bodies held firm to the correction of the competitive relationships between individual and public transport, however without any change in financial legislation. Since that time, it is more a supply approach to public transport that has been followed, in which a clearly and generously defined minimum transport supply is intended to encourage the traveller to make use of it. Every supply creates its own

demand, according to Say's Law. A much more recent investment programme in passenger transport, *Bahn 2000*, and the tunnel under the Alps for freight transport, known as *Alptransit* or NEAT, are expressions of this. At the same time, no new motorways may appear on the political agenda; only the road investment plan from 1959 will be completed.

Bahn 2000 is a good example of the official establishment of a minimum transport supply. An attempt is made to achieve maximum network effects by approaching the transport system as a whole. It is made up of a number of transport junctions which connect to one another in networks. The train connections between these junctions should be optimised. Trains must leave all of the large stations in all of the main directions every hour at a fixed departure time (*Knotensystem mit Stundentakt*). In this way, almost no time would be lost in making transfers. Each major junction must have this facility and be enlarged so as to provide connections in all directions. Regional connection groups are placed in all of the junction stations; this brings the network deep into the regions so that even sparsely populated areas are served.<sup>12</sup> Not 'as quickly as possible' but 'just in time' is the motto of Bahn 2000. Transfers must not involve waiting; this would reduce the door-to-door time. Infrastructure is only constructed for points where this objective cannot be met by the current network. More or less the same line is followed for the NEAT projects and the plans of regional transport providers.

Whereas Switzerland has an approach to transport infrastructure that is dominant at the beginning of projects and which leads to elegant concepts, other policy analysis contributions are more after-the-fact. No use is made of global, integral evaluation methods, because reliable data for this cannot be generated. Needless to say, a large number of policy reports is produced, but these come into being at a later point in the decision-making process and take the form of comments from various parties asked for their input.

After bold investment plans are introduced into the public debate, they are subjected to a referendum. Voters express their opinion not only about individual projects but about the total transport concept and investment programme, including the estimated costs. If the vote is negative, the package disappears from the agenda; if it is positive, an extensive consultation period with lower government agencies is begun. The responsible bodies at all governmental levels are bound to the results of the referendum. This means that after a federal referendum, the principal question of whether infrastructure is desirable at this point may no longer be asked at the cantonal or local level.<sup>13</sup>

The desire to achieve an integral transport plan is not found in legislation concerning construction. In addition to the fact that the financing of federal projects, which are funded 100% by the federal treasury, is arranged per mode, the



consultation procedures for roads and railways also vary. The procedure for construction of federal roads has three components, namely:

1. *Planung* (Planning). In this preliminary phase, the Federal Road Construction Agency (ASB), a subdivision of the Swiss Transport and Energy Department (EVED), identifies the areas that may be considered for a national road and establishes the need for it. The study results in a preliminary report which covers the proposed projects. The federal government leads the phase, although an active contribution is expected from the cantons. Next, the Agency for the Environment, Woodlands and Countryside (BUWAL) approves this plan from an ecological perspective. The Federal Executive Council and the Federal Assembly take note of this preliminary report as well as the reactions to it, whereupon they make a decision.
2. *Generelle Projektierung* (General Project Phase). In this phase, projects in the general plan are turned into concrete routes. The Federal Road Construction Agency carries out this phase on the basis of complete equality with the cantons; it may even be completely delegated to the cantons. In urban areas, the cantons are even allowed to turn over the authority to local government, although cooperation between the canton and local government is preferred. Generally, the Federal Road Construction Agency makes proposals to interested cantons who in turn consult interested local governments and landowners. Cantons are required to submit reports on environmental effects to the Agency for the Environment, Woodlands and Countryside as well as studies on the effects for regional development and archaeology. At the end of this phase, project zones may be reserved for purposes of construction.
3. *Ausführungsprojekt* (Implementation Phase). The implementation phase is entrusted completely to the cantons which work together with local governments. The various interests are now looked after only by cantonal agencies so that the third *Umweltverträglichkeitsprüfung* (Environmental Impact Assessment) is conducted by cantonal environmental departments. Finally, there are the public consultation and expropriation procedures. The cantons make the modifications known to all interested parties and are formally required to impose implementation of the projects on local government.

Although the procedure as described above for roads has been in effect since 1960, the approach to railway projects was only regulated in 1982 and modified in 1991. Until then there was no formal consultation procedure with the cantons, often leaving them frustrated and protesting.

Since that time, the decision-making process concerning railways has been divided into two components:

- A. *Verwaltungsinternes Vortriffsungsverfahren* (Preliminary Intergovernmental Study Process). This is a procedure that organises the roles of all the various governments. Federal agencies, interested cantons and local governments comment on an individual basis on various projects in the general programme which has been approved by referendum. The (collective) Transport Department (BAV), another subdivision of the Traffic and Energy Department (EVED), leads this process of information exchange and negotiation. The results of this procedure are set forth in a report.
- B. *Genehmigungsverfahren* (Authorisation Process). This is the actual planning procedure in which individuals have the right to let their voice be heard. The central office of the Transport and Energy Department is in charge of this and is responsible for making public all relevant information concerning land use, environment and nature protection, safety and national defence. According to federal legislation, infrastructure decisions do not have to have any formal place in physical planning of cantons or local governments. There is no national urban planning and it is assumed that the cantons and local governments will take into consideration the physical planning consequences themselves and fit them in, if necessary. In addition, the public consultation and expropriation procedure run parallel to this so as to gain time if possible.

There is an *ad hoc* Act for the Alptransit or NEAT, because legislators expected tremendous social resistance to it. Consequently, this resolution makes use of an even more careful procedure which combines the procedures for roads and railways and in which the Transport Department functions on behalf of the federal government. The main structure of 1, 2 and 3 is adopted from the national roads; 2 is then divided into A and B of the railways. The federal government retains the right to omit phase 2A (Zimmerli 1993). This latter procedure makes extremely clear how important the public consultation of multiple parties is considered to be; however, the amendment to it reflects the concern about how much time this takes.

Cantonal governments have their own planning procedures for the construction of their roads and railways. The fact that they own their own railway lines and railway companies, the *Privatbahnen*, demonstrates that federalism in Switzerland goes a step further than in Germany. The cantons have also been able to avoid the creation of functional agencies devoted to traffic planning like the *Verkehrsverbände* (regional transport authorities). Only in Zurich has such an organisation come into being, the *Zürcher Verkehrsverbund* (ZVV). The legal independence of the cantons in planning their own infrastructure networks is not as strong, however, as it officially appears. First of all, the federal government is a shareholder in the *Privatbahnen* along with the cantons and some local governments. They do not have any private capital, in other words, but only a private legal form. Secondly, there is the general principle

that cantons bear 50% of the investment costs of projects and the federal government also 50%. This division, however, is only a general principle and can be deviated from.

*Actual deliberation practice*

Expectations in Switzerland concerning a high-quality, integrated and environmentally friendly transport system are very high. Both of the investment programmes, Bahn 2000 and NEAT, have been approved by referendum despite the high costs they involve. However, even though approval of these was given a long time ago, progress on them is extremely troublesome (Berroggi 1999). Since the federal government had anticipated possible criticism from less densely-populated cantons, the concept of Bahn 2000 was based on the principle of more or less equal service to all parts of the country. Given the strong position of those cantons, that was not a bad decision. Since the concept was supposed to have an integrating character, it had to meet a great number of demands at the same time. In addition to covering all of the country, it was also intended to strengthen intercity and international transport; therefore, bus transport was tied to it and a connection was to be made to the two international airports of Zurich and Geneva. It was also expected that construction of new and modification of existing railways could cover future needs for freight transit, since the Swiss people had voted in a national initiative to close the through-way motorways to international lorries. The expansion of the Lötschberg-Simplon axis to a capacity of 12-15 million net tons had also been ultimately included in the concept of Bahn 2000. In 1987, the costs for Bahn 2000 were estimated as follows:

Table 5.1 The costs of Bahn 2000

1) Improvements of existing lines:	SF 2.7 billion from the <i>Bund</i> .
2) Construction of new lines:	SF 2.3 - 2.4 billion from the <i>Bund</i> .
3) New material:	SF 1.0 - 1.5 billion from SBB (Swiss Rail) (because of its high debts ultimately <i>Bund</i> money too)
4) Private railways:	SF 1.0 billion or more from lower governments
Total estimated credit for federal government:	SF 6 bln
Total costs for the cantons:	SF 1 billion or more

This was the financial picture that Swiss voters had approved.

During the Preliminary Intergovernmental Study Process (phase A), when negotiations were carried out with interested parties, there were many objections to details and modifications of the plans, which was nothing unusual. In the spirit of compromise and out of enthusiasm to realise the concept, these objections were met by continuing to refine the transport maze through good connections with the

bus network in sparsely populated mountain cantons. The name slowly changed into Bahn + *Bus 2000*. Expectations increased and the opinion formed that all types of projects from lower governments and transport companies fitted in very well with the concept. However, there was the problem that the various claims would also cost money. An exorbitant over-extension of the estimated credit was impossible without a new referendum or serious outcry from the people. The agencies involved were not interested in either of these possibilities. On an abstract level, it was very simple to say what Bahn 2000 was; that was clear in formal lines. But whenever the actual bottlenecks were considered and there was an attempt to determine whether investments should be made part of and funded because of the junction concept, the matter was less simple. Swiss Rail continued to consider proposals until at a given moment the estimates had run up to SF 16 billion and the whistle was blown by the Transport and Energy Department. In 1994, the Federal Executive Council published the 'Report on the first phase of Bahn 2000'. It demonstrated a radical change in course. The motto was now to make maximum use of existing railway capacity by using trains with greater capacity, by only constructing where necessary, by cutting back on all other projects and waiting to see what the future would bring. Nonetheless, the concept of Bahn 2000 remained in place. The consequences of these problems, however, were not only negative. In the beginning, four new federal railway connections were proposed to realise the concept of the federal network. Since then technological developments have advanced; there are now tilting trains known as *pendolini* which are produced by various manufacturers. These *pendolini* tilt sideways and can therefore take curves at the magical speeds of 200 km/h. They made three of the four new connections superfluous. Only the Bern-Zurich connection has more serious problems. Thus, the new section of this route (Bern-Olten) will still be constructed. This remaining route has also met an impasse because the Transport Department and Swiss Rail want to continue within the context of the current budget, but the Agency for the Environment, Woodlands and Countryside and the canton of Bern want a different underground route that will cost SF 700 million more at least. In their opinion, the Environmental Impact Assessment has not been carried out properly. If the conflict continues, the Federal Court, which also mediates directly between governments, may possibly have to break through the stalemate.

The parallels in the decision-making process for the Alptransit are striking. The NEAT, approved in 1992, is made up in fact of four components. There is a Gotthard tunnel stretch that will be built by Swiss Rail. Another company, the *Privatbahn* Bern-Solothurn (BLS), is building a second stretch (Lötschberg-Simplon) on the other side of the country. Thirdly, there is a partial programme for western Switzerland which includes the improvement of the Simplon stretch and the high speed line from Geneva to Macon in France. Finally, there is a partial programme

for eastern Switzerland which includes a number of improvements of existing railways and the construction of new ones. This balanced package of two basic tunnels and various additions is typically Swiss. Given the fact that benefits and costs must be spread among the cantons, it was essential that the outlying cantons of Valais and Ticino, which ran the risk of being excluded, also obtain better connections to the rest of Switzerland. The only two possible political solutions were either this NEAT arrangement or nothing whatsoever.

The actual NEAT scheme, consisting mainly of the new Gotthard tunnel (57 km), the new Lötschberg tunnel (30 km) and eastern Swiss access routes is the outcome of a compromise between the German and Italian speaking (insisting on Gotthard), French speaking (insisting on Lötschberg) and eastern parts of Switzerland (new access routes) rather than top-down national infrastructure planning (ECIS 1996: 213).

The conclusion has been reached recently that construction of the future Alptransit can best be combined with the construction of two new motorways (after all) which will be placed in the same spot. Optimisation of the network demands a combination of passenger and freight transport. Thus, NEAT has been reconnected to Bahn 2000 because Bahn 2000 constructions include roads that provide connections to the Alptransit (Bern-Olten). These feeder connections will not be finished before 2005 at the earliest, which means NEAT is handicapped in its planning until that time. To be able to provide sufficient capacity to the north, it may even be necessary to provide a connection to the northern Swiss Jura because not all freight will be able to pass by way of Basel in the future and will have to be spread out. 15 billion was the federal government's original estimate for NEAT; that was the amount approved by the referendum at the time. However, a few years later it is believed that the costs are relatively clearly sketched at 32 billion, aside from a number of geological uncertainty margins that still must be cleared up. The Transport and Energy Department has now proposed what they call an *Etappienang* (step plan) the period that the project will run is being extended considerably to make the yearly costs bearable. NEAT cannot be obstructed, as an endorsed voter initiative stipulates that transit traffic must be banned from the roads (see preceding pages). Where the new financing will come from is not yet completely clear. Will there be a new federal act with a referendum coupled to it for new financing? If changes are made to the financing or the route, there will be a referendum. Another possibility is that signatures might be collected to force a voter initiative. After the financing complications, the real bureaucratic problems begin; the cantons located above the point where the tunnel begins also want a tunnel. Money oils the wheels, but where must it come from?

Implementation of the national roads system started already at the end of the 50s. Three hundred kilometres of the roads planned at that time are still in the pipeline, and according to the most recent road programme of 1995, completion of the last stretch is not expected before 2012. The federal government is pleased for the most part with the basic level of the federal road network and wishes now to concentrate further efforts on other modes, but some of the remaining routes include construction activities in nature areas as well. The motorways do not pose too many problems for the relationship between the federal and cantonal governments because they had interwoven plans which they made jointly from the very beginning. The financing of federal roads is done by the federal government, construction and maintenance by the cantons who are in charge of construction. Planning is done together. Since the manner in which planning is carried out is not stipulated, it is sometimes the federal government and sometimes the canton that makes proposals. The rule that the federal government may not carry out either its own projects nor those of a canton is very strictly followed. This reinforces the already strong feeling of mutual dependency between the federal and cantonal governments. The formal procedures in this area are carried out satisfactorily. However, local governments only become involved at a later stage, a situation which frequently leads to tension between the cantons and local governments in the implementation phase. The low speed of implementation results precisely from the fact that local governments respond to public resistance, systematically refuse to bend to cantonal pressure and apparently succeed in forcing cantonal governments to go from one locality to another to grind away the negative external effects of the motorways (Gresch & Smith 1973).

The need to invest in infrastructure for public transport appears to be much greater at the moment than the financial means; this is particularly true for the railway infrastructure. The roads sector suffers much less from financial scarcity. The situation in the mid-1990s is that 41% of the financial funds devoted to transport infrastructure is spent on the road system.

The influence of institutional veto powers at the first phases makes the governmental consultation process very difficult. When this has been finished and the loyalty of all those involved has been assured, projects come into a funnel which allows the implementation process to move forward with relative ease. Aside from a number of crucial public reports, the individually initiated and opposing policy studies are limited because this is a procedure that places a lid on the participants. Participants must present themselves at the beginning of the process as *Beteiligten*. *Beteiligten* are participants who have an interest relevant to the issue and have been legal persons for at least ten years. It is possible for industry to buy its way in by means of an acceptable interest organisation. *Beteiligten* are generally cantons, environmental groups, the automobile lobby and interested individuals.

They commit themselves to the regulations of the procedure which prevents them from playing a double game and profiting from their participatory opportunity and at the same time leaking more favourable reports based on different figures, a situation which can result in a 'battle of experts'. Although the responsible traffic agency attempts to have all parties arrive at a consensus, the *Beteiligten* are of course free to continue their opposition on the basis of the same data based on their own estimations. The criteria analyses used to determine various possible routes offer this possibility. *Beteiligten* sometimes submit analysis reports during public consultation procedures or appeals, but the proceedings for these are strictly regulated.

In keeping with formal stipulations, the actual contribution of the federal government to the investments in the private cantonal railways is about 50%, as is the combined contribution of the cantons and the local governments. The federal framework credit for 1996-99 for the extension of the Bern-Solothurn network, for example, determined that the federal government would spend 0.3 billion and the canton the same amount. However, the 50/50 division is under fire from two sides. As a result of the expanded ambitions for passenger transport, the cantons are asking for higher contributions from the federal government in the future. The federal government, on the other hand, is inclined to the opposite based on decentralisation tendencies; since the federal government has great ambitions for new railway lines on the federal scale, it wants to reduce its share in the investments into regional infrastructure. The 50/50 relationship is then put under pressure. An extension of this is the discussion of the relationship between the Swiss Rail's network and the connecting networks of the *Privatbahnen*. Existing infrastructure can be used jointly by the various companies and new infrastructure can be constructed together. The question of giving up autonomy is a sensitive issue, however, particularly for the smaller companies that are afraid of Swiss Rail, and Swiss Rail finds it dangerous to join up with regional companies because arrangements they might make could condition the functioning of the federal network.

Formally speaking, the cantonal roads are completely the responsibility of the cantons, but here again in actual practice there is a certain 'mixed financing' and a joint approach to projects. Although these co-operative ventures run smoothly, not all of those involved have experienced this interweaving as efficient. Cantons can set up expensive projects which they don't have to pay for themselves so that there is a certain amount of oversupply.

Maggi (1992) makes an analytical distinction between junction cantons and linking cantons. Transport infrastructure has the annoying characteristic of placing more of the benefits with the junctions and the costs with the links. Since the institutional structure in Switzerland provides lower governments and sparsely populated areas a

large vote in decision-making, plans and projects with a national or international impact are handled to a great extent as local commodities. He criticises this practice and is not the only one to do so. The federal structure in particular, which showed its most extreme characteristics in the decision-making process concerning national railways and roads, comes under fire. The long trek that projects have to make from one agency to another, the 'bureaucratic chain' as it is known, involves a great deal of time and money. As if in Maggi's wake, Zimmerli (1993) studied the legal ways to limit such local authority; he examined the application of this recent centralised procedures related to the construction of railways in a federal context. More formal decision-making power had been concentrated in the federal government. Such reforms on the institutional level will probably have little effect as long as cantons maintain a constitutionally protected position. The preliminary empirical material shows no significant acceleration, and the relationships between the various agencies have certainly not improved. Probably the revision voted down by the population at a given point concerning the financial relationship between private and public transport would have been of more use.

### 5.3 Setting priorities in Germany: *Vorsprung durch Gründlichkeit* (*'Advantage by thoroughness'*)

#### *Deliberation procedures*

In Germany, the deliberation process for investment in transport infrastructure takes place in stages and moves systematically from general and abstract to more and more concrete projects. At the top of the institutional structure is the *Bundesverkehrswegeplan* (BVWP, Federal Transport Plan), that is drawn up generally every five years and projects forward for 20 years. It includes all important future projects without tying these to any financial responsibilities. The exact routes are not outlined in great detail. Given its level and time span, this plan is rather general and open. The projects it includes date from earlier plans or from wishes of the federal or state governments.

Related to the Federal Transport Plan is the *Standardisierte Bewertung* (SB, Standardised Evaluation), a policy analysis tour de force with ingenious calculation procedures that are able to demonstrate the desirability of infrastructure projects by means of various criteria. The evaluation method is harmonised for all roads, railways and waterways and was, just like the Federal Transport Plan, recently modified.<sup>14</sup> The transport prognoses for the various modes are also related to one another. For infrastructure projects to move further in the selection process than just being mentioned in the Federal Transport Plan, they must pass the SB test. Projects are evaluated according to the total results of the following four groups of criteria:



### A. *Social benefit/cost ratio.*

In this group, the product of the following components is calculated: (1) project benefits of lower transport costs, road maintenance costs, contribution to traffic safety, improved accessibility, regional development effects and environmental effects (noise and emissions) and (2) the investment costs. An attempt is made to include as many effects as possible under category A so as to be able to use conversion factors. A B/C ratio higher than 1, in other words a positive balance of benefits and costs in the broad social sense, is the justification for why a project is carried out at all. The conversion of as many as possible elements, which are not directly economic, into monetary terms provides the first basic figure which can be divided into three categories:

- 1)  $B/C > 3$ . The project is of great socio-economic value, therefore of 'pressing need' and has the highest priority.
- 2)  $1 < B/C < 3$ . The benefits of the project are higher than the costs, but not exorbitantly higher. Thus, the project comes under 'other needs' and is placed on a reserve list.
- 3)  $B/C < 1$ . The costs of the project are greater than the benefits and thus *a priori* there is no reason to implement it.

### B. *Ecological evaluation*

The criteria of this group, damage to biotopes, scenery, water, soil, protected areas (including cumulative effects of environmental damage) and cultural elements, cannot be quantified and certainly not put into monetary terms. For this reason, they cannot be included in A. To increase the possibility of comparing environmental effects with economic effects, it is examined which costs will have to be made for extra repair activities for a project to maintain the environmental quality at the same level. Thus, it is possible that a project will be cancelled on the basis of environmental objections. This may also be caused by the extra costs required for mitigating measures. Since the 1992 Federal Transport Plan, cartographic representations are made for environmental aspects of all new infrastructure projects *greater than* 10 kilometres.

### C. *Urban development evaluation*

Urban development effects are only described qualitatively. The burden of the project on the urban environment *within* a radius of 10 kilometres is catalogued under C for environmental quality and possible social disruption resulting from fragmentation. Examples of this include barrier effects, higher quality of new residential and commercial areas, the extent to which more traffic will be directed to the main network of roads and the influence on changing urban functions. These criteria are hardly ever used in other countries and are thus surprising;

however, they do not carry great weight here either. Frequently, new motorways planned through inner city areas do less well than other projects.

#### *D. Supplementary criteria*

These criteria have to do with such things as substitution effects between automobiles and public transport (expressed in mutations of individuals and flow of freight), completion of corridors, missing connections with other junctions and nodes (ports, airports, intermodal freight terminals), international connections and 'projects of great significance'. The last of these sub-categories was especially created for the highlight of the 1992 Federal Transport Plan: the Unification projects which are intended to bring the infrastructure into the new states up to West German level, and the magnetic suspended railway, Transrapid, the technology of which the Germans would like very much to export. It is the desire to carry out these projects, no matter which deliberation method is used. By putting them in D, their priority is safe, even if they do not meet the criteria of A, B or C.

After being included in the Federal Transport Plan and receiving the SB stamp of approval (preferably 'pressing need'), projects are elaborated in a five year plan, the *Bedarfsplan* (Need Plan) that describes investment wishes for each state. It consists of a series of financial estimates and a few maps which represent a translation of the planning intentions into a financial programme. Although the planning horizon of this *Bedarfsplan* is also 20 years, the agreements made between the federal government and individual states are only for the first five years. The five year agreements in the *Bedarfsplan* obtain legal binding force by giving it the force of law. This long term programme is then the basis for the actual construction expenditures which are made each year depending on available funds.<sup>15</sup>

Neither the Federal Transport Plan nor the *Bedarfsplan* may be skipped before, in the later phases, the choice of route is made. Then, it is the German *Länder* (states) whose responsibility for physical planning stems from the constitution, that lead the way. They carry out the study and comparison of alternative routes. They execute the *Umweltverträglichkeitsprüfung* (Environmental Impact Assessment). They conduct public consultations with other public bodies and individuals. All of this is part of the process that leads to the *Linienbestimmung* (General route decision) and the *Planfeststellung* (Determination of the precise location) and takes place as the decision-making process moves further and further away from the federal level. What takes quite a bit of time in this is not so much the public consultation procedures as the achievement of agreement between government and society.<sup>16</sup>

Although the states are not required to do so, for the most part they have also set up their state projects using the same steps in their planning procedures; these are the series of State Transport Plan, including the series *Standardisierte Bewertung* -

*Bedarfsplan - Linienbestimmung - Planfeststellung.* Since, in the opinion of Northrhine Westphalia, this approach has proved its value in the past, the steps are followed in the same succession, the only difference being that the state is the initiator. This is one difference that has come into being between the federal and state procedures: the federal government has adopted new acceleration legislation in which procedures allowing public consultation have been shortened, ultimate decision periods have been set and the range and length of reports on environmental effects have been confined. The 'red-green' government of the state of Northrhine Westphalia is more open to the environmental movement and criticism from individuals and is more concerned about reactions from left wing voters. Consequently, it has not adopted this legislation and apparently does not intend to do so in the short term. Since some states are going to include all sorts of acceleration devices in their state laws, and others prefer extensive deliberation and re-deliberation of the pros and cons of alternatives, there will most likely be differences in the speed in which state projects are executed. But this speed has just as much to do with the strong desire to really construct these infrastructures, however, apart from the question of which type of planning procedures are used. Brandenburg, for example, has not adopted any acceleration legislation, but unlike Northrhine Westphalia there are no complaints about delays; the desire is to generate economic growth through infrastructure, and the environment, quite simply, is of secondary importance.

Taxes levied for the purpose of transport infrastructure are not bound to specific objectives, which means that funds from general taxation, vehicle taxation and petrol taxes can be spent, in theory at least, on any mode. There are no separate fund constructions or savings and loans facilities; as a result all investments are simply paid from the general budget. When politicians want to radically change financial priorities by spending more money on a given form of transport at the expense of another, there are no legal obstacles to this as there are in Switzerland. With the introduction of the *Gemeinde Verkehrsfinanzierungsgesetz* (GVfG, Local Transport Financing Act) in 1994, that is filled by 10% of the petrol taxes and contains the financial means for regional and local public transport, it was decided that 80% of these funds would be allocated by the federal government to the state governments and distributed proportionally according to the number of inhabitants. States can decide for themselves what they do with the funds. The other 20% is earmarked for public transport projects. Before 1994, 50% of the petrol taxes went to roads and 50% to public transport. Northrhine Westphalia has taken steps to further decentralise its share in this fund through its own *Regionalisierungsgesetz* (Regionalisation Act) into what are known as *Verkehrsverbände* (regional transport authorities), groups of local governments that work together in the area of transport planning and which over the course of time have developed

authority over the local governments. In accordance with this Regionalisation Act, all municipalities are required to take part in a *Verkehrsverbund*. Northrhine Westphalia has restricted itself to outlining a minimum for the legal competences of such a body. Money for bus, tram and railway infrastructure is given to these *Verkehrsverbände* by the state which must in turn determine itself to what extent it will be spent by the associated *Kreise* (provinces) *Kommunen* (municipalities) and *kreisfreie Städte* (autonomous, 'province-free' municipalities) themselves or not, with the understanding that the construction of regional railways must be arranged by the *Verkehrsverbund*. These are required to submit investment plans for projects above DM 5 million to the state and projects above DM 50 million to the federal government. At a later stage this requirement to consult federal government for project above DM 50 million will disappear. For the financing of public transport projects local governments are allowed to finance 30% of the projects from their own tax income, and the state may contribute to a maximum of 70%.

#### *Actual deliberation practice*

As was indicated in the discussion of formal procedures, we find the very first preliminary selection of future connections in the Federal Transport Plan. In practice, projects are chosen from this that are found in the five following main categories in decreasing level of priority:

- 1) In-progress plans in former West Germany.
- 2) A *Lückenschlussprogramm* ('Gap-filling Programme') dating from May/July 1990, that is intended to bring into being missing links between roads that are still unconnected.
- 3) Projects that were considered to be of 'pressing need' in the 1985 Federal Transport Plan. These projects that were promised in the past and have not yet been carried out are continued now to provide continuity to the decision-making process.
- 4) *Verkehrsprojekte Deutsche Einheit* (German Unification Projects). There are 17 of these: 9 railway projects, 7 road projects and 1 waterway project which is intended to provide the connection Mittelland/ Elbe-Havel canal/ Lower Havel waterway/ Berlin waterway.
- 5) A few new construction plans which come from the following sources:
  - Other projects from the 1985 Federal Transport Plan;
  - Connections which the western states have repeatedly expressed as desirable.
  - Proposals from elected officials.
  - Proposals from the Ministry of Transport and German Rail.

The total federal investment amount for the period 1991-2010 mentioned in the 92 Federal Transport Plan is DM 562 billion. About 1/3 of this is put into railways,

1/3 into roads and 1/3 into other matters. The re-assignment of this among modes is not as simple as the formal structure might suggest. In actual practice, the monies that the railways have left over in their budget items are snapped up by the Federal Ministry of Finance and not by the roads or waterways. Consequently, it is almost impossible to move funds back and forth between modes. The Ministry of Finance has allowed, however, for investments and other items to be moved within the railway budget.

Although the Federal Transport Plan covers almost all projects, this does not mean that the astronomical amount of 562 billion is sufficient to cover all of them, or that all of the connections that have been listed up can be constructed quickly. The first three categories have resulted in so many obligations among the parties that they will be carried out. At a high political level, however, it has been decided that the German Unification Projects must be carried out no matter how and as quickly as possible. And within that group, the hinterland connections to Berlin are absolute priority. Even with the increased taxes, this means that there is almost no financial room any more for really new projects in the old states; projects that are already under way and projects for the new *Länder* take up 80% of the funds. Thus, category 5 is for the most part empty. There is a more or less rigid distribution formula among the states for new projects in this category. The formula is 2/3 for the west and 1/3 for the east, and within those groups a distribution according to the size of the state. But given how overly full categories 1 through 4 are, 4 in particular, this rule is a paper one and 2/3 of the monies actually go to the east. As a result, there are very few projects found in the Federal Transport Plan for Northrhine Westphalia for example. Only a few ongoing projects and bottlenecks can be dealt with such as the A3 which is supposed to be extended into the east; as it is now, it simply stops. Other west German states are in a similar situation. This is why the increased taxes to bring into existence German unification were called 'solidarity taxes'. German legislation does not establish exact amounts per project in the distribution of funds among the states, it rather sets forth a total amount. New projects are simply postponed when the amount gets out of hand. Every two years, the pattern of expenditures of all the states is examined and funds are redistributed. This procedure evokes strategic decisions on the part of some states because they may succeed in acquiring monies from other states that are slower in making decisions (Garlichs 1980, Reh 1988).

The Standardised Evaluation only comes up in the preliminary selection of projects for the *Bedarfsplan* (Need Plan). At that point, the method is actually used to 'eliminate' or 'select out' projects with a low score, but not so much to 'select' projects 'in'. This approach guarantees that unattractive projects will not be taken into consideration as a result of objectified criteria, but not that attractive ones will

be included; this remains a question of political consensus. A total score is drawn up for the project on the basis of criteria from A through D. Each criterion has a certain weight that is determined politically. The weight of each group of criteria, depending on the nature of the project and the number of advantages and disadvantages can vary per project. If the official SB procedure is followed, a project with a  $B/C > 3$  and scores in B and C that are not too unfavourable should be included in the *Bedarfspläne*. Projects that have seriously negative ecological or urban planning consequences which cannot be resolved in an affordable manner are placed on the reserve list. The purpose of category D is to provide political leeway. The first example of the elimination effect of the Standardised evaluation is motorway A4 from Krombach (Northrhine Westphalia) to the Hattenbacher Dreieck junction (Hessen); this junction was included in the 1985 Federal Transport Plan but its construction was suspended in July 1987 due to social opposition. Before the A4 could be included in the most recent *Bedarfsplan*, there had to be a new evaluation. The B/C ratio (A) turned out to be favourable: 4.3, but the ecological evaluation (B) indicated that a sensitive area would be overly affected. The remaining criteria did not change the total picture very much and suggested only an alternative connection (the B52). This was reason to recommend reconsideration. The A4 was then declared to come under 'other needs' and is once again on the waiting list.

The second example of the conscientious prioritising of a cross-border connection is that of the Twente-Mittelland canal which was pushed by the Dutch. The project is in the 1992 Federal Transport Plan, although that was primarily as a result of the request of the two states of Lower Saxony and Northrhine Westphalia, which would profit from it. Its inclusion in the Federal Transport Plan, however, is not the criterion that will determine its being constructed in the future; the SB outcome is decisive. The B/C turned out to fall between 0.6 and 0.9 according to a combined German/Dutch study conducted in 1994. Since that time, this option has disappeared from view completely in Germany because waterways in other areas achieve higher results, and Twente-Mittelland is not seen as a network-completing factor. After the Solomon-like judgement of a generally-accepted model, the discussion in Germany was closed.

If people in the Netherlands look somewhat uncomfortably at the German belief in methodology and the 'rigidity' with which they hold onto this, the Germans have a problem with the 'unreliability and sloppiness' of decision-making in the Netherlands. To take an example: the German extension of the railway line through the southern Netherlands (the 'Betuwe Line'). It is included in the 92 Federal Transport Plan; both federal and state governments support its construction and do so explicitly. The federal government has already decided that there will be a connection, but the decision for the placement of the route falls to Northrhine

Westphalia; since this state is dominated politically by a red-green coalition, it takes time to make a decision. The state may delay construction of the German connection, but it may not obstruct it. This multi-level form of decision-making as determined by federal principles is unfathomable to many Dutch officials who simply want to see the western part of the line constructed; the Germans speak with two mouths, but do so in a consistent way. In the Netherlands, it would seem there is only one official national decision-making forum, the Second Chamber of Parliament, which wants to discuss all the details of every new development in the country. In the opinion of German officials, there is perhaps only one authorised body but it continually says something different. It is as if you cannot trust any decision because the difference between a 'real' decision and a casual remark is difficult to determine.

Northrhine Westphalia has the same 20 year plans for its state roads as the federal government, making use of the same evaluation method and the same development as the *Bedarfspläne*. The same regional distribution issues come into play in the distribution of funds for roads for regional public transport. Cities, municipalities and *Verkehrsverbände* never have all of their wishes met at the same time, rather have to make a choice from among them. All parties receive a share roughly proportionate to their size and number of inhabitants. This provides a high level of certainty so that few conflicts need to arise. All of the parties are favourably inclined to the procedures; proportionality and pacification are institutionalised. There is great agreement about both the application of the analytical method and the decision-making procedure. Nonetheless, upon occasion there are deviations from the procedure as agreed upon by the *Landestag* (State Lower House). For years the financially distressed city of Oberhausen had refused construction of a tramway link between the northern and southern sections of the city out of financial self-protection. In the meantime, buses were put into service on routes between the north and south and through the centre. In the 1980s, the number of passengers and cost-covering percentages on the ageing bus systems had declined so much that an existential decision had to be taken about the continued existence of public transport in the city. In the eyes of the state this painful situation justified making an exception for Oberhausen. A new tram line between North and South Oberhausen was constructed through the centre, including a bridge over a railway yard and connections with the reorganised bus network. The cost of all of this, including the trams, came to DM 256 billion. It was financed from and executed by the *Bedarfsplan* because the state found the project to be of great importance. The other *Verkehrsverbände* in the state were not amused, however, because it meant delays for their projects, in conflict with agreements that had been made. When procedures have begun, it is possible for lower governments to derive rights from this and it becomes difficult for the financing state to withdraw. In most cases, that is not done either. They engage in long deliberations about procedures to be

followed in the future; These deliberations are carried out with a limited group of directly involved parties. The agreements that come out of the deliberations are then fixed. Hofstede's remarks about Germany are very much to the point.<sup>17</sup>

According to Hofstede, Germany is a 'very interesting' phenomenon: 'it surprises a great number of people that the distance of power is low. At the same time, a great deal of uncertainty is avoided.' Hofstede finds the German pattern in Hungary and Austria as well, who have the same culture due to their Habsburg past. 'It is quite simply Freud's super-ego. The people have to do a great deal, but that comes mostly from themselves.'

'Is the avoidance of uncertainty a negative thing in economic terms?'

'No, people who avoid uncertainty are meticulous types. The Japanese are that way as well. It means that you can make products in which you have to follow the rules meticulously. If you make an agreement with someone to do something in a given way, then you will also do so.'

Transport prognoses are carried out in combination with the weighing of projects.<sup>18</sup> If sufficient funds cannot be made available to carry out strongly felt wishes, experienced independent engineering firms, commissioned by the Ministry of Transport, calculate the effects of these. The calculations of the input data they use are approved beforehand by the central government. There are a number of specialists for each type of project among whom the studies are distributed. The results of the evaluation can be verified later by an independent state research agency. This may be necessary if, for example, an affected state questions the results of the evaluation.

One remaining practical problem is that some evaluation criteria are difficult to compare with others. Some criteria cannot be expressed in B/C ratios without making arbitrary choices, others cannot be compared whatsoever. This is the case of traffic safety, for example. The prevention of traffic deaths can be expressed in terms of cost savings, but a comparison with the reduction of noise pollution runs into ethical objections. Converting both traffic safety and noise pollution into monetary terms only confuses the issue.

In the phases that follow this, B/C no longer plays a role; it is time for political discussions between the federal and state governments. In these negotiations, problems and solutions are exchanged: it is possible to make exchanges between smaller projects. This exchange circus does have its limits, nonetheless. In the case of large projects, it is not acceptable to use a 'this for that' strategy because they are considered to be of essential importance. This greatly increases the chance that both sides will block or reject each other's large project plans, although new projects or variations on old ones can always be invented and introduced into the discussion.



The federal government structure gives rise to a relatively clear delineation of federal and state connections. That is not to say that they can make their decisions independently. Non-federal projects more or less by definition are realised with 'mixed financing'. Modernisation of the regional public transport network in Düsseldorf, for example, which consists of an underground, a tram and a city railway, has been included in the federal plan, for a total amount of about DM 3 billion, and it is also included in the plans of Northrhine Westphalia. Since the mid-1980s 60% of this has been paid for by funds from the federal coffers, 30% from state funds and 10% from the participating communes. In addition to financial interdependence, there is also a strong physical planning interdependence between the various governments. Federal projects are of great importance to the states as well. In addition, states oversee the planning application of federal projects in their territory, so that in actual fact, there is a negotiation relationship between the federal and state governments. States cannot torpedo connections that have been proposed by the federal government, but they can to a great extent influence the choice of routes by playing with the length of planning procedures. On the other hand, they have almost no means of pressuring the federal government to plan projects that they themselves might want but which the federal government has shown no interest in. This is the situation in which Northrhine Westphalia finds itself, for example for the freight transport connections in its area. Transport connections for freight are generally supra-state and thus belong to the federal network, but states also place a high value on freight connections.

There are no sanctions on government bodies if they exceed legally established decision periods. Consequently, when states have clearly different preferences than the federal government, they can slow down the decision-making process of planning almost without fear of reprisal. Established closing dates do hold for private citizens, however; after the end of a given period, submitted objections are not accepted for processing. In the *Linienbestimmung* (Route Planning) and *Planfeststellung* (Determination of the precise location) phases, the length of official planning procedures seems to be less important than the active opposition of individuals and the environmental movement, and the length of the appeal procedures which are brought before the courts. This pressure sometimes results in cancellation and not just postponement, even if projects have been in the *Planfeststellung* for years. The construction of a tram line to Düren was abandoned after a few years because the noise pollution was considered to be considerable and the placement of screens everywhere too expensive. The preparation for a railway line from Cologne airport to Bonn-Adenauer ran aground because the environmental movement insisted that it would have to make a large detour around Cologne and a nearby protected nature area. The *Grünen* (Greens) proposed a people-mover as an alternative but the competent authorities considered the

investment to be too high and unprofitable. Since there is no check on costs during the programme and execution phases, and funds continue to flow from the budget, more expensive interventions come often at the expense of other projects which had been studied and were intended to be implemented. Compensation claims and environmentally friendly applications begin to function as precedents and the financial problems accumulate. Nonetheless, it is implausible that in states where specific organisations initiate new infrastructure links they can evoke acceptance or ignore resistance by cutting back on support studies or closing as many doors as possible. Special interest groups whose right to participate in the decision-making process is institutionalised, such as the *anerkannte Naturschutzverbände* (Certified Nature Protection Associations), are not simply thrown out on the street when they clearly have the support of the population. They have a more or less fixed place in all planning-relevant decisions. In Northrhine Westphalia, for example, the introduction of acceleration legislation was not considered to be a realistic option to improve decision-making because there was no desire to antagonise interest groups. Incidental protest organisations are treated with less caution. For the moment, there is an attitude of stopping the holes; various alternatives are calculated by public and private agencies of traffic planners and engineers and used to varnish over latent displeasure. Although the congestion in the Ruhr is considerable, a solution is not easily found and the financial means needed to grease the negotiation process simply do not exist. It is equally implausible that regions that get financial support and where popularity of new transport nodes and connections is high, would allow progress to run aground due to procedural problems. States with a relatively great need such as Berlin and Brandenburg are much more focused on resolving interrelated government problems and building up professionalism than in eliminating policy studies and participation procedures. We now come to the fork in the road which lies ahead for Germany and its states:

- 1) Decision-making about infrastructure is being approached more and more as a management issue, which must lead to lower costs and shorter procedure times. Governments should be flexible and work together in a business-like way and minimise the influence of participation procedures. Germany as an industrial and economic power must take shape. Money to meet the inexhaustible wishes of ecological dreamers who see ecological areas or nature parks in every spot of green, simply is not available.
- 2) Decision-making about infrastructure is an issue about the future structure of society. A number of fundamental choices must be made concerning the economy versus ecology issue which cannot be dealt with simply by adequate management. To make these choices, a further democratisation of the decision-making process is necessary. This includes not only open

participation procedures, but also legal innovations such as referenda and more elected officials. In this way, the current stalemate can truly be broken.

The institutional dilemma and dialogue about it in Germany run along the dividing line of materialism versus post-materialism.

#### 5.4. Setting priorities in the Netherlands: *Geduld is een schone zaak* ('Patience is a virtue')

##### *Deliberation procedures*

Given its geographical position, the Netherlands considers itself an important supply and transit area to its surrounding countries. This leads to a situation in which investments in infrastructure are awarded considerable economic value. At the same time, the country wishes to play a leading role in environmental protection, and does not want to sacrifice nature values to economic growth. The planning document which guides traffic and transport policy, the *Tweede Structuurschema Verkeer en Vervoer (SVV2, Second Traffic and Transport Structure Plan)*, is based on the principle of a balance between the economy and ecology, or rather of a growth of one that is not at the expense of the other. For this approach to be successful, investment in transport infrastructure must not be considered as a separate policy area, but must be carried out in combination with physical planning and environmental policy. In documents that elaborate the *SVV* there are always explicit references to the environmental norms and objectives as given in the National Environmental Policy Plan. The connection to physical planning policy is made even more specific. In the Fourth Policy Plan on Physical Planning and its amendment (*VINO & VINEX*), the concept of a 'mainport' is introduced: a transport junction of continental significance. The two mainports of the Netherlands are the port of Rotterdam and Schiphol airport; they are of great importance to the development of the Dutch economy and their position must be maintained, at the very least, and preferably expanded. To be able to keep up with the growth in transport flows, investment in infrastructure is necessary, within the limits established for carbon dioxide emissions and noise pollution. And if valuable nature areas are affected, there must be mitigation. Almost as important is the construction of new connections and improvement of existing ones between the mainports and the hinterland. To steer the growth of transport in environmentally friendly paths and to make optimum use of the limited space, the emphasis is more on the construction of railways and less on the construction of motorways. The mainport concept, consequently, has no relationship to private transport. But there too, the focus is on collective transport. Existing plans for the construction of roads will be completed, but the intention is to concentrate new investments on railways and regional public transport. A *lokatiebeleid* ('Location policy'), as it is

known, is also included in this context. The construction of new residential, commercial and industrial areas must mesh with the planning of infrastructural connections. Municipalities assure that business areas where many people work are located in places where there is good public transport, and the regional inspections for physical planning (*IROs*), which are part of the Ministry of Housing, Planning and Environmental Policy (*VROM*), supervise the municipalities. Since bets on infrastructure investment are hedged, it is essential to have a view of all decision-making in physical planning. An attempt is made to achieve an integral consideration of interests on the basis of the above-mentioned planning documents, but an officially accepted evaluation method does not exist.

At the top of the national planning hierarchy are what is known as *Planologische kembeslissingen* (National Physical Development Plans, *pkbs*). These are documents about future physical planning structure in the Netherlands which are established officially by Parliament and thus are legally binding to lower governments and citizens. There are two types of core planning decisions:

- 1) The *structuurschets* ('Structure Sketch'), which approaches physical development from the perspective of tension between various planning interests that have to be counterbalanced. This planning evaluation approach is called a 'facet policy'. *VINO* and *VINEX* both come under this category and fall under the responsibility of the Ministry of Housing, Physical Planning & the Environment; they are also signed by concerned ministries such as Transport, Public Works & Water Management (*V&W*). In no other country has physical planning achieved such a formal hold on all sectoral planning-relevant decision-making procedures. Facet policy directs sectoral policy, which includes transport policy, and vice versa. This is a 'leapfrog' process: facet policy and sector policy continually take one another's progress into their most recent plans.
- 2) The *structuurschema* ('Structure Scheme'), which concentrates primarily on purely sectoral intentions but does not ignore the planning context in which they occur. The *SVV* comes under this; it is drawn up by the Ministry of Transport, Public Works & Water Management, but the Ministry of Housing, Physical Planning & the Environment also signs it. The *SVV* is not the only National Physical Development Plan in transport policy. It has become common practice to make Structure Schemes for large infrastructural projects as well; such projects include the extension of Schiphol airport, the *Maasvlakte*, a vast Port of Rotterdam extension planned at the mouth of the Maas, the railway line (Betuwe Line) from Rotterdam to the German border and the High Speed Railway Line from Amsterdam to the Belgian border. These are called National Physical Development Plans + (*pkb+*).

*Pkbs* may be seen as documents that indicate the grounds on which projects should be prioritised; the Meerjarenprogramma Infrastructuur en Transport (*MIT*, Fouryearly Investment Programma Infrastructure and Transport), on the other hand, contains the list of infrastructure projects that it may be reasonably assumed will be carried out. This long range plan is published annually and projects forward for four years. It distinguishes between three different project phases:

1. The *verkenningfase* (exploratory phase): projects in this phase are placed on the agenda by one or more parties and are examined for desirability. No money is made available for them as yet.
2. The *planstudiefase* (plan study phase): it may be reasonably assumed that the projects in this phase will be carried out because their contribution to traffic and transport policy has been recognised. An appropriate route is sought for these projects as well as measures to minimise the negative effects on the environment. Cost estimates are made but these costs will only be incurred a few years later.
3. The *realisatiefase* (execution phase): projects in this phase are ready to be carried out or are already being carried out. The financial means for these are reserved for the coming years.

Although, just as in Germany, a great deal of value is attached in the Netherlands to a policy which makes use of integral planning, the manner in which the decision-making framework connects to the criteria determining the desirability of a project is not made explicit. The various services in the Ministry of Transport, Public Works & Water management sometimes make use of evaluation methods to demonstrate why a project is desirable or why it is not, but these have no official status. Nor is their use standard in every case, and they cannot be considered as the direct translation of objectives of one of the National Physical Development Plans.<sup>19</sup>

Since 1994, money for transport infrastructure no longer comes from the budget of the Ministry of Transport, Public Works & Water Management, but from a separate Infrastructure Fund. All the funds for line infrastructure are found in this fund, as well as a few contributions to investments in ports and airports, although these are traditionally considered to provide for themselves. The fund was intended to make it possible to move monies back and forth between various transport modes and to be able to prioritise according to the quality of projects, but in the final analysis Parliament did not agree with this. The differentiation between investments in infrastructure and running expenditures has become firm, however. The *Wet and Besluit op het Infrastructuurfonds* (Act and Decree on the Infrastructure Fund) determine that not only national infrastructure but also provincial and local

infrastructure are paid for the largest share (95%) from this national Infracund. A separate budget item has been established for this in the fund. A separate item has been created for local projects under 25 million guilders in the Infracund, the lump targeted expenditure (*gebundelde doeluitkering*). National government does not bother with small funded projects such as these; the money is transferred directly to the lower governments in question. Provinces and municipalities have legally established autonomy and consequently have the authority to construct infrastructure independently for their own level. It must be paid for by a combination of funds from their own tax sources and from general provincial and municipal funds, which are not high and are intended for general purposes, not just for infrastructure.<sup>20</sup>

There is no separate sectoral legislation for the construction of transport infrastructure projects as in all of the other countries we have studied. There is a Physical Planning Act (*WRO*), the decision-making procedures of which apply to spatially relevant projects including those related to transport. This Act has come to be seen as being too global and open-ended, because the coordination of various independent but parallel environmental permits during a given project presented a problem. It also did not allow the central government to deal firmly with lower governments that did not want to cooperate with its policy. In the 90s this discontent led to a sectoral supplement in the legislation, known as the *Tracéwet*, ('Route Act') which made it possible for the ministers of Housing, Physical Planning & the Environment and Transport, Public Works & Water Management to adjust binding municipal zoning plans. This is only allowed, however, if the provinces and municipalities in question were consulted about the infrastructure construction plans during an earlier stage.

The Physical Planning Act and its attendant Route Act lead to the following steps in the decision-making procedures:

1. A *startnotitie* (Initial Memorandum or Announcement) by the ministers of Housing, Physical Planning & the Environment and Transport, Public Works & Water Management that they are going to establish a *Trajectnota* ('Route Memorandum'). The purpose of this Route Memorandum is to describe the need for and desirability of a given infrastructure project. The project should fit into policy lines established in the above-mentioned *pkbs* (*SVV*, *VINO/VINEX* and *NMP*). Other governments, interest groups and concerned citizens have the right to consultation about this announcement. If the project is a large one and of national interest, the Route Memorandum is replaced by a *pkb+* and the consultation is given more weight.

2. Development and establishment of the route memorandum or the Structure Scheme by involved parties, in which time is once again reserved for consultation and advice from various parties. During the development of the route memorandum there is also a general Environmental Impact Report made by the initiator (Directorate-General for Public Works & Water Management, construction department of the Ministry of Transport or Dutch Rail) and under supervision of an independent Environmental Impact Commission.
3. Development and establishment of the much more concrete *ontwerp-tracébesluit* (Draft Route Decision) that determines the precise location of the connection once again, by the ministers of Housing, Physical Planning & the Environment and Transport, Public Works & Water Management. During this process, an Environmental Impact Report is considered which offers various alternatives, among them the most environmentally friendly alternative. Once again, it is the initiator of the project who carries out the study and supervises an Environmental Impact Commission. After this has been done, there is public consultation and the lower governments, special interest groups and private citizens are given the opportunity to offer input.
4. Government choice of route and the establishment of a definitive *tracébesluit* (Route Decision) after consideration of the arguments put forth during the consultation period. It is possible to appeal against this decision with the Administrative Jurisprudence Department, an independent subdivision of the Council of State.<sup>21</sup>

#### *Actual deliberation practice*

The focus announced in the planning documents to strengthen the port of Rotterdam and the airport of Amsterdam (Schiphol) has been consistently applied in the Netherlands by means of an enormous increase in the investment volume in large-scale infrastructure projects. The Betuwe Line, a traditional railway connection between the port of Rotterdam and the German hinterland, and the High Speed Rail Link from Amsterdam via Schiphol, Rotterdam and Brussels to Paris will take up a large share of the infrastructure budget in the coming years. There is also a northern branch to the Betuwe Line on the horizon, as well as an eastern High Speed Rail Link from Amsterdam to Cologne via Utrecht. The government will also subsidise the construction of a new port extension at the Maasvlakte at the mouth of the Maas and new runways for Schiphol. This will involve a considerable sum when expensive land reclamation is involved. Such a subsidy represents a break with what was the rule until recently, that port and airport companies must pull their own weight (Stevens 1997). At the same time, investments in railway connections are seen as environmentally friendly accommodation to the growth in transport. This, too, corresponds to the desired

balance between economy and ecology. The strategy to make the Netherlands a distribution country, however, is far from being unanimously accepted.<sup>22</sup> Environmental groups, people living in the area, a number of experts and a considerable share of the national population have questions about the mainport strategy. The profitability of the Betuwe Line, which will cost at least eight billion guilders, is an issue of serious discussion. Investment in barely viable freight by rail in the Netherlands will possibly provide more competition to the inland waterways than to road transport; the inland waterways, on the other hand, do function even if they are relatively neglected. The social resistance to the two mega-projects has been bought off by expensive environmental accommodation measures which have partially pushed aside smaller, but not necessarily less essential projects. Regional railway connections, road sections and waterways outside of the economic heart of the country - the urban conglomeration of the western Netherlands, with tentacles into Gelderland and Brabant - suffer from this in particular. More generally, experts are increasingly asking the question whether efforts to create facilities for bulk transport, an infrastructure from the previous century, offers sufficient added value to the Dutch economy in comparison with information technology, the infrastructure of the next century (Pols 1997, Kleinknecht 1998). Finally, in contrast to current policy and promises which have been made, there is a continuous increase in noise pollution and carbon dioxide emissions.

If the ecological vision of economic development has been set aside in the main lines of policy, the environmental movement and lower governments have managed to get a foot in the door when it comes to environment friendly implementation. The above-ground construction of roads and railway lines in inhabited areas and vulnerable green areas is seen on almost all sides as being unacceptable. Noise barriers, sunken railway lines and compensatory nature areas are part of the standard repertoire nowadays in the construction of transport connections.<sup>23</sup> Such adjustments, however, tend to drive up the price and eat away money for other projects. Minister Jorritsma (Transport, Public Works & Water management) has tried to limit this by simply refusing to implement the environmental measures proposed by the Environmental Impact Report for the A4 (Delft-Schiedam). Parliamentary intervention obstructed this (also see chapter 10).

The Infrastructure Fund provides an excellent platform for integral considerations, but a favourable financial construction must be complemented by organisational elaboration. The fund was only accepted after Mc Kinsey & Company had advised that increased capacity of all modes was desirable to respond to the continually increasing congestion. Nonetheless, unofficial partitions were made in the Infrastructure Fund. There is no intermodal priority-setting method. Moreover, uni-modal models such as the Priority-setting System for Highways (*SPW*) and the



Priority Model for Public Transport Infrastructure (*PIOV*) are only used incidentally and are not supported by the authorities, as is the case in Germany. The primary prioritisation takes place by placing the projects in six categories, known as *PRIO* classes:

1. Projects in the process of realisation
2. Formal government undertakings
3. Hinterland connections
4. Main transport axes  
Connection to the hinterland
5. Project listed in the Randsta accessibility Plan (BPR)
6. Other connections

Only within such classes is there 'integral consideration' making use of evaluation methods. Here again the application of such methods is not systematic. Actually, only projects submitted by Dutch Railways and small municipalities are subjected to prior evaluation by means of the Priority Model for Public Transport Infrastructure (*PIOV*). *PIOV* is popular with the technical and mathematical perfectionists in Dutch Railways and is partially adapted to their wishes. The method is sometimes also applied to applications in small and medium-sized municipalities, such as the Gouda line (Gouda-Katwijk). The Benelux Tunnel Metro (Rotterdam-Schiedam) was studied with the aid of *PIOV* by the Directorate-General for Public Works & Water Management. Calculations showed that the project would be non-cost effective, partially because of the considerable number of stops. In the opinion of the Directorate-General for Public Works & Water Management, the tunnel should only be used for a road. The Rotterdam region made its own calculations and recommended the Metro line to the Minister nonetheless, making reference to the objectives of the SVV in the area of regional public transport and to arguments concerning regional network effects of the connection. The Rotterdam lobby turned out to be effective; the connection and its various metro stops will be constructed, and as a result of tunnelling in Schiedam, it will be roughly three times as expensive as anticipated. The region found *PIOV* to be too one-sided and also objected to it because lower governments had not been involved in its development. Other large municipalities find it an excessively technical and rigid system, and manoeuvre around it as far as they can allow themselves to do so. The supply of information in lower governments is not geared to the detailed information desired by the Ministry of Transport, Public Works & Water Management. Perhaps the first well organised evaluations will function as reference projects for others and may, as a result, institutionalise the systematic use of the model. But as long as the outcomes may be bypassed with or without motivation, which often does indeed happen, the chance is small that it will be used for anything more than audits.<sup>24</sup>

Another reason that integral consideration does not take place with the Infrastructure Fund as was envisioned by some is that project initiators such as the Directorate-General for Public Works & Water Management and Dutch Railways try to achieve continuity in their annual expenditures and wish to avoid highs and lows. What they would prefer is to receive more or less the same amount every year and to keep a number of projects ready for implementation so as to 'plug them in' when earlier projects are finished off and money becomes available. The pressure of broader intermodal priorities is in conflict with their need for a regular financial rhythm and the certainty that funds that were promised a few years ago will indeed be received. On the other hand, there are sometimes 'anticipatory' regional project lists which are submitted to Regional Directorates for Public Works & Water management for financing, and then when money becomes available it is suddenly taken away because of a change in the political climate. A final reason why integral prioritisation of transport infrastructure has not come into being through the Infrafund is that the financial means for local and interlocal connections to new residential areas, the so-called VINEX locations, are extended in conjunction with the construction of residential areas and soil decontamination. Regional investment packages have been developed to this end. The Ministry of Transport, Public Works & Water Management makes financial commitments with various other departments and local and private parties. It then no longer has the freedom to weigh transport infrastructure projects against one another only. There has been resistance to the inter-governmental and inter-sectoral package approach designed for win-win situations among parties from segments of the Ministry of Transport, Public Works & Water Management which are not involved in the process, because they are used to *project* financing and not *package* financing. Sometimes VINEX packages projects find their way to the MIT and regular projects are pushed out. On the other hand, the Ministry of Transport, Public Works & Water Management requires that public transport connections stemming from VINEX meet the internally established norm that costs be covered to a level of at least 50%, which does not meet with great enthusiasm from regional parties and the Ministry of Housing, Physical Planning & the Environment.<sup>25</sup>

The introduction of the Infrastructure Fund in 1994 did not mark a fundamental change in investment relationships, although such a change did occur at an earlier time. In 1988, Dutch Railways developed *Rail 21*, a programme with railway projects to help relieve the increasingly difficult capacity problems. It was much less based on a carefully reasoned transport concept as was the case in Switzerland with *Bahn 2000* (and this could already be found in the SVV), but it did attempt to help make the step from a reactive approach based on solving bottlenecks to one based on strategic planning. This dynamic approach fell on fertile soil with the Minister of

the time, Minister Maij, and the broader Christian democrat/Labour cabinet where quality of life was an important theme and the contribution of extra roads to solve the problem of access became an increasingly important discussion issue. The leftover road projects from the 50s and 60s which had met such resistance that they are still on the books of the Directorate-General for Public Works & Water Management, were not in the final analysis the most promising ones (Huberts 1988, Advisory WRR 1994). During the cabinet period, approximately 18 billion guilders were spent on roads and 12 on public transport (eight on railways and four on city and regional transport), but after the publication and enthusiastic reception of *Rail 21*, both of them received 17 billion.<sup>26</sup> If the result of extra roads is only more automobile use, the conclusion was that plans for new ones had to be put aside and only ongoing projects or those that had been planned for a long time would be finished. Implementation of projects in *Rail 21* has become a much more expensive matter than projected. The cost estimates were based on experience with lines in Flevoland. But the property prices between The Hague and Rotterdam turned out to be higher; instead of the expected 8 billion, the costs are more in the line of 15 to 16 billion. One-third of *Rail 21* was completed between 1988 and 1996 and expenditures were at that time already close to 8 billion (De Jong, Stevens & Veeneman 1996).<sup>27</sup> The total will turn out to be roughly three times that projected by Dutch Rail. Since the supporting policy of various forms of taxation for automobile use announced by the government at the time has not been implemented, the increase in the number of train passengers has turned out to be less dramatic than hoped. New transport prognoses have led to a less ambitious form of *Rail 21*. When the direct bottlenecks in the Rotterdam-Hague route were tackled, the first tactical 'Pro-rail' package, it was time for the second section, the Amsterdam-Utrecht-Den Bosch route. Dutch Railways has announced that it will devote more attention in the following sections to connections with public passenger transport in urban districts.

The gap that is left over from the limited use of public evaluation methods in the Netherlands is to a large extent filled by a varied selection of evaluation studies by private consultants. The underlying assumptions of these consultants, however, are generally ones that their customers agree with. Since both proponents and opponents of projects and alternatives make use of such studies to back up their demands and desires, turgid stalemates are the result, which seldom help answer questions related to reality and desirability. The well-known consultancy agency Moret, Ernst & Young evaluated the advisory practices for the southern High Speed Line for the Second Chamber and found that 145 reports had been made which together nevertheless failed to provide a complete picture. The documentation is organised, but not verified for consistency, completeness, clarity or quality. The cabinet's preference for a High Speed Rail route through what the

Dutch refer to as the country's Green Heart, otherwise referred to as the A1 variant, was less determined than it appeared, partially because the costs of management and maintenance of the infrastructure had not been taken into consideration in the decision. The cabinet plan also provided for 1.4 billion guilders in private financing which has yet to be found. If it turns out to be impossible to interest parties, this amount too will have to come from the government.

What was striking in the deliberation process about the High Speed Railway Line was the large role of private individuals in formulating alternatives. For example, in addition to the preferred route of the cabinet, there was an inexpensive 'TU variant' along existing railway lines with a station in the Hague. There was also a 'Bos variant' with a route along the A13 and A4 national highways and a stop in Ypenburg which did not cut through the Green Heart as much but did mean a certain loss in time.<sup>28</sup> After long deliberation and machination in the Second Chamber a choice was made for a very expensive and typically Dutch compromise: through the Green Heart after all, but with a tunnel.

The story of the Betuwe route has many parallels to that of the southern High Speed Rail Line, with the difference that external participation was kept extremely limited. According to Siddiqui a select group of Rotterdam dignitaries was the driving force behind all the preparations for the Betuwe line; these dignitaries have nestled into important decision-making positions and make grateful use of the weak lobby of the divided inland waterways (*Intermediair* 20 Dec 1996). In any case, no alternatives were developed.

The more than impressive number of conflicting studies about cost effectiveness exceeded even those for the High Speed Railway Line. Here again, there was no clarifying effect. The well-respected Central Planning Agency (*CPB*), generally seen as the economic think tank of the Netherlands, had the effrontery to suggest serious doubts about the advisability of the project and was called to task by a private competitor, Nyfer, in the following manner:

The Central Planning Agency uses a selection of the results of Knight Wendeling as input in the Athena Model. The Central Planning Agency includes in its calculations only the increase in added value of the transport sector and related supporting and service sectors. Knight Wendling, in turn, bases its calculations on transport prognoses made by the research agency Prognos. The mobility scenario of Prognos for Europe is the basis of these transport prognoses. An interesting detail is that this scenario was drawn up before the fall of the Berlin Wall. Given the fact that such prognoses change with the rapid, far-reaching fluctuations in European politics and economies, the signposts for the future appear to be built on a small parcel of quicksand (Nyfer 1995: 58).

The way in which Nyfer defends its own opinion concerning the mega-project for the Rotterdam Port Authority (*GHR*) is no more convincing. There is an unproved causal connection behind the calculations between investment in large-scale

infrastructure and macro-economic growth in a few decades. This is illustrated by 19th century examples in which a connection is made between expansion in and around the Rotterdam and Amsterdam ports and the position of the Dutch economy after a given amount of time.

Since in the case of the Betuwe line there was only one alternative that was worked on, the question of desirability has continued to be treated as a one-dimensional yes/no choice. Criticism of the specific form of the project quickly came to mean criticism of the Betuwe route as such. The Netherlands has a unique re-evaluation culture: when a decision has been made, it is not fixed (*NEI* 1994: 26). Thus, resistance could only be met with generous environment friendly implementation measures which ultimately made the railway line four times as expensive as originally projected. The final, definitive approval was finally given after a report from the Hermans Commission. This Commission recommended construction after an analysis of the available material, on condition that there be flanking policy which would charge freight transport on roads by means of price regulations.<sup>29</sup> The *ECIS* predicted in 1997 that the minimum total costs would be about 12.8 billion guilders (*ECIS* 1997:164). Although 3.4 billion of this was to come from private sources, there have been no seriously interested parties for the Betuwe Line.

Experience with private financing in the Netherlands has been based to date on 'shadow toll constructions' and has been less than positive. In the case of the *Wijker Tunnel* and the *Tunnel onder de Noord* the government accepted the non-cost effective share and the risks, private investors the secure share. Incorrect prognoses of the number of passing vehicles fell to the responsibility of the government. The disadvantage of private financing turned out to be that the financing costs for the government were higher than they would have been with government loans because private investors wanted a higher return. Contractors do not completely trust the government and fear that in a later stage, it will make use of its public law authority to undermine civil law agreements (Giebels 1993, *WRR* 1994). The furthering of a quick decision by means of private financing in this way turned out to be an extremely expensive solution.

One of the elements that the national government has run into in the decision-making process for both large and small projects is the resistance of lower governments to intrusion of their territory and the success they achieve in forcing integration. Tegelaar (1993) and the Scientific Council for Governmental Policy (*WRR* 1994, 1998) indicate the tension between the decentralised Physical Planning Act and the centralist sector legislation. In combination with the almost total lack of funds of lower governments, this leads to a reactive - and to a certain extent parasitical - behaviour on the part of municipalities. They are not allowed to carry out projects independently, rather must submit all financial claims to the central government. This has not furthered an economical use of public funds in the construction of the Amsterdam North-South line or the tram tunnel in The Hague.

There is also an increasing tendency in the national government to develop even more centralised sector legislation and to become involved with local details in zoning plans. Involvement of private citizens and the needs of interest groups and lower governments to participate in consultation about the essential desirability and practical implementation of projects is seen as NIMBY resistance and sabotage. To a great extent this turns the current public consultation procedures into obnoxious routine because the key decisions have already been made previously by a small group of people. The logical thought that whoever pays also decides is somewhat deceptive for the Ministry of Transport, Public Works & Water Management: other policy instruments are needed to be able to carry out infrastructure projects on time, and a dominant attitude is not beneficial for winning the sympathy of those who have complementary policy instruments. The strengthening of legislation and weakening of the legal position of these partners is much too simplistic a response to mutual dependency of government and social parties (Wolsink 1993). The approach of cutting public consultation and appeal procedures even more by means of modifications to the *Tracéwet* (Route Act) and new *ad hoc* regulations to force lower governments to comply as part of the national interest has not in the least disappeared, however. Nonetheless, the decentralised existing order established in the Physical Planning Act is under great pressure (WRR 1998).

In the last years it was decided that, after the advice of the Scientific Council for Governmental Policy was made known and the government had responded to this, large projects would be open to public opinion (open planning processes) from the very beginning to broaden support for this. However, it is still unclear how divergent opinions can be brought to consensus and what must be done in official decisions with the results of unofficial opinion.

Aside from dealing with procedural difficulties and achieving support for controversial projects, future integral evaluation in the Netherlands is confronted with a more recent but fascinating question. Starting a few years ago, the natural gas profits have been placed in the *Fonds Economische Structuurversterking* (FES, Fund for Structural Strengthening of the Economy) and earmarked for large infrastructure projects. But this fund is controlled by the full cabinet which turns out to be more responsive to other types of infrastructure than just transport. The Interdepartmental Commission to Strengthen Economic Structure (ICES) advises the cabinet on economic investment priorities and is made up of top officials from the ministries of Economic Affairs, Finances, Transport, Public Works & Water Management, Housing, Physical Planning & the Environment, and Agriculture & Fishing. This mixed composition has resulted in a broader concept of infrastructure in the past few years. The fund to strengthen economic structure has been opened up to infrastructure in the broad sense: it also includes nature, landscape, technology development and knowledge infrastructure. All ministries except for the

Finance Ministry submit wish lists about which they negotiate and which are intended to lead to creative investment packages.

It is still unclear which criteria will be used for these lists or whether blunt interdepartmental negotiation and political opportunism will prevail. Whatever the case, the share of ICES expenditures for regular Ministry of Transport, Public Works & Water Management will increase so that there will be considerable change in the area of 'integral evaluation of infrastructure'. It may lead to a situation in which a share of the investment funds which until recently were set aside for transport connections as part of 'Nederland - Distributienand' (a slogan promoted by a transport lobby group) will be devoted partially to other activities. It may also lead to a situation in which sectoral project financing which people had become accustomed to in evaluation will slowly become a thing of the past and will be replaced by interdepartmental packages (IPP 1998). In such a case, the future tendency will be an attunement between transport connections and other socio-economic activities in packages at the regional level (WRR 1998).

Table 5.1 ICES investments in the period 1998-2010, according to the:

Clusters of infrastructure projects to be funded	March 1998 Impulse letter	Alternative Proposal of the Foundation for Nature and the Environment (SN&M). <sup>30</sup>	Approved, 1996-1998	Coalition agreement 1998-2002
Access	11000 - 12500	12200	5191	15500
City vitality	3600 - 5000	5000	2197	4800
Environment	550	6000	3870	1800
Space/quality	2370 - 2870	5200	390	3000
Knowledge	2700	3300	178	3400
TOTAL	20220 - 23620	31700	11826	28500

Source: Instituut voor Politiek en Publiek (1998)

1. 'Accessibility' is made up of the items: 1) roads, 2) public transport, 3) system integration, 4) integration budget for roads, public transport and waterways, and 5) pay-as-you-drive.

2. 'City vitality' is made up of the items: 1) quality of life (fund), 2) key projects, 3) industrial estates, 4) soil decontamination, 5) local environmental intrusion, 6) monument protection, 7) urban renewal.
3. 'Environment' consists of the items: 1) river & lake bottom decontamination 2) greenhouse gases, 3) ecological modernisation of branches of industry, 4) environmental technology, 5) sustainable energy incentives and 6) other National Environmental Policy Plan - 3 options.
4. 'Space/quality' consists of the items: 1) wet nature, ecological main structure (EHS) and agrarian nature protection, 2) rural renewal, 3) reconstruction of the pork sector, and 4) biological agriculture.
5. 'Knowledge' consists of 1) technocentres/knowledge intensive economy, 2) research (knowledge and application, 3) ICT education, 4) reservation and 5) internet/exchange services.

## 5.5 Setting priorities in the UK: No pay, no cure

### *Deliberation procedures*

Integration of transport modes or the planning of infrastructure networks are not items on the political agenda in the UK; there is no such thing as a national traffic plan. The most important point of consideration in selecting infrastructure connections is demonstrable financial profitability of projects. The contribution of infrastructure to economic growth and other social objectives cannot be established by extensive traffic models, only by taking into consideration user demand. The traveller makes clear by means of payments and consumption whether there are benefits for the user, not governments by including benefits for the user or comfort as positive benefits for construction. The increase of property prices in an area determines what a road or railway is worth, not the estimate of the number of employment positions as a result of lower mobility prices. This demand-oriented point of view is applied by the Department of Transport (DoT) to all types of transport almost without exception; it does so by requiring schemes to be financed as much as possible by private money. Governments may take on the organisation of the process of attracting funds from backers, but the supply of large amounts of public money is a sensitive issue. Proposed projects from other governments or transport companies in which the financial role of the public sector is too large are systematically rejected. What London wants to see is that projects are carried out quickly, reliably, and affordably. The best way to do this is to turn over the whole project from planning to exploitation, that is to say, Design, Build, Finance and Operate (DBFO), to developers and construction firms, and to place formal responsibility for the process with one party. This primary contractor then has an interest in a speedy and inexpensive completion, and will be rewarded later with



income from tolls or on the basis of an agreed-upon formula related to the expected use of the connection.

Nonetheless, the DoT recognises that there are not only financial but also ecological interests at stake in infrastructure. For this reason, road and public transport projects financed by government or transport companies are evaluated by means of Cost-Benefit Analysis (COBA). The outcome of this evaluation method determines the ranking order of projects. The B/C ratio is established on the basis of three elements:

- 1) *Economic benefits* in the form of expected savings in time, improved safety and lowered exploitation costs as a result of the new connection.
- 2) *Ecological benefits* (positive or negative) that occur in human and natural environments as a result of the connection.
- 3) *The position of the connection* in the transport network as a whole.

It is striking that the DoT requires those who submit proposals for projects to calculate these three components completely by means of elasticity of demand and that they be monetarised; if this cannot be done by 'Revealed Preference' of the users, then by 'Stated Preference'. Any uncertainty can be clarified by sensitivity analyses. People submitting proposed projects cannot depend on any national funds if they do not conform to this calculation method. Since lower governments rarely have the necessary detailed information, they can make use of national traffic predictions. As far as safety and the living environment are concerned, the DoT is of the opinion that these effects are generally limited and there is so little local information available that use of its global standard approach 'COBA 9 Manual' is sufficient for the background of proposals.<sup>31</sup>

In 1994 the Department of the Environment (DoE) instigated what is known as Planning Policy Guidance 13. PPG13 intends to fight the disintegration of the country's inner cities, the fragmentation of public space, environmental deterioration and traffic unsafety. The intention is to achieve these objectives by only accepting project proposals from lower governments that minimise displacement need and that support public transport. The construction of facilities for pedestrians and cyclists are encouraged as part of this, and counties and districts are advised to develop important passenger and freight junctions to smooth transport flow and encourage the use of main roads for local purposes. Although this is only one set of advisory guidelines, it is an important addition to COBA which is not ignored by DoT.

The ideal profile of a project submitted by a lower government would look like this:

To be eligible for S56 grants, projects will need to represent a substantial addition or improvement to local transport facilities and will need to be large enough for it to be

reasonable that the costs should be spread beyond users and local charge payers. Examples might be major new capital investments such as a light rail system, particularly ones which contribute to the regeneration of city areas (DoT 1989: 7).

After being evaluated, the projects are placed in the following categories: 'Priority 1 schemes' which quickly reduce congestion; 'Priority 2 schemes' which have a long term duration and thus are placed on the reserve list; and 'Longer term schemes' which are postponed until future instructions. The projects ranked highest are included in a three year programme for as long as funds from London last. Normally, these ministerial programmes are placed in the annual budgets, but there is no guarantee, because these items are not binding for any government whatsoever.

The UK has three formal government bodies: the national government, counties and districts.<sup>32</sup> The central government controls the lion's share of the financial means. It devotes this money either to national infrastructure, in which case it comes into the hands of the Highway Agency which constructs the national motorways and trunk roads, or to local and regional infrastructure, the target group of which is the counties. The counties distribute the funds in turn among their districts. The principle for the financing of local infrastructure is that central government provides a maximum of 50%. There are ten Government Offices for the Regions which function as intermediaries between London and local authorities. There is one Government Office per planning region and its purpose is to offer advice to London. The Government Offices are a subdivision of the Department and are not allowed to make independent decisions.<sup>33</sup>

The implementation of the steps named above for infrastructure projects are given in the circular 'A step by step guide to trunk road planning'.

1. *Programme entry*: A scheme is added to a road programme if there are economic, ecological, or safety reasons for this. We discussed this phase above.
2. *Public consultation*: A document outlining options and possible consequences for individuals is published and distributed to relevant interested parties. Special interest organisations are invited to formulate a reaction to this. However, complete public consultation may be omitted if there is only one option. In such a case, this stage is passed over.
3. *Preferred route announcement*: The preferred route is presented by the initiator during an open meeting and discussed with interested parties.
4. *Draft statutory orders and/or environmental statement published and objections invited*: The provisional preferred route is announced based on the reactions

outlined under point 3. The initiator and responsible party for carrying out the project instructs lower governments to reserve space.

- 5 *Public Inquiry* if necessary: If the project initiator has not been able to resolve the objections of interested parties, there may be a Public Inquiry under the supervision of an independent inspector. This public inquiry is well announced and concentrates on the consequences for the environment and private property. Both interested parties and concerned individuals are welcome. The inspector sends his/her findings to the Secretaries of State of Transport and Environment.
- 6 *Decision announced and/or orders made*: All objections and comments of the independent inspector are considered by the Secretaries of Transport and Environment and form the basis of their ultimate decision (the Order). Persons who have expressed their objections are informed. The definitive decision to undertake construction is made by the Secretary of State of Transport in consultation with the Secretary of State of the Environment. Appeal about this to the High Court is only possible for individuals who have a clear interest.
- 7 *Land entry/acquisition*: expropriation and other preparatory measures.
- 8 *Construction starts/Road opens*.

Of these eight steps, the first three are recommended and the last six are required. This procedure has been used for a number of years for roads; it has only recently been introduced for railways.<sup>34</sup>

#### *Actual deliberation practice*

When market competition between transport modes and financial profitability are placed above transport or a broad social vision of infrastructure, costs receive much more attention from policy makers than benefits. The costs of the construction of infrastructure can be explained in figures much more easily. The private sector is better able to calculate investment risks and also to take them; it has had years of experience with this, after all. The monetary component of COBA can even be conducted by a private financier. All the central government as customer has to do is concentrate on proposals using a very simple measuring stick: the lowest price. Supplementary study, which the private sector has no interest in, the Environmental Impact Assessment (EIA) can be conducted by DoE. The role of the private sector in investments in road infrastructure is indeed considerable. For example, in the period 1988-1990, there were 58 modifications to the main network of motorways that were partially or totally financed by private funds. Tolls in particular make investment by private financiers profitable. To make this possible, the Highways Agency was privatised in 1984. It manages all the trunk roads and motorways in the UK, is allowed to levy tolls for the purposes of new

roads and organises the collection of private capital. It also evaluates DBFO proposals and has continued to expand a number of ongoing DBFO projects (ECIS 1996). It has proved possible sometimes to interest the private sector in investing in the construction of or improvements of roads, particularly in southern England.

The opinion that the network of main roads is as good as completed has, as a result, a steep decline in public funds for roads. Public involvement had been waning for a longer period, but was only recently turned into a change in financial policy. Already decades ago, the Transport Research Laboratory (TRL) indicated that the construction of new infrastructure created extra traffic streams, what is known as 'induced traffic'. The then COBA did not take this into account. The Special Advisory Commission on Trunk Roads Assessment (SACTRA) an authorised advisory body that publishes reports on the desirability of motorway construction, agreed with the TRL, but waited for an appropriate moment to express its opinion; in the 1980s, the automobile lobby did not have as much influence on the DoT. In 1993, when the government increasingly felt the pinch of lack of funds due to cutbacks and when various road projects came under fire from the environmental lobby, SACTRA used its authority to demonstrate that the use of the old model led to unacceptable results. It urged the DoT almost immediately to begin a methodical change; the need was felt to justify a drastic reduction in expenditures. The existing list of prioritised projects was re-evaluated based on the modified model, and greater consideration was given to the environment, safety and landscape. Forty-nine projects which had been previously selected disappeared to the reserve list, and nine new roads and less expensive by-passes appeared.

The railway infrastructure, which suffers from quite a bit of overdue maintenance was not able to profit from the reversal of the roads. The investment expenditures named in the three year programmes for the railway are to a great extent estimates of contributions from the private sector. Railtrack, which is in charge of infrastructure, will begin to charge commercial rates of the operators for use of the infrastructure. Such income can be used along with private funds for the construction of new railway lines.<sup>35</sup>

In only one case did this philosophy seem to work, namely the lucrative Heathrow Express Link, the connection to the largest airport in Europe. This line was constructed by the Heathrow Express Company (HEC), a joint venture of the British Airways Authority (BAA) and Railtrack. Railtrack supplied the new facilities in Paddington Station and the existing line, BAA paid for the new line and new trains. Upon completion, HEC Railtrack paid for entry to the railway line and tried to cover the costs completely through the sale of train tickets. The majority of the costs were incurred by BAA. In the case of the Channel Tunnel Rail Link (CTRL), the railway line between the canal tunnel and London, the approach was not

successful. It was initially intended to be financed completely by private parties; central government would only be involved in the choice of route and environmental norms. However, the necessary capital could not be found. When the CTRL was finally recognised by the EU as a TEN project, the government was willing to provide £1.4 of the 3 billion necessary because of the 'substantial benefits to the nation' of the project. Once these conditions had been created, a large consortium was able to be formed which maintains a concession for 999 years. In other projects as well, attracting private capital has proved to be no easy matter. In the renovation of the Second Severn Crossing of Wales to England, the private concession holder was allowed to collect all of the income from the adjacent real property and facilities to finance the capital expenditures. To carry out the modernisation of the West Coast Main Line (WCML) from London to Birmingham and Manchester to Glasgow, European and DoT money was once again necessary despite the vain hope of the British government that private funds would be sufficient.<sup>36</sup> If the roads suffered a dramatic reversal in investments, the railways have had difficulties for years and little change is seen in this. Most of the projects named above are still in the study phase, moreover, and funding is far from guaranteed.

The regional underground and tram networks also suffer chronic problems in most cases; in the past 30 years, there has been almost no investment aside from a few exceptions.<sup>37</sup> The London and South East Regional Planning Conference (SERPLAN) noted that 1993 was the year in which severe cutbacks for local governments began in earnest.

(...) it can be seen that overall an increasing proportion of total roads expenditure has been accounted for by motorway and trunk roads at the expense of local roads. Specifically, this trend appears to reflect greater amounts of expenditure going towards the construction of new motorway and trunk roads at the expense of local road maintenance (...) Greater Central Government control over local roads expenditure is also reflected by the increased emphasis on 'ring-fenced' expenditure. There has been a switch of resources away from the Annual Capital Guideline towards Supplementary Credit Approvals. The former allows local authorities to exercise discretion over how this money is spent on local roads and car parks. Conversely, the latter is a ring-fenced credit-approval that may be used only to help finance the scheme or purpose for which it was specifically given (1994:6-7).

The cutbacks after 1993 hit the lower levels of government hardest of all. Almost all local and regional infrastructure was constructed with money from London according to London criteria. By only accepting local proposals that corresponded to national criteria, London succeeded in creating a sort of divide and conquer situation in which lower governments became one another's competitors. In this competitive environment, there were a few winners and many who received

nothing. 'Bidders' were forced in this way to adopt the national approach to infrastructure if they wanted to carry out any project (Steer 1995: 203). In contrast to many other local governments, Blackburn Borough succeeded in having a great share of its bid accepted; in a county context it received a southern by-pass valued at £157 bln, two large motorways (Eastern Radial Route and Furthergate Link) and improvements for public transport. This success was primarily a result of the formulation of their bid in terms of private participation and improvement of the living environment in the inner city, which was in keeping with national policy analyses, and compliance with the instructions of the Government Offices for the North West. The DoT does not give away any presents, however: the national government offers a maximum of 50% funds for regional schemes, and any private or European contributions are deducted from the national, not the local share.

Investment expenditures in England are divided rather unequally among the various regions. In the early 1990s, the lion's share of the budget went to the South East due to the connection with the Channel Tunnel. In the north of England there is usually so little to distribute that most parties receive absolutely nothing. The organisation of effective lobbies, moreover, plays a decisive role in the ultimate assignment of funds. Districts with good connections and money for policy background studies lay claim to almost all of the funds in the long-range programmes. The Government Offices for the North West created a niche for itself as budget broker.<sup>38</sup> Despite its official subordination to DoT, it sometimes supports clearly regional preferences if they are not so unusual as to cause the agency to lose face. Making use of a considerably greater supply of information than either London or local governments as well as diplomatic skills, it is able to advise districts and counties which bids have a chance of being financed. The DoT is only prepared to accept projects from the region after on-going expenditure plans. If a local government wants to prevent infrastructure considered by London to be of strategic importance, such as a dual carriage motorway between London and Glasgow, they will have to negotiate with the Government Offices for years. An alternative preferred by the region, such as a regional by-pass of a highway next to an over-burdened district will have to be proposed long before the motorway appears on the expenditure plan.

A bottom-up counter-movement has developed against the centralised COBA in the South East. Counties in this region have noted that some of them have good roads and bad public transport and others just the opposite, and they have recognised their inter-dependency. By working together, they have established an intermodal package bid in a joint deliberation process which gives them a stronger position against London and means that they cannot be played off against one another when it comes to the distribution of budget funds.<sup>39</sup> Outside of the official

column of the DoT - Government Offices - County - District, SERPLAN plays an interesting role in the South East. SERPLAN is a co-operative group of local governments which has received an advisory role and acts as a catalyst in planning. Over the course of time, this agency has developed expertise in the field of urban planning and leads the shaping of ideas. SERPLAN memoranda indicated at an early stage the increasing importance of environmental costs related to transport and of a good regional organisation to offer resistance to DoT. Since the DoT has the feeling that it no longer receives important information in a normal manner from friendly government bodies, and the Government Offices for the South East do not have such information either, it often calls on SERPLAN to remain in the discussion. One of the motives of SERPLAN to enter into discussion with the DoT was to have the package bids accepted as a valid approach, and this intention has succeeded. The basis for the package approach was laid in the Integrated Transport Studies (ITS) that were carried out at the end of the 1980s and beginning of the 1990s in a few large cities in the UK. These studies did not simply take known transport developments from the past and extrapolate on them for the future; rather, they examined many different effects of the growth of mobility and put the relationship between settlement patterns and transport streams into a dynamic perspective (May 1991). ITS studied the effects of measures taken according to different urban planning groups, socio-economic groups, mode groups and operator-provider organisations. It also made a financial-economic evaluation that works with a 'do-minimum' (zero option); it portrays all additional measures as well as their costs both now and in the future. The strength of this is that the costs and benefits can be charted not only for each measure, but also for combinations of measures. These integral studies have made it possible for parties in the region to reflect on their own strategic objectives and to see their desires in that light. The united embrace of ITS has limited the application of COBA.

The objectives-led approach provides an opportunity for conurbations to analyse how best they can meet policy aims, and this may prove particularly valuable if (as seems likely) environmentally-driven targets become a feature of transport plans and policy making. But the coherence of thought implied by a package of measures does not lend itself well to a scheme-by-scheme appraisal, which is the established basis on which funding decisions are made. Funding agencies will no doubt continue to ask for a cost-benefit assessment of individual projects, but these appraisals do not answer the question inevitably posed by the package approach: what contribution to the overall strategy does this particular scheme or policy make? The aims of the overall strategy are not capable of expression in terms of quantified benefit-cost ratio targets. It follows then at the scheme, as well as strategy, level attempts will have to be made to develop new appraisal systems (Steer 1995: 204).

Although the DoT still attempts to impose COBA on integrated project proposals stemming from lower governments, after a few trial projects, prospects for the acceptance of package bids seem to be favourable. A composite package of measures makes it more difficult to determine earnings figures for each connection. Since the commitment of local governments is bound only to this package, it is not so easy to split off a part of it. The package has a fragile political equilibrium which the central government can get around in its evaluation only at the expense of great damage.

The fact that initiatives often come into being more or less *ad hoc* without there being any 'weighing' is not seen as a problem. The gap between the formal and informal circuit in the UK is by no means excessively large. The implementation of established priorities does not follow the 'Guide to trunk and road planning' because it is mandatory, but because it has turned out to be the most practical. The essential points to be taken into consideration given in the Guide are generally followed. The only politically interesting stages are the round of consultations at the beginning and the Public Inquiry. The inspector, who is appointed by the central government, acts independently and sets the agenda on his own. The initiator of the project takes on the role of advocate. He engages consultants who provide the financial, urban planning and environmental background and who must defend the policy proposals during public consultation. All interested parties have the right to comment on the plans which results in a broader discussion. After this step, the inspector writes up an advisory memorandum which is submitted to the DoE and the DoT, which cannot always suppress the inclination to continue to appoint new inspectors until the outcome is to their liking. When this happens, there are a number of Public Inquiries after one another, which is very time-consuming. Much time is also lost because the government or Parliament does not speak unequivocally about the need for infrastructure and the type of mode. Repeatedly during this stage, the question of the need of the project surfaces, although it was assumed that the matter had already been settled and only the exact route still needed to be considered. The construction of roads in particular runs into more and more active resistance from all layers of society. The fact that the DoT rejects compensation to lower governments for environmental damage because such damage has already been included in the deliberation method does not simplify the achievement of compromises. For this reason in recent times, many have chosen to head for the hills; the projects are completely abandoned.

Since the 1980s, a great number of road projects have been eligible for financing, and the railways have had to take a back seat. However, the state-financed road programme did not proceed all that smoothly, and the DoT budget as a result did not exhaust available funds. The Treasury drew the conclusion from this that infrastructure did not need all that much money. In 1994, 49 road projects were



removed from the expenditure plans; the further lowering of taxes remained welcome. The road construction programme was once again under pressure of increasing costs stemming from expropriation and environmental protests. There was not enough money and the money that was available was not spent due to insufficient progress in ongoing projects. An infrastructure vision that favours privatisation and profitability and does not have traffic objectives is not protected from budget cutbacks. The role of broadly-oriented traffic research for policy purposes has been radically dismantled. Twenty years ago, a central research agency such as the TRL was able to determine the DoT's agenda; it was involved in central policy issues and could present dilemmas at a strategic level. Nowadays, the TRL has been privatised and all policy advisors are evaluated for their willingness to follow the 'primacy of politics'. The disappearance of strategic vision means that infrastructure budgets are no longer immune from the number crunchers of the Treasury.

The three London airports, Heathrow, Gatwick and Stansted, all come under the privatised British Airport Authority and can pay for their expansion from core business and the rental of space to tax free shops. The advantages of scale are considerable. There is even enough money generated to construct the Heathrow Express Link. Difficulties have nothing to do with lack of funds, but with urban planning. Still, modes that cannot pay for themselves shrivel up. The collapse of investment in waterways has led to the abandonment of the environmentally friendly alternative of inland navigation. The railway network consists of economically flourishing sections and regions with a low infrastructure density. The policy of plucking financially attractive cherries from the tree does not lead to an integrated traffic network.

## 5.6. Setting priorities in the United States: A joint adventure

### *Deliberation procedures*

Since the federal government has a limited view of regional traffic issues, it is obliged to limit itself to the guidance of processes. The most important federal law concerning investment in infrastructure is called the Intermodal Surface Transportation Efficiency Act (ISTEA 1991, revised in 1997) which places great emphasis on the three Cs of Creativity, Credibility and Communication. The intention of the six year act is to broaden the focus of transport policy from a unimodal vision which only concentrates on mobility onto an intermodal and environmentally friendly vision; it attempts to do this by means of process norms. Ecological interests have been able to place themselves next to economic interests as a result of the stringent environmental norms of the Clean Air Act. The Department of Transportation (DoT) has translated this into the promotion of

congestion-pricing, telematics, nature area protection and intermodality; these are the spearheads of ISTEA.<sup>40</sup> The federal government has exchanged its specific objectives for a series of procedural demands and planning regulations that are coupled to the allocation of funds from the federal coffers to lower governments. The projects that it finances with ISTEA monies are subsequently included in the Surface Transportation Plan (STP). STP is converted into a Transportation Improvement Program (TIP) for programming purposes and has a duration of three to five years. It includes all of the selected projects to be financed by federal funds.

Responsibility for the physical construction of infrastructure is decentralised and rests with the states; the states in their turn delegate their authority to the Metropolitan Planning Organisations (MPOs). MPOs have a better view of relationships and connections between modes and can get regional parties around the table. Lower government acquires requested funds when it conforms to federal conditions and criteria for the submission of information. Top-down planning is replaced by bottom-up process planning, which is intended to permit greater creativity at the lower government level. These virtues are fleshed out primarily in a financial sense: federal budgets are cut back while maintaining the level of public service. The environmental norms in the Clean Air Act are translated into non-attainment areas, as they are called, where no harmful emissions are allowed, with the result that no roads may be constructed there.<sup>41</sup> The plausible argumentation behind federal policy is that decision-making about infrastructure must be placed at the 'right level' by means of decentralisation so that lower government can make its own decisions about monies that they dispose of themselves. Begging from the federal government and the forced spending of available money will be reduced by this. According to this line of reasoning, the expected added value of this approach is the creation of the balanced mix of federal, state and local monies, as well as loans from semi-public institutions and private banks, bonds, and possible other monies from private sources. Since different parties have money available at different moments during the course of the process, the phasing of financing is made as flexible as possible to respond to short term shortages. A small, one-off infusion of federal money is sufficient to induce the participation of others and to make it clear that infrastructure can be profitable. After this, there is a sort of flywheel effect in which the money that has been put into circulation can be used to carry out further projects.

Loans recycle federal funds again and again, allowing a simple grant to finance projects in perpetuity (DoT 1995: 15).

If states succeed in attracting private investors or in obtaining better bond percentages by means of flexible federal money, this can be done in the context of creative financing. States are allowed to accumulate federal money, if that works out, in funds; federal guarantees for state loans are also negotiable. The planning and research costs, however, are included in the project costs as extra stimulation to work efficiently.

There are few requirements for road project proposals submitted by states to Washington. The conditions illustrate the flexibility that is sought after:

- safety measures must be paid for from project costs,
- construction of new infrastructure must be paid for from the promised budget,
- it must be distributed evenly among various areas in the state,
- and after that the budget is totally free.

The earlier requirement that the federal share of the financing not exceed 50% per project has also been abandoned. The share per project may now be determined by the states up to a maximum of 80% per project. States take on a minimum of 20% plus any budget overruns. The objective of this is to further good business practices. The DoT is assisted in the evaluation of projects by the Office of Management Budget (OMB), a subdivision of the Treasury that places a premium on profitability issues.

There is also deregulation in the allocation of funds to cities, authorities and MPOs for public transport. A share of this money is distributed to areas with facilities for public transport, according to a fixed formula. Another share is discretionary. The distribution of the budget is as follows:

- new projects,
- modernisation of existing railway lines,
- buses and other public transport.

The federal government can attach strings to the allocation of funds in terms of the submitted analyses and the amount of the requested local contribution; the requirements are particularly stringent for non-attainment areas. Just as for the highways, the federal contribution to any public transport project is a maximum of 80% nowadays; this share may run up to 90% in the case of projects that are favourable for the environment.

The Department of Transportation has the ambition of completing the National Highway System (NHS) which is considered to be 98% finished. It consists of the interstate highways and a number of other access roads from east to west that are

considered to be of federal military logistical importance. The rest of the monies for road infrastructure is more for the state, regional or in some cases even local scale and is distributed to the states in the form of targeted package amounts.<sup>42</sup>

Since the interstate network is for the most part completed, there is an attempt to include the railway, waterways, ports, airports, bus connections and pipelines into the network. This would make it possible for a National Transportation System (NTS) to come into existence in which the emphasis would be on the modernisation of existing connections and the streamlining of the network by means of improved intermodal junctions. The first step to the realisation of the NTS is the information facility component in the Intermodal Management System (IMS), with which relevant information for the making of investment decisions could be produced. Basic information, maps, criteria and input would make it possible to generate objectives and ideal targets for the optimisation of intermodal efficiency.<sup>43</sup> The trend is to make more and more use of indicators and base figures to bring into focus innovative solutions to transport problems. Information systems would also be used to carry out need analyses, benefit-cost analyses and timetables to oversee the progress of construction and maintenance. The DoT develops strategic analysis methods such as HNNERS (Highway Network Economic Requirements System) and HERS (Highway Economic Requirements System), which can turn into ten year programmes for projects at the network level. HNNERS is at the top of the pyramid, and network effects can be calculated with it. Its results are used as input for HERS which offers guidance in the allocation of financial means. These are aids that work with basic data which can be regularly updated and can be used for different geographic areas and decision-making levels. The effects on employment are not an issue, rather economic profitability. The DoT does not require states to make use of methods for their background studies, but does strongly recommend it.

The DoT receives its money from the general funds and the National Trust Fund which is replenished with gasoline taxes. Needless to say, there are no strings attached to the general funds; the lion's share of the monies from the Trust Fund are intended for highways and a small share for public transport (regional transit, metropolitan transit, light rail, buses). The funds may not be spent on waterways or intercity rail. There is less flexibility for intermodal considerations in the Trust Fund; it has been determined by law that only 0.5 cent per gallon of gasoline may be spent on public transport, approximately 1/36 of the taxes.

States make state-wide transportation plans and programs and have a State Trust Fund which is replenished with gasoline taxes, just like the National Trust Fund. The State Trust Fund in California is called Flexible Congestion Relief (FCR). 50% of the money from this fund is turned over to the state itself which builds the intra-state highways and 50% to the MPOs which see to the regional infrastructure. The

state equivalent of the DoT in California is called Caltrans and that of OMB the California Transportation Commission (CTC). Formally, Caltrans and CTC supported the intermodal policy line of their federal brothers, but their faith in monetary studies for the deliberation of infrastructure projects is considerably less great. If the states have gained a great deal of freedom from Washington through ISTEA to construct highways, they are at the same time required by Washington to endure a stronger regional level regulation. These MPOs have been imposed everywhere; they develop instruments to make intermodal deliberations on the regional scale. The MPO is supposed to draw up a Metropolitan Transportation Plan and a Transportation Improvement Plan in co-operation with the state and transport companies; these plans include all of the proposed projects in the region that are submitted for funds. The plans should devote attention to such considerations as use of space, intermodal connections, methods to encourage the use of public transport and identification of user needs by means of a management system.

Federal and state legislation often compete and this is also the case with regional agencies. Federal legislation has MPOs, but California state law has Regional Transportation Planning Agencies (RTPAs) which must establish a Regional Transportation Plan and, based on this, a Transportation Improvement Plan. Federal MPOs do not always correspond with RTPAs, nor do their plans.

*Table 5.2 Regional agencies and their plans according to legislation*

Legislation	Federal law (ISTEA)	California State Law
<i>Mandatory regional traffic and transport agency</i>	Metropolitan Planning Organisation (MPO)	Regional Transportation Planning Agency (RTPA)
<i>Mandatory traffic and transport plan</i>	Metropolitan Transportation Plan	Regional Transportation Plan
<i>Mandatory traffic and transport program</i>	Transportation Improvement Program (1)	Transportation Improvement Program (2)

The Metropolitan Transportation Commission (MTC) in the San Francisco Bay Area happens to cover the same area as the federal and state legislation. The Commission was started as a service to carry out federal projects but has since found another appropriate task, as co-ordinator of the projects of others. In 1970, the MTC was included in California legislation to direct the use of California money for regional transport around the Bay. The official policy determination of the MTC is provided by 18 commissioners; 14 of these are directly appointed by

elected local officials, two other members represent other regional agencies, the Association of Bay Area Governments (ABAG)<sup>44</sup> and the Bay Conservation & Development Commission. Two non-voting members represent state and federal transport agencies. The MTC tries to advance intermodality with a 'Method of multi-model priority-setting for transportation projects' and in so doing directly responds to the wishes of Washington. The method consists of many criteria and points of particular interest. These include: increasing the efficiency of the transport system (for example with timely maintenance), integration of the regional transport system, improving junctions, improving the safety situation, invulnerability to earthquakes, reduction of congestion, cost effectiveness, soil use, energy savings, concern for the handicapped and modal shift. This list is by no means exhaustive. Projects are scored on all criteria by means of a point system; a project receives a certain number of points for every positive effect. The weight of the noted effects is also evaluated; the greater the weight of the effects, the higher the multiplier. After this, projects receive a total number of points and a place on the priority list.

All of the project proposals submitted by counties and districts are evaluated by the MTC on the basis of this policy analysis. The criteria were established in joint brainstorming sessions; the most important aspects were selected to be included in the deliberation model. This is why the hope exists that it will be generally applied and that no single project will reach programme stage without having gone through the critical test.

The Sacramento Council of Governments (SACOG) is also an MPO and RTPA at the same time, but has not yet been granted any special status in California legislation. This agency has operated in a different manner on the institutionalisation of a process of priority-setting; its method comprises the following procedural steps:

1. There is a meeting of SACOG with the Department of Public Works of the counties and districts in which their concept proposals are discussed. The mass transit managers, who are directors of public transport companies, are also present at these meetings.
2. The submitted project proposals are analysed by SACOG.
3. SACOG obtains information from the Congestion Management Agency of each county which monitors the urban planning, environmental and housing aspects and regularly organises surveys about traffic developments. This construction was created in the past after a petition of 100,000 citizens voted it in; later it was institutionalised.

4. A priority list is drawn up on the basis of this. It is sent around after which there are open meetings with the public, pressure groups and counties. Finally, SACOG establishes the definitive list of projects to be financed.

#### *Actual deliberation practice*

All projects that are to be carried out with federal support are included in the Surface Transportation Plan. In spite of the fact that, according to the official computations, the National Highway System is almost completed, there is still more than \$20 billion reserved for this in ISTEA. Many lower governments complain about the lack of financial means but this problem barely touches the Federal Highway Administration (FHWA), the old department of the DoT. The National Trust Fund from which it obtains its funds, has a positive reserve of about \$15 billion.<sup>45</sup> But all that glimmers is not gold. Since the states increasingly resist (and with increasing success) federal involvement in their affairs, they have succeeded in reducing the rich evaluators of their investment programs to simple intermediaries who provide large sums of money and are allowed at most an advisory role. Application of the rules can be more flexible than ISTEA prescribes; the DoT is even prepared to raise its maximum share in their NHS to more than 80% if states demonstrate that they give complete priority to their State Highways. This generous federal support is known as 'in kind contribution'. The states are allowed to accumulate federal contributions to their projects in funds and to mix them with loans from other public and private organisations in co-financing constructions. Flexibility comes before control.

The highways, which are commonly referred to as 'dollar-chasing projects', absorb the major share of the budgets and do not reveal their percentages. In contrast, the Federal Transit Administration (FTA), finds itself in financial difficulties and cannot make use of funds from other agencies such as the Federal Aviation Administration (FAA) for its own purposes, given the fact that the funds from this are intended exclusively for airports and connections to airports which may only be used by passengers travelling in the direction of those airports. This is a claim the FTA cannot make with proposed railway connections in that direction. All monies that do not go to MPOs disappear into unimodal state budgets according to fixed distribution formulas. The 50/50 sharing for given areas is the only way to keep the states quiet, but hinders the DoT to a great extent in achieving its objectives.<sup>46</sup> The planning requirements place all sorts of formal conditions on lower governments to obtain federal funds. Analyses must be carried out, various criteria are verified, multiple alternatives are examined, etc. But here again, the actual deliberation process is more complex than in theory and regional officials have greater weight than federal officials. As long as the regional officials engage in creative calculating, are flexible in their argumentation and figures, their federal counterparts will

eventually stop saying no. The FTA is of the opinion that the evaluation of projects requires simple indicators such as 'incremental riders' and 'decremental time' which together reflect the essence of all that is involved in investment in public transport. Yet to everyone's surprise the official method continues to add calculation rules. There are extensive cost effectiveness analyses required for the acceptance of the project. On balance, this methodological strictness has done a great service to lifting the obscurity of the decision-making process and the lobby circuits related to it.

The FHWA has aligned itself strategically with the Office of the Management Budget (OMB) and has won its trust. The OMB is a sub-department of the Department of Finance and as such a proponent of conservative cost estimates and the intensive use of economic indicators. An example of this was the discount percentage of 8% on return of investment of two or three years ago which is sometimes followed by the states. The FHWA has followed the OMB in this financial focus, although it actually would prefer a longer period for the discount percentage to be able to make strategic deliberations. But the OMB is very close to the White House and a friendly bond with the White House also has its advantages. The OMB has become a great proponent of roads.<sup>47</sup> The FHWA has also come to give more attention to steering committees which organise open meetings in which proponents and opponents of projects can respond to one another. In addition to profitability figures, creativity in the financing sources is greatly prized and this results in varied complexes of public-private relations. Frequently, it is the public partners who are not all that concerned with profitability who carry the greatest risk bearing share of the investment, and the private partners, the supplementary share. In other cases it is the private parties who bear the risks but charge public parties high commissions for this. Public organisations have no qualms about putting on a private hat once in a while and sometimes they acquire private-public powers. The Bay Area Rapid Transit (BART), the system of automatically driven subways around San Francisco, has succeeded in closing financial gaps by means of consultancy work in Egypt and Argentina.<sup>48</sup> State Infrastructure Banks (SIBs) are also set up which receive an annual \$2 billion federal seed money to trigger other sources. There is not such a watershed between public and private realms as in England, rather a sort of osmosis and pragmatic mutual supplementation.

All infrastructure is owned privately except for many roads, railway lines for local public passenger transport and ports.<sup>49</sup> Thus, it is not surprising that investment in infrastructure normally follows demand, and that the only projects that are initiated are ones to solve concrete problems. Those who participate in decision-making appreciate good business practices in which the blending of well understood self-interest results in joint projects. Areas that have a certain tradition of public



transport such as San Francisco develop a traffic system made up of a network of various lines, each of which is run by separate operators. The lines have transfer points which have not come into being in an integral fashion but through 'co-ordination without hierarchy' (Chisholm 1989). Connections between modes, standardisation and the optimisation of networks is a long term matter. The institutional structure of many small organisations which are oriented to clear profitability and customer demand practically only allows infrastructure for financially profitable transport. The growing role of private ownership, which can be explained as the public's unwillingness to pay taxes, is also seen in the increased use of toll roads. Although there are still many highways included in state-wide transportation plans, there is also an undeniable tendency to pay for new roads from the income of tolls and to leave the financing and construction to toll authorities. The toll authorities bring together banks, shareholders, project developers and contractors; they manage the construction, maintenance and running of road infrastructure. The toll authorities are the owners of roads, bridges and tunnels, but normally they lease these for a few decades to the states with the intention of disposing of them after an established period. Recent experience with complete private financing has not been all that positive. The Dulles Toll Road is an example; it attracted far fewer customers than had been expected and the toll had to be reduced. Income often is disappointing and investors have become risk-shy. The interest in public guarantees has grown since it became clear that private financing does not pay. To alleviate the problems of toll authorities, some governments allow them to bring out tax free bonds and help State Infrastructure Banks with gifts and loans from ISTEA. The optimum financing mix does not exist; it depends on current prices and opportunities and on when and who can contribute something and is willing to contribute something. More and more, the federal government considers it to be its job to restrict itself to providing projects with the first push and to jump in at difficult moments. The beginning stage is often the most difficult one in which to arrange private funds because construction risks, environmental compensation and implementation costs cannot be accurately estimated at that point. An attempt is made to achieve flexible phasing of federal financing, variable percentages of federal financing and private pre or post-financing to increase the progress tempo or to offer private investors guarantees. The hope is that they can then find the rest themselves.<sup>50</sup>

The more stringent environmental norms in the Clean Air Act turn out to be harsh in application, because the construction of infrastructure in non-attainment areas is quite simply prohibited. Consequently, the federal brain behind this, the Environmental Protection Agency (EPA), is not very popular with builders in the states. The inability to invest in roads to relieve the congestion around large cities, as sensitive to smog as they may be, is experienced as a sudden and unpleasant

change. At the moment, parties in the region are trying to get around the situation by building new roads around the non-attainment areas, but as a result of the environmental norms there are more and more delays, and dissatisfaction is high.

For every \$1.5 billion that the state of California receives annually from Washington, about \$1 billion is retained by the state itself and \$0.5 billion goes to the regions.<sup>51</sup> Caltrans uses infrastructure funds primarily for the construction of roads, and does not appreciate the federal plan requirements. Data are not available and criteria for different projects cannot be compared, much less criteria for different modes. Cost estimates are important, of course, and can in the worst case get out of hand, but benefits are such an amorphous category and studies can be used to demonstrate the desirability of any investment project. For this reason, Caltrans works only with territorial distribution formulas and draws a legal boundary between north and south California. It uses a fixed distribution formula in this: the North receive 40% of funds for roads and the South 60%. There is also the agreement that 70% of the funds is distributed according to fixed formulas and only 30% is available for intermodal consideration. Despite Caltrans' aversion to using evaluation methods, this prohibition is not always strictly followed, as the following example will indicate.

Caltrans had used an inflation estimate of 1% for a number of years, and on the basis of that figure had made a great many promises. Engineers had been engaged, had come up with ideas, listened to social needs and thought up constructions. Despite the fact that the economic predictions soon were seen as unrealistic, the plans were held onto for as long as possible and the Caltrans engineers could not be persuaded to modify them. That is to say, until the storm was at the door and there was only time for manipulative crisis politics. The state legislature wanted to be free of the projects and desperately needed a reason to explain the necessity. Contrary to normal habits, special modified benefit/cost analyses were pulled out of the drawer and applied to 67 projects. The predictable result was the elimination of a large number of the projects.

Engineers who have lost their heart to a certain alternative for traffic engineering reasons are capable of not only bringing analyses to light, but also of making them disappear. For example, there is a road, Highway 1, close to Monterey, between San Francisco and Los Angeles. This road leads to the spread-out coastal town of Carmel where the well-to-do take up residence during the summer. Highway 1 has become the busiest and most congested highway in California and needs to be expanded. Two options were developed to relieve the increasing pressure. Since estimates were that the same problem would reoccur in ten to fifteen years, Caltrans had given the alternative a B/C ratio of 1.6. Another possibility was to construct a highway through a mountainous nature area along the coast where the

unique Monterey pine trees are found, as well as a series of wildflowers and a rare type of frog. Execution of this option would be a definitive solution which is why it received the attractive B/C ratio of 2.2. This did not make the option a shoe-in, however; there were other factors that played a role. The value of the nature and environmental aspects had not been taken into account. Even more important, the well-to-do population that lived along the proposed route was adamantly opposed to the project and flexed their muscles. They did not want to have their view of the hills ruined by broad four-lane highways; they worked up public opinion and played an activist's role at open information hearings. This alternative had been the one preferred by Caltrans for years. There is a federal regulation, however, that if a nature area with endangered flora and fauna is involved, roads may only be constructed if there is really no other alternative. In the context of this regulation, the analyses which had been carried out were a clear handicap, if only because they indicated the existence of an alternative. By putting its calculations in the bottom of the drawer and continuing to insist on the new road, Caltrans tried in vain to shout down the opposition. To this date the resistance of a small group of influential wealthy people and the nature movement has not been broken up. There is still no certainty about the future despite the pressure of the mayor of Carmel, Clint Eastwood, who desires clarity about the prospects for his city.

Public agencies do not have a monopoly on the instrumental use of benefit/cost analyses, however. Private parties in and around the port of Los Angeles thought there was a pressing need for a railway connection between the port and the hinterland. This connection was estimated at a cost of about \$1.8 billion. All of the interested parties jointly engaged an agency which was charged with calculating the profitability of such a line. The B/C ratio of this came to 20.5. That attractive figure triggered the suspicion of one of the counties involved which would have to bear a large share of the costs and for that reason during the coming 20 years would have little opportunity to turn to other social needs. It had Caltrans carry out a second opinion which surprisingly enough resulted in a B/C ratio of 1.3. Caltrans stated in a report that it was 'not in favour of' the project and since that time the impetus for the investment has died down.

There is not really a fixed process by which plans and programmes are drawn up. It often begins with the announcement of the budget framework by the CTC and Caltrans on which they themselves base their estimates of costs for projects that are of interest to the state and on which the regions base their estimates for regional projects. These projects sometimes coincide. The regions are a very heterogeneous group because they sometimes coincide with the federal MPOs, sometimes make up a single county and in other cases consist of a number of counties.<sup>52</sup> They submit their plans and programmes for financing and work out the details of their

wishes with Caltrans. Caltrans distributes the funds then on the basis of geographic norms, its own insight and the insight of regions. The way in which these processes unfold is different for each case. The California Transportation Commission (CTC) is appointed by the governor and fills the role of intermediary between the legislature and Caltrans. It is this powerful agency in particular that insists on the territorial distribution formulas for the regions which it does to hold down political arguments, sometimes against the wish of Caltrans. It also tries to set up packages of investment projects in a more flexible way and is more sensitive to arguments of the MTC which finds the rules a hindrance to intermodality.

In the Bay Area, the MTC has grown into a director who has put into motion a continual process of social opinion-forming among local partners. After a lengthy start-up phase, its interactive approach has found much support. But once again, participating counties shrink from complete freedom when it comes to process results. They pushed the state legislature to guarantee that they would receive a return of 85% to 115% of their contributions to regional investment programmes, and did indeed receive that guarantee. This far-reaching limitation of the MTC's freedom of movement prevents the creation of larger projects and fundamental policy changes.<sup>53</sup>

Although BART is a large player in regional transport, it is only a small one in the regional negotiation circuit. BART has received \$15 million from MTC of a total budget of \$440 million for the expansion of the metro line to San Francisco which has been in the regional planning for more than ten years; most of this money comes from the federal government. When projects have the inclination to take up too much money for certain counties, they are systematically nipped in the bud. This approach of trying to do a little bit of everything is necessary if the continued support of the participators in the negotiation process is to be maintained, still the MTC is often reproached of 'Balkanisation', of dividing up funds in such a way that only mini-projects are carried out.<sup>54</sup> The size of the MTC budget for the coming five years (\$13.5 billion, 30% of which comes from Washington, 20% from Sacramento and 50% from the counties) incorrectly suggests that there is a possibility of developing large projects. Specific limitations make this impossible.

The MTC tries in many ways to get around the established distribution rules. It has three different project lists, for example, which officially are funded from other sources. There is the intermodal list for projects that are supposed to be jointly financed by federal, state and to a certain extent by local and regional money. There is an Enhancement list which is intended to increase the aesthetic experience of transport. And there is a CMAQ list for funds stemming from the EPA, which invests dollars into environmentally-friendly projects. There are supposed to be different criteria and planning requirements for each list, and projects can be assigned to lists if they meet the imposed requirements. The EPA, for example, is

allowed to finance projects that it is interested in itself, and the MTC keeps as much money as possible for projects it can determine itself. This shifting has not been without problems. The coupling of the Intermodal programme to the Enhancement programme was rather experimental. The idea of including the development of historical monuments, aesthetic environments and works of art in deliberations about infrastructure is not only striking, it is also conceptually difficult. An attempt has been made to open up the process to as many parties as possible and to maximise the number of links between problems and solutions. Even though there are limits to such links, the MTC wants to examine those limits. Politicians, it must be said, find the whole matter rather complicated.

It took time to win over the other parties to the idea of the Enhancement Program. When it was still in its early phase, it was not allowed to be mixed with the Intermodal Program. There were too many competitors in the field and consequently it was kept low profile. The danger from parties outside of the MTC partners was great, because their criticism could have put an end not only to the Enhancement Program, but to the total evaluation system. The CTC was not pleased with the fact that only 10% of the investment from the Enhancement Program was earmarked for roads, but saw no chance of opposing this because the proposals included a BART connection to the airport, which was undeniably an important transport objective. Since 1993, the criteria have been gradually further developed and the process has become more open. Slowly but surely, participants have gained more trust in one another and in the MTC and their desires have come closer together.

... in pursuing its own purposes the MTC had used its resources to cajole or coerce Bay Area transit agencies into adopting standardized auditing-accounting procedures. Standardization reduces information collection and evaluation costs for the MTC without providing any direct benefits to the operators... Coordination solutions with these characteristics are unlikely to be pursued by the operators on their own initiatives. In this particular case, they agreed to coordinate because of the implied threat that funds (on which they depend) administered by MTC might be withdrawn (Chisholm 1989: 150, 156).

Without the MTC, a number of crucial connections between lines of different transport companies would probably have not come into existence.

The evaluation criteria that have been accepted for the intermodal decision-making structure in the Bay Area has provided a sort of glue which keeps the family quite close together. The MTC profits from this, and Caltrans has now also discovered the advantages a partnership can offer. A project that Caltrans was interested in, the widening of Highway 880, had been on ice for some time due to lack of funds. The

network of regional authorities, which is capable of bringing together the most varied problems and solutions, has been called in to get that process moving again. On the other hand, the partnership is sometimes also placed under pressure as a result of sudden reversals. In Santa Clara County, for example, the sales tax which the county used to partially fund its own projects, was suddenly withdrawn. The voters of the county insisted on a referendum about the tax with the result that it ended up in the rubbish bin. Other MTC participants had to pitch in a share to cover this reversal, and that put pressure on the relationships. Nonetheless, the collective disappointment about the Santa Clara drama and the willingness to take on financial responsibility is characteristic of the solidarity of MTC partners.

It seems as if ISTEA is beginning to have some effect in strengthening the MPOs; but most of them, just like SACOG, still have to fight for their position. At the moment, SACOG has ten representatives with voting rights: four from each county and six from cities. Sacramento City's vote, however, counts as two and Sacramento County's as three, thus there is a total of 13 votes. This distribution of votes was preceded by a spirited political game; this is a typical example of how institutional relationships are placed below practical questions and how vulnerable SACOG's position still is.

In the time that all votes counted as one, there was a soundwall for Sacramento on the priority list. Making use of the voting balance, a number of county councillors were able to place this wall lower on the list in favour of a road that they wanted to build; they were supported by other counties in this. Sacramento City and County were unable to block this move given the existing voting balance and threatened to leave the RTPA. Another party that was interested in the highway, Yaho County, was so concerned about the consequences of the dissolution of SACOG that it wanted to reconcile the Sacramentos. The intention was to make the voting balance such that Sacramento City's vote would count as two and Sacramento County's as three. This was a proposal that received the blessing of the California legislature. Placer County, which is predominantly a farming area with a few small towns, could not accept this new situation. Placer distrusted the urban power of Sacramento and decided to leave SACOG. The County set up its own MPO consisting solely of Placer County and called the Placer County Planning Commission (PCPC), a construction that shows up now and again. In this commission, however, the five towns felt placed at a disadvantage by the power of agricultural interests. They put a well known senator to work to change the State law so that each of the towns was given one vote and the county only two. Three of the towns decided to rejoin SACOG so that they had a double RTPA membership: one with PCMC and one with SACOG. This was a clever move which makes it possible for them to benefit from both commissions and if necessary to play SACOG and PCMC off against one another. SACOG is still

watching for the opportunity to re-establish its co-ordinating role over Placer County and also to take the nearby El Dorado County into its fold, but has little opportunity of doing so as long as there is a senior senator from Placer County in the State Senate.<sup>55</sup>

The involvement of citizens and pressure groups in making decisions about infrastructure is great in the U.S. as is their influence. There are a number of reasons for this:

1. Citizens have direct contact with their councillors and knock on their doors whenever their interests are placed in jeopardy. They let themselves be heard in the frequently organised hearings and they are not so quick to trust official figures on economic and ecological results of infrastructure. Since councillors are directly elected, it will do nothing for their image if they are distant. A Citizen's Group led by the wife of a senator was concerned that all of San Francisco Bay would be built up and the wetlands would disappear. This group has been given the status of public organisation by State law. The environmental pressure group started out with a fierce opposition to the dumping of landfill in the Bay, but since has expanded its concern and now carries the name of Bay Conservation & Development Commission (BCDC). It is authorised to assign land to the Port of Oakland. This new authority means that the Commission has a great impact on the future of the port. Just a few years ago, the port was allowed to use extra land for its own development without offering any compensation. Later, when it was up to BCDC to issue permits, this was only allowed under stringent compensation conditions. Since that time, BCDC has decided that the coast has enough industry and recreation and it no longer grants permits for anything.
2. Politicians and authorities make use of the input from citizens to extend the number of options, and experience this as a positive thing. They believe that the Environmental Impact Report (EIR) which is required by the California Environmental Protection Act, should in fact include all potentially constructive input. A large number of alternatives should be considered on two levels, that of general plans and that of concrete projects. Even if an EIR is not required but there might be nature effects, the initiator of the project sends a memorandum to anyone who might possibly be involved and just for safety's sake has an EIR prepared. Whenever there is any damage to nature, compensation is required in the form of new parks. It must also be possible to prove that there is no alternative. If citizens feel they are not taken seriously, they move to the courtrooms where lawyers are capable of stopping a great deal of infrastructure development. All of this forces communication with the public during the deliberation process.

3. Governments are not required to put referenda before the people but citizens are free to organise propositions to be voted on about all kinds of matters. If these propositions are approved by vote, they acquire the status of law and are recognized in court. The propositions can have far-reaching consequences, as the case of Santa Clara County demonstrates. The County had imposed a limited property tax for the purposes of financing infrastructure. Voters submitted Proposition 13, which opposed the validity of this taxation. The anti-tax proposition was then approved by vote whereupon the County asked the court to decide whether the organisation of referenda on such tax issues was in fact permissible. Lower courts considered the proposition to be unconstitutional and threw it out. However, the California Supreme Court was not only of the opinion that the proposition was appropriate, but that the principle on which it was based, that infrastructure may only be financed by targeted taxation and not by an increase in property taxes, was also applicable to an already existing sales tax, a share of which was devoted to infrastructure. The authors of the proposition wrote another letter in which they indicated that the proposition was not at all intended to effect the other issue but that was to no avail. In some cases, the courts are more inclined to politics than to jurisprudence.

People with a good reputation and creative ideas benefit from this system. Rules can be passed by, demonstrators can be bought and images are improved by marketing and hearings. The process is open, flexible and democratic, but most importantly, it works for the benefit of competent citizens. Representatives in the United States are tending to crawl into their shells. Government representatives or agencies are increasingly given a free hand to negotiate with individuals and where necessary to make commitments to them. Toll authorities are not bound to answer to any representative. Direct democracy with *ad hoc* contacts flourish in an atmosphere where creativity, flexibility and functionality predominate. Indirect democratic agencies are not capable of responding to individual requests and have difficulty convincing the American people of their right to exist.

#### 5.7. Setting priorities in France: *Vive la complicité!* ('Long live complicity'!)

##### *Deliberation procedures*

Long-term investment planning is not intermodal in France; rather, it is sectoral. The *Schémas Directeurs d'Infrastructures et de Transports* (SDIT, Guiding Plans for Infrastructure and Transport) describe which transport connections are to be made in the coming 20 years. In 1996 there were two recent plans:



1. A plan for the expansion of the network of High Speed Trains (TGV). There are no plans to extend the traditional railway network.
2. A plan for the extension of a number of motorways and major roads.<sup>56</sup>

The last SDIT in the area of waterways dates from 1984; the priority attributed to it is not very great. The need for new connections is based on planning norms in the *Loi sur l'Aménagement du Territoire* (Loi Pasqua, National Physical Development Act). This act brings together physical planning and transport policy and has two main objectives:

1. *Gradual regional distribution.* To prevent population flight from economically weaker regions in France and also to keep Paris and the surrounding areas (Ile de France) from becoming even more hopelessly full, investment policy is based on the principle of equality and decentralisation. Infrastructure is one of the ways to further equal economic development. This objective is seen in the requirement that every spot in France should have a good connection to the infrastructural network. The maximum distance to a motorway or high speed train is set at 50 km or 45 minutes driving time.
2. *Increasing intermodality.* Since the negative effects of private transport to the environment are known, it is necessary to strengthen the position of the railways and the terminals that connect them to other modes. The *Fonds d'Investissements des infrastructures* (Infrastructure Investment Fund) which holds the funds for all types of transport allows policy makers to move priorities from one mode to another.

All of the connections given in the SDITs are expected to reflect the Pasqua Act. The way this is supposed to be done is outlined in the *Loi d'Orientation sur les Transports Intérieurs* (LOTI, Interior Transport Act). They are selected in a deliberation and negotiation process between the national Ministry of Equipment, Transport and Tourism (METT) and the regional boards. Input for these discussions comes from predictions concerning transport needs on the main lines of the French network. In the case of railways, a social return norm of 8% is used for projects, calculated for a period which starts with the first year of the investment to 20 years after the infrastructure has been operational. An attempt is also made to turn all ecological and safety effects into monetary terms so that an unambiguous outcome can be determined. A clear benefit/cost outcome is also sought for the waterways. It is only for the road sector that multi-criteria analyses are used.<sup>57</sup>

After agreement has been reached in the SDITs about the projects that are desired, it is approved by the National Assembly. The precise date and the sequence in

which the connections will be constructed is not determined by the plans. Next, some of the projects in the guiding plan are considered in financial agreements made between governments. The *Contrats de plan* (Plan Contracts) cover this tactical level of decision-making. The State and the Region commit themselves in these Plan Contracts for a period of five years. Since the Minister of Transport was given a blank check by the SDIT, the Assembly remains on the sidelines.

At the beginning of the decision-making process for an individual project, there is a preliminary debate. This is an institutionalised debate between various governments and pressure groups that takes place before any official decision is made. It was introduced after the publication of the *Mission-Carrère* report in 1992, which intended to render decision-making more moder and open to the public. The preliminary debate is intended to prevent any later conflict over pressing questions because these would have been negotiated away before the official decisions. Previously, this problem did occur during the execution phase of the route studies and blocked progress. The organisation of the debate, just like the following phases, is in the hands of the Ministry of Equipment, Transport and Tourism.

After this has been completed, the route determination phase can begin, which is made up of the following steps (Kolpron 1993):

1. *Etude préliminaire* (Preliminary Study). In this phase, a preliminary study is made for a project that is included in the *Schéma Directeur*. This is done on the basis of an area study for a width of 10-20 km. A catalogue is made of the civil engineering, economic and environmental options. Next, making use of expert analyses, a number of route variants can be made for a width of one kilometre. This phase ends with ministerial decision for a route in a width of one kilometre.
2. *Avant Projet Sommaire* (APS, Pre-project Summary). The route that has been chosen is worked out in greater detail. Once again, a catalogue is made of the technical and economic possibilities. Next, a number of variants are studied for a width of 300 metres. Officials consult with diverse experts. In some cases, there is also public consultation during this phase.
3. *Enquête publique* (Public inquiry). The following items occur during this phase: (1) An environmental impact report, (2) A socio-economic study and (3) Public consultation. The environmental impact report is not all that detailed and only occurs during this phase. All remarks are noted by an investigator who writes a report about his findings. This report is concluded with a final evaluation of the project (positive or not positive). The public consultation period lasts about a month. The Public inquiry reveals all of the relevant impacts of the chosen route on the area and considers which property owners will be prejudiced.

4. *Déclaration d'Utilité publique* (DUP, Declaration of Public Interest). On the basis of the previous studies, the Prime Minister can approve the proposed route. This decision is called the Declaration of Public Interest. It functions as an expropriation permit and is the sign for the physical execution of the project. After the Declaration, it is still possible to carry out some changes by means of a 'Partial Inquiry', a modification of the main decision for a small area. The only possible opposition to the Declaration is a legal action submitted to the Administrative Tribunal, one of the main legal administrative authorities in the country. The length of time for such a legal action is approximately one year. The Declaration of Public Interest is valid for only five years; after that period it must be extended.
5. *Concession* (Approval). The license for the project is approved automatically after the Declaration.

Further details of the projects are worked out under the direction of private development companies: Phase 6, *Avant Projet* (Pre-project) and 7, *Réalisation* (Implementation). Division between decision-making and execution is quite clear in France. The State makes the decision and separate implementation organisations (SNCF, VNP and the SEMs) carry out the construction, maintenance and supervises the duration of the processes.<sup>58</sup> The SEMs are also free to take out loans on the capital market which are ultimately backed by the State. The implementation organisations of the railways and the waterways are legal monopolies. Motorways are mostly turned over on concession to the private organisations with the exception of unprofitable connections that are considered to be necessary for the continuity of the national network or the regional development of an area; these are carried out by the State itself.

#### *Actual deliberation process.*

The planning horizon for carrying out the most recent SDIT projects is the year 2015, twenty years after 1995. The State has determined that a number of the proposed projects will not be able to meet this deadline. The sequence of carrying out the proposed projects is not fixed, with the result that anything can happen when projects are taken out of the Schéma Directeur. They might just as well not end up in any Plan Contract. If projects are to be approved, it is essential that the lobbying channels remain open. It also often occurs that policy studies indicate that unanticipated lines are desirable and anticipated lines undesirable. The State and regions sometimes allow themselves to make investments outside of the SDIT or Plan Contract. In addition to the general Infrastructure Investment Fund (FII), there is also a Fund for Investment in Land Transport and Waterways (*Fonds d'Investissements des Transports Terrestres et des Voies Navigables*, FITTVN) that is filled with surcharges from the toll roads and charges on hydroelectric energy; these are

used for the construction and improvement of waterways and railways. This is not the only de-budgeting construction.<sup>59</sup> There are so many money streams that move back and forth between parties that it is too complicated to provide a general investment survey for France.

The financial position of the French State does not currently allow all intended projects to be carried out. At the moment, the focus is on the resolution of bottlenecks and the increased accessibility of France in Europe as a whole. A considerable contribution from the European Union is counted upon for the latter of these two. The SDITs show that there are new connections intended all over the country and certainly in less densely populated regions. Many important politicians and officials combine a national level function with a function in their local and regional home base; this furthers the equal distribution. Attention to intermodality, in contrast, seems to carry much less weight. Intermodality only receives attention if regional coverage is guaranteed, which keeps the margins very small. Each transport mode has its own lobbying circuits, own planning circuits and own financial programmes. As a consequence, almost no explicit choices are made between modes in terms of investment volume. Within the modes themselves, the focus is on optimisation of the unimodal transport network; financing proposals are formulated in the sectors. Evaluators of the proposals do not come directly from a specific organisation, but are a select group of politicians and high level bureaucrats in key positions of diverse organisations who know each other well from their studies at the Ecoles Supérieures. This political-bureaucratic elite has a strong technical or economic affinity and places stiff return requirements on investment projects. The 'State' does not finance new projects if the norms are not met, unless lower governments provide supplementary funds.

The rate of return of 8% used for railway infrastructure has a much more shaky basis in actual fact than the hard figure would suggest; it is more like a football in a power politics game. The norm was introduced by experts with a financial-economic orientation and has come to lead its own life. The significance of its use is not always clear: is it a matter of economic, financial-economic or social return and on what data are these calculations based? One of the reasons for the Ministry of Equipment, Transport and Tourism to hold onto this norm is to keep insistent regions and municipalities at arm's length or to force them to make a financial contribution themselves. The return figures appear to be the outcome rather than the ante of political agreement. The eastern high speed train, for example, yields an internal return of 4.3%, but the social return is 8.8%, a figure that nicely meets the norm. How the calculation of this is possible at the stage when the route has not yet been known and the effects on the environment have not yet been established - not to mention how it is that qualitative effects could be monetarised - is unclear.

The following table gives witness to how the concept of socio-economic return makes many high speed train connections profitable (Martinand 1994).

Table 5.3 Internal and social Rates of Return of all projected TGV links

Project	Internal RR	Social RR
TGV Aquitaine	7.6	10.0
TGV Auvergne	3.1	6.7
TGV Bretagne	7.4	13.6
TGV Est	4.3	8.8
TGV Grand-Sud	5.0	12.0
Interconnection sud	8.2	9.6
Interconnection Transalpine	6.0	10.0
TGV Limousin	2.4	4.4
TGV Provence	9.8	13.0
TGV Côte d'Azur	8.4	11.0
TGV Languedoc Roussillon	6.1	9.0
TGV Midi-Pyrénées	5.5	6.5
TGV Normandie	0.1	3.0
TGV Pays de la Loire	5.4	7.7
TGV Picardie	4.8	5.0
TGV Rhin-Rhone	5.9	10.7

What is understood by *internal return* is the relationship between the return on investment and the investment costs for construction and running of the high speed train line. Consequently, the 8% norm has only economic value. This original norm can be achieved on a route such as the TGV-Méditerranée which has been carried out and is the prototype and figurehead for other high speed train projects. A 'heavy stream' of railway transport can be made economically profitable for the long distance; many passenger kilometres are travelled in a short period of time. But this attractive starting position does not hold for many of the followers of this example. At a rate of return of 8% or higher, the railway company is considered to be able to pay back the cost of constructing the line over the long term; but the further a railway line slips underneath that figure, the more the State must contribute. The economic norm, consequently, has been 'socially broadened' to include employment, time gained, safety and the environment. Attempts are made to monetarise these various facets, to give them a visible place in the deliberation process (Boiteux 1994).<sup>60</sup> For political reasons, it is not surprising that benefit-cost analyses must be officially followed. Up until a short time ago the multi-criteria programme 'Electre' was commonly used at various government levels but it has fallen out of grace due to its fine distinctions, level of difficulty and lack of

unequivocal outcomes. Since that time, people in the regions have continued to use multi-criteria evaluations for charting territorial distribution aspects of infrastructure; the national benefit/cost balance sheet is silent about this aspect. Critics are of the opinion that the desirability of the TGV-Est which has been on the books since 1970, is questionable from almost all points of view. It is not part of the Trans-European Network (TEN) because the TGV stops in Strasbourg where the German ICE takes over, but without any good connections. It also is not necessary from the point of view of capacity growth because no spectacular growth is expected. To be able to push construction of the line, the European Union, the regions and large cities could make extra contributions. The success of the TGV-Méditerranée has started up a process that is hard to revert and that may provide a large number of connections which will probably turn out to be less successful.<sup>61</sup>

Dupuy characterised the relationship between governing parties in France as follows:

...No one can really take the initiative, even where his own affairs are concerned. Individuals only begin to act when they are given the green light. However, once this is given, the system has its own impetus and nothing can stop further individual initiatives. (...) Once central government in Paris gives them priority and grants funds the circumstances change, abruptly and absolutely. (...) Overproduction is the paradoxical consequence of this mechanism (Dupuy 1988,; 82, in: Dente & Kjellberg),

for

The line between politics and administration in France is singularly blurred because the lines between politicians and bureaucrats are often confused: it is perfectly possible for a member of a grand corps to be at the same time an active politician, a member of a cabinet and Mayor (roles which place him in some kind of political and administrative no-man's land). Often it is extremely difficult to discover how decisions are made (Aberbach *et al.* 1981: 250).

When interested parties have committed themselves and are part of the select group that initiates the process, opportunism and threats of abandoning the group are unforgivable. The train continues to move and has a great amount of inertia.

The relationship between policy and more broadly-oriented social studies is much weaker. The reality of decision-making is strongly concentrated in certain channels of people who know one another and who operate in closed circuits. It is not so much a matter of a concentration of power on the national level as a limited group of politicians and officials with technical and economic skills who have double

positions and sit like spiders in the middle of the decision-making web. The politicians among them are called the *Grands Élus*. We find the functionaries in a number of agencies, such as the *Conseil national des Transports* (National Transport Council) and the *Conseil Général des Ponts et Chaussées* (General Council of Bridges and Roads) which advise the Minister directly. Important people sometimes also succeed in having projects which were considered to be dead and which are not very popular in influential circles, put back on the agenda without loss of face. Ex-prime minister Raymond Barre (UDF) has become president of the *Compagnie Nationale du Rhône* (National Company of the Rhone) which wishes to construct the Rhine-Rhone Canal in cooperation with *Electricité de France* (EDF, the French Electricity Company); he is also chairman of the *Association Mer du Nord - Méditerranée* (North Sea - Mediterranean Sea Association). He has found the opportunity in the combination of these two positions to successfully promote the waterway connection of Rhine-Rhone which was mentioned in the obsolete SDIT of 1984 and for which a Declaration of Public Interest was granted without any deliberation. He is supported in this by the Pasqua Act which has indicated this project as one to be completed before 2010. According to the estimates of experts, the canal fees will not be able to cover even maintenance and running, much less the cost of construction or that any profitability norm would be reached. In addition to the fact that no one has ever seen a favourable report on the project, the environmental movement is also not happy. It sees this project as a greater threat to the railways than to road transport. Finally, the estimated costs continue to run up; in 1996 they were at FF 27.9 billion, not including the interest of FF 21.6 billion that will have to be paid later. The desirability of this waterway is arguable at best, but Barre cannot drop it. He will have to hurry with his pet project, because the validity of the licence expires on 30 June 1998. If, in accordance with the new procedures, a preliminary debate must be organised, the chances for the canal diminish considerably.<sup>62</sup>

The *Grands Élus* are normally elected as mayors of the large cities and can spread their influence from there to other government levels. These vertical lines stand them in good stead. For example, ex-premier Pierre Mauroy (PS), now mayor of Lille, was able through his personal contacts to create a stop on the Paris-Brussels line for his city within the city limits, even though that had not been initially planned. There was a similar situation with the Paris-Nancy line. The mayor of Reims also got a stop, which is very attractive for his home base, but not in the interests of the efficiency of the high speed train line. It must be said that Reims did not escape from the contribution of FF 100 million. The phenomenon of the *Grands Élus* makes the big cities an important factor. The innumerable small municipalities in France (about 30,000) are not capable of organising effective lobbies and must for the most part simply accept decisions (Tegelaar 1993: 53).

Every level of government has its own responsibility and thus officially the authority to determine its own infrastructure, but co-productions are found to be both legitimate and necessary. The plans for public transport in Paris and surrounding areas, for example, are financed by the State for about 50% and by the region for about 50%. Regions and departments have reasonably well-filled coffers and consequently there is a balance in the efforts of parties to develop infrastructure. Lower governments are also capable of constructive efforts. Some cities like Nantes, Grenoble and Strasbourg have started to install tram and underground systems for which local governments take on about half of the costs. It is this co-operative action based on equality among various government levels that has led to a revival of the fast tram in city agglomerations. The Plan Contract that the State must conclude with other parties is legally binding and provides guarantees to both parties. Lower governments, however, also take the initiative if the State does not support them. For example, when the State was not prepared to participate in the construction costs of the Normandy Bridge, the prime mover and responsible party for carrying out the project was the Chamber of Commerce of Le Havre which took out a loan of approximately 2 billion francs from French and European banks and was actively supported by a number of governments which provided financial guarantees: the Region of Upper Normandy (25%), and the *départements* of Calvados (25%), Eure (10%) and Seine Maritime (40%). A large share of the costs were also paid from the tolls on the Tancarville Bridge which is situated close by and forms the traffic complement to it. Le Havre had already stuck its neck out for this project in an earlier stage. It took more than two decades to convince the political and governmental authorities, but when official approval was given in 1986, during the period that Chirac was premier, all of the bureaucratic echelons were strong supporters and stood wholeheartedly behind the project initiated by lower governments.

The practice of secret diplomacy means that officials can keep the group that participates in the decision-making small and manageable. They don't want to have any changes halfway through or suddenly find their partners in the process to be disloyal. A long incubation period is used to gather a group of unconditionally loyal supporters and intimates. This group is not too large and includes all the relevant core people.<sup>63</sup>

After completion of this nebulous preparatory phase, the official process begins. Completion follows quite quickly. Despite the speed of decision-making that has been achieved by this method up until today, the environmental movement and private citizens have gained more of a voice in the past decade. Consequently, during the Public Inquiry there were more delays than usual and it occurred that the Declaration of Public Interest had to be granted several times even though this was considered to be the official start for implementation. Social groups assume that



information is only produced as support of projects and they have demanded more opportunities to examine calculations. This is why the preliminary debate has been implemented. It has considerably reduced the number of conflicts with pressure groups in the determination of routes for the high speed trains. It was an attempt to co-opt all important interests at an early stage. The planning of the TGV-Méditerranée does not yet benefit from the new regulation, but a special provision has been arranged that serves as an example of how such an open discussion is organised. The discussion platform about this connection consists of two separate but linked forums:

1. A *Comité de suivi* (Examination committee) that consists of representatives of the State, regional and local governments and Associations (various private groups). It is the political pole of the debate in which potential points of conflict are discussed. The committee commissions analyses and second opinions.
2. A *Collège des Experts* (Board of experts) that carries out studies on behalf of the committee on various relevant aspects of the project.<sup>64</sup> Their composition is determined by the committee.

This broader approach is generally seen as constructive. There is serious experimentation with the procedural organisation of second opinions to examine whether complaints about the project sponsors and the bias of figures can be corrected. Multiple commissions have brought out reports about the possibilities of democratising the decision-making process. The authors of the Interior Transport Act (LOTI) and the Carrère Report have made a number of recommendations concerning the following: greater citizen involvement, more verification of project sponsors, consultation between governments and special interest groups and the replacement of one-sided benefit/cost analysis with more modern instruments.

The recently approved Barnier Act provides for a National Commission of Public Debate and appears to be the start of a change of direction. Every large project will be submitted to the supervision of this Commission. The Commission is appointed for five years by the premier and is made up of 17 members from political, bureaucratic and judicial circles, as well as experts and representatives of pressure groups. The Commission comes under the Ministry of the Environment but is paid for by the project initiators. The Commission appoints a team of 3-7 people who can request all types of documents from the initiator. This consultation must remain in place during the whole of the decision-making process. Whether this institutional modification will actually provide the democratisation which has been called for or whether it is simply a stop-gap is not clear at the moment. It is possible that there will be more of an atmosphere of negotiation between the

principals and their watchdogs, in which various expert sources including contradictory ones will be consulted. It is equally imaginable that the public inquiry has enough legitimacy for the time being, but that the 'logic of the producer' (Fourniau 1995) will continue to come out on the long end because the fundamental power positions have not changed. The acquisition of truly open information does not fit in the French tradition of government (Crozier 1964).

A start has been made to modify the relationships between the political-bureaucratic elites and society, but a great deal is necessary to win the trust of a citizenry that has been held passive for so long. Limiting the number of double positions, which the socialist party has sought since the beginning of the 1980s, could decrease 'complicité' in France to a certain extent. But perhaps more is needed to convince citizens that the technostructures have what is best for them in mind.

## 6. The six countries typified

*The country reports are reworked into country scores on the generation of variety and storage of variety dimensions. In this manner they find their place within the typology of institutional structures. To realise this the empirical data on the various countries is translated into four administrative indices: federalism-unitarism, democracy-technocracy, integralism-reductionism and corporatism-pluralism. Federalism and democracy are both aspects of multicentrism, integralism and corporatism lead to high cooperation. Conversely, unitarian and technocratic countries tend to be monocentric and reductionist and pluralist countries generally have competitive institutional structures.*

### 6.1 Introduction

From the country studies in chapter 5, a relatively complete picture is available on the deliberation procedures and practices for the prioritisation of transport infrastructures in Switzerland, Germany, the Netherlands, England, the USA and France. In order to compare these countries, however, we need institutional characteristics which can be scored. Thus, 30 institutional characteristics have been selected from the country reports which provide the essential elements of these countries. These institutional characteristics are determined by distilling as many variables as possible from the descriptive material which are relevant to all countries, but on which the different countries may score differently. The use of the institutional characteristics may be seen as reducing all countries considered to a common denominator. The numerator may differ, however, from one country to another: each characteristic may be scored HIGH, MID or LOW. Appendix 3 give complete overview of these 30 characteristics. After that, these 30 characteristics have been grouped under four administrative indices, related to section 4.4's typology of institutional structures.

Multicentric institutional structures have a high degree of mutation (MUT), as a result of the large numbers of parties involved who have veto powers. This dimension can for empirical reasons be split up into the following two subindices:

*Federalism - unitarism*, expressed in terms of the federalism index (FED). A country is considered to be more federal when the institutional structure gives more support to the organisation of veto powers for levels of government other than the highest (national) level against proposals emanating from the highest level, and to more frequent taking of initiative at lower levels (*intergovernmental veto powers*).

*Democracy - technocracy*, expressed in terms of the democracy index (DEM). A country is considered to be more democratic when the institutional structure gives more support to the organisation of veto powers for social groups (*pressure groups and*

individual citizens) against proposals emanating from government or scientific experts (societal veto powers).

Cooperative institutional structures have a high degree of cooperation (COO), as a result of the sharing of ideas and the mutual loyalty of actors. This dimension is also divided into two subindices:

*Integralism - reductionism*, expressed in terms of the integralism index (INT). A country is considered to be more integralist when the institutional structure gives more support to consideration of all possible aspects and implications of infrastructure investments during the appraisal process (conceptual cooperation).

*Corporatism - pluralism*, expressed in terms of the corporatism index (COR). A country is considered to be more corporatist when the institutional structure gives more support to the development of feelings of loyalty between actors after the achievement of agreement between them, thus reducing the tendency to the taking of opportunistic stances (political cooperation).

Each of these 4 subindices is scored on the basis of the 30 institutional characteristics - 5 in the case of FED and DEM (the subdimensions which determine the innovative power of a country) and 10 for INT and COR (which determine the storage power).

To summarise, the following steps have been taken:

1. A theoretical framework and typology of institutional structures have been developed for the classification of countries (chapters 2-4)
2. Empirical descriptions have been made of the prioritisation process in the various countries (chapter 5).
3. 30 institutional characteristics have been distilled from the descriptions of the different countries, which as it were reduce each country to a common denominator. Each country may score HIGH, MID or LOW on each characteristic (chapter 6 plus appendix 3).
4. The 30 characteristics are in their turn grouped in the four subindices (FED, DEM, INT and COR). The most frequently occurring score for the characteristics within a given subdimension, the 'mode', determines the score for the country in question in that dimension (chapter 6).
5. The FED and DEM scores for a given country jointly determine the degree of innovative or mutation power (MUT) for that country, and the INT and COR scores jointly determine the storage or cooperation level (COO). The interplay of these scores finally determines the position of the country in the typology

defined in section 4.4. At the end of chapter the theoretical typology will be filled with real empirical countries.

## 6.2 Four dimensions and thirty characteristics

The dimensions we have identified have been described as follows:

1. *Federalism - unitarism*, consisting of 5 characteristics and expressed in the FED-index. A country is more federalist when the institutional structure enhances the possibility that levels of government other than the highest are able to organise veto powers against higher initiatives and can develop their own initiatives. High federalism contributes to high innovation power.
2. *Democracy - technocracy*, consisting of 5 characteristics and expressed in the DEM-index. A country is more democratic when the institutional structure enhances the possibility that societal groups, i.e. pressure groups and citizens, can organise veto power against proposals by experts from administrative or academic circles. High democracy contributes to high innovation power.
3. *Integralism - reductionism*, composed of 10 characteristics and expressed in the INT-index. A country is more integralist when the institutional structure enhances the likelihood that a the largest possible number of aspects related to infrastructure investments are taken into consideration during the assessment. High integralism contributes to high storage power.
4. *Corporatism - pluralism*, composed of 10 characteristics and expressed in the COR-index. A country is more corporatist when the institutional structure enhances the possibility that actors - after having reached agreement - feel committed to one another and thus display less opportunism. High corporatism contributes to high storage power.

Below a very brief overview of the 30 characteristics will be presented, categorised by index (complete information on the institutional characteristics, the reader will find in appendix 3). This has been done this for the six investigated countries as a whole and for two promising country-parts that have been discussed more in-depth in the country reports. These are the state of Northrhine Westphalia and the Metropolitan Transportation Commission in the San Francisco Bay Area. The same approach in characteristics and dimensions applies to both Northrhine Westphalia and the Bay Area since it is not necessarily concerned with central government, but all authorities that distribute financial means to their 'constituencies' and in doing so face questions of prioritisation. In federal states in particular, this may mean that governments at various levels have their own responsibility; the *Zürcher Verkehrsverband* and the State of Virginia could also have been used. Scores per characteristic can be HIGH/MID/LOW. Since these scores are measured at an ordinal scale, it is impossible to add them up numerically. Therefore, the dimension

scores are based on the 'mode'. The outcome per dimension can, thus, also be HIGH/MID/LOW. Preceding with studying the scores the reader should be aware that the various characteristics reflect the situation in these countries in 1997. Although in some countries, certain democratisation tendencies or subtle inclinations to increased integralism occurred, these do not (yet) justify an adaptation of the scores.

The country abbreviations used are:

- CH = Switzerland
- D = Germany
- NRW = Northrhine Westphalia
- NL = Netherlands
- ENG = England
- USA = United States of America
- SFBA = San Francisco Bay Area
- F = France

<p><i>FED (federalism-index):</i></p> <ol style="list-style-type: none"> <li>1. Number of financing actors</li> <li>2. Importance of territorial distribution</li> <li>3. Importance of consultation rounds</li> <li>4. Juridical role of subnational government</li> <li>5. Organising role of regional authorities</li> </ol> <p><i>INT (integralism-index):</i></p> <ol style="list-style-type: none"> <li>11. Interdepartmental nature of plans</li> <li>12. Formal importance of environmental impact reports</li> <li>13. Informal importance of environmental impact reports</li> <li>14. Broadness of assessment framework</li> <li>15. Importance of spatial translation</li> <li>16. Belief in the supply approach</li> <li>17. Public nature of reports</li> <li>18. Nature of public-economic prioritisation</li> <li>19. Importance of assessment in territorial context</li> <li>20. Extensive formulation of assesment criteria</li> </ol>	<p><i>DEM (democracy-index):</i></p> <ol style="list-style-type: none"> <li>6. Role of referenda</li> <li>7. Room for participation procedures</li> <li>8. Openness of societal discussion</li> <li>9. Role of societal groups on assessment criteria</li> <li>10. Representative role of public authorities</li> </ol> <p><i>COR (corporatism-index):</i></p> <ol style="list-style-type: none"> <li>21. Intermodal nature of plans</li> <li>22. Intermodal nature of legislation</li> <li>23. Importance of actor commitment</li> <li>24. Formal role of asesment procedures</li> <li>25. Importance of prior standardisation</li> <li>26. Promoting network effects</li> <li>27. Equal distribution over modes</li> <li>28. Reliability of financial promises</li> <li>29. Avoidance of privatisation tendencies</li> <li>30. Strength relationship infrastructure - servicing</li> </ol>
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Table 6.1 Overview of country scores by institutional characteristics

Inst Char	CH	D	NRW	NL	F	GB	USA	SFBA
1 FED	MID	MID	MID	LOW	MID	LOW	HIG	HIG
2 FED	HIG	HIG	HIG	LOW	HIG	LOW	HIG	MID
3 FED	MID	MID	HIG	LOW	MID	LOW	HIG	HIG
4 FED	MID	MID	MID	MID	LOW	LOW	HIG	HIG
5 FED	MID	MID	HIG	LOW	MID	LOW	MID	HIG
6 DEM	HIG	MID	MID	MID	LOW	LOW	HIG	HIG
7 DEM	HIG	MID	HIG	MID	LOW	LOW	HIG	HIG
8 DEM	HIG	MID	MID	HIG	LOW	HIG	HIG	HIG
9 DEM	HIG	MID	MID	LOW	LOW	LOW	HIG	MID
10 DEM	HIG	MID	MID	MID	LOW	MID	HIG	HIG
11 INT	HIG	HIG	HIG	HIG	MID	LOW	LOW	HIG
12 INT	HIG	MID	MID	MID	LOW	LOW	LOW	LOW
13 INT	HIG	HIG	HIG	MID	LOW	LOW	MID	HIG
14 INT	HIG	HIG	HIG	MID	HIG	LOW	LOW	MID
15 INT	MID	MID	MID	HIG	LOW	LOW	LOW	LOW
16 INT	HIG	HIG	HIG	MID	HIG	LOW	LOW	MID
17 INT	HIG	HIG	HIG	HIG	MID	LOW	LOW	HIG
18 INT	HIG	HIG	HIG	HIG	MID	LOW	LOW	LOW
19 INT	HIG	HIG	MID	MID	HIG	LOW	LOW	LOW
20 INT	LOW	HIG	HIG	MID	MID	HIG	LOW	HIG
21 COR	MID	HIG	HIG	MID	LOW	MID	MID	HIG
22 COR	LOW	HIG	HIG	HIG	MID	MID	LOW	MID
23 COR	MID	MID	MID	LOW	HIG	LOW	LOW	MID
24 COR	HIG	HIG	HIG	HIG	MID	LOW	LOW	LOW
25 COR	HIG	HIG	MID	MID	HIG	LOW	LOW	LOW
26 COR	HIG	HIG	HIG	MID	MID	LOW	LOW	LOW
27 COR	MID	HIG	HIG	HIG	MID	LOW	LOW	MID
28 COR	HIG	MID	MID	LOW	MID	LOW	LOW	LOW
29 COR	HIG	MID	MID	MID	HIG	LOW	LOW	MID
30 COR	HIG	HIG	HIG	LOW	LOW	MID	MID	MID

### 6.3 Country scores on the four dimensions

The country scores on four administrative indices are based on the 'mode'. These scores are depicted below.

*Table 6.2 Country scores in the four institutional dimensions*

Country	<i>Federalism</i>	<i>Democracy</i>	<i>Integralism</i>	<i>Corporatism</i>
<i>Switzerland</i>	MID	HIGH	HIGH	HIGH
<i>Germany</i>	MID	MID	HIGH	HIGH
<i>Northrhine W.</i>	HIGH	MID	HIGH	HIGH
<i>Netherlands</i>	LOW	MID	MID	MID
<i>England</i>	LOW	LOW	LOW	LOW
<i>United States</i>	HIGH	HIGH	LOW	LOW
<i>Bay Area</i>	HIGH	HIGH	MID <sup>65</sup>	MID <sup>66</sup>
<i>France</i>	MID	LOW	MID	MID

In comparison to categorisations by other authors, a few findings are noteworthy:

*Switzerland, Germany and England* fit the general image we know from the literature on other policy domains. The Swiss and German structures are rather federal, democratic, integralist and corporatist (Scharpf 1976, Streeck & Schmitter 1985, Mény & Wright 1985, Page & Goldsmith 1987, Dente & Kjellberg 1988, Toonen 1990, Salet 1994, Hendriks 1996). In terms of informal behaviour, Swiss and Germans rarely deviate from their formal structure. Prior to acceptance the formal structure takes a long time to mature, but then fits well with the informal structures. Reasoning in England is much more hierarchical and automatically departing from the informal structure. They are prepared to adapt the formal structure if the informal structure so requires.

*The Netherlands* score exceedingly low on federalism. Although the Netherlands is a 'decentralised unitary state' in name that, according to Toonen (1987, 1990) would from a constitutional point of view fit in with the German-federal group, its institutional structure for infrastructure policy is very centralist. The recent KUB & TNO-INRO report (1997) also points in that direction. As we shall see in chapter 8, the Dutch constitutional position is in the French, not in the German group. To some degree this may be explained by the financial relations.<sup>67</sup> The Netherlands score



just average on integralism and corporatism contrary to what many would probably suspect from results of the polder model in the social-economic sector. This is largely explained by the lack of encapsulating practices that limit opportunistic behaviour of involved actors, such as they exist in Switzerland and Germany. Although the formal procedures in the Netherlands would indicate a strong cooperative orientation, the informal practice appears to deviate from that. They want to remain 'flexible'.

*France* scores higher than expected on the indices for federalism, integralism and corporatism. The French allegedly live in a centralised unitary state, but that view needs correcting at the institutional level. The specific cumulating of offices and other informal patterns of intertwinement challenge the traditional view, a fact already pointed out in administrative science literature. France is also more integralist and corporatist than would be expected on the basis of formal legislation. This can be explained from the fact that many issues which are not established in procedures are taken up by actors through informal codes and codes of conduct. To an outsider such codes are much less accessible. The ease with which parties can cooperate is enhanced outside the rules. Instead of remaining flexible, the French prefer to safeguard themselves (Crozier, 1964, Dupuy & Thoenig 1983, Dente & Kjellberg 1988). The largest differences between the Netherlands and France are between formal and informal codes, and then in a contradictory manner: they are each other's mirror image.<sup>68</sup>

*Striking for the USA* is the high democracy score. Perhaps contradictory to the idea that exists about the functioning of (representative) democracy, (direct) democracy appears to be alive and kicking. The ethos of individual freedom and property rights is translated into informal practice; that a structure sometimes appears to be missing is hardly a problem. As striking is the strong resemblance to England regarding the integralism and corporatism indices, and the extreme differences on federalism and democracy. The combination of distribution of power and competitive orientation leads to fundamentally different politics than a combination of power concentration and competitiveness. Despite cultural similarities between the two Anglo-Saxon states, the differences in state and organisational structure have major consequences.

In view of this table, the findings of Aberbach *et al.* (1981) are remarkable. They concluded that the relationship between politics and bureaucracy is strong in the USA, France and Germany and weak in England and the Netherlands. In these last two countries, government ministers and political party ties in parliament are very strong. It is reasonable to suspect a relationship between these practices and the federalism score, as is the suspicion that unitary states are more focused on parliamentary decision-making and annual budgetary revision while federal states will have more attention for extra-parliamentary decision making on execution issues.

At this high level of aggregation, the differences in institutional structure between Germany and Northrhine Westphalia are fairly small. The same cannot be said for the USA and the San Francisco Bay Area, where institutional arrangements and

practices exist that promote coherence and cooperation to a degree one would probably not find elsewhere in the USA. Developing assessment criteria with many involved parties, and accepting these as an integral assessment framework, is a promising avenue and a remarkable mix of American and Continental-European features.

#### 6.4 Country placements in the typology

It is time to match the results of the data analysis with the typology of institutional structures as presented in section 4.4. By crossing the various institutional dimensions with one another, country classifications can be developed. Below we combine democracy (DEM) with integralism (INT) and federalism (FED) with corporatism (COR). These combinations lead to matrices named 'societal embeddedness' and 'administrative embeddedness' respectively. We conclude with a table in which mutation or innovative power (MUT) is crossed with cooperation or storage power (COO). This last matrix corresponds fully with the typology of institutional structures, now filled with countries studied.

Table 6.3 Societal embeddedness of institutional structures

Dimensions	High democracy	Medium democracy	Low democracy
High integralism	Democratic system planning Switzerland	Germany, Northrhine Westphalia	Technocratic system planning
Medium integralism	Bay Area	Netherlands	France
Low integralism	Democratic adhococracy USA		Technocratic adhococracy England

Table 6.4 Administrative embeddedness of institutional structures

Dimensions	High federalism	Medium federalism	Low federalism
High corporatism	Decentralised intertwinement Northrhine Westphalia	Switzerland, Germany	
Medium corporatism	Bay Area	France	Netherlands
Low corporatism	Decentralised fragmentation USA		Deconcentrated fragmentation England

Table 6.5 Procedural rationality in the institutional structures

Dimensions	High mutation/creation (multicentrism)	Medium mutation/storage	Low mutation/creation (monocentrism)
High storage (cooperation)	Type 1 Stable selection environment with substantial variation Switzerland, Northrhine Westphalia	Germany	Type 2 Stable selection environment with minimal variation
Medium storage	Bay Area		Netherlands, France
Low storage (competition)	Type 3 Dynamic selection environment with substantial variation USA		Type 4 Dynamic selection environment with minimal variation England

It becomes obvious from the tables that the most procedurally rational countries are in the top left corner and in the middle left. Switzerland and Northrhine Westphalia on the one hand and the Bay Area on the other both have promising scores. The fact that they differ in terms of storage power is important, but provides no unambiguous clue in terms of desirability. The institutional designer looking for possible transplants to improve his own host system should watch these institutional systems with particular interest.

Chapter 7 will centre around the quality of decision-making in the six countries. There the procedural rationality criterion with its two guarantors will be compared with other criteria for the quality of decision-making.



## 7. The quality of decision-making in six countries

*The quality of decision-making in the six countries is evaluated.* The degree of procedural rationality which was proclaimed at the theoretical level in chapters 2 through 4 is now applied to the institutional structures. Thereby, a picture arises showing how the diverse countries deal with checks and balances of information provision. After that, the procedural rationality scores are compared with those on three alternative criteria: (1) speed of decision-making, (2) satisfaction of the actors involved and (3) Benefit/Cost evaluation in administrative structures. As an important point of focus in procedural rationality is the assumption that procedural quality M is a good proxy for product quality Q, a test is done on the quality of the *infrastructure systems* in the six countries. We will then get an idea of the plausibility of the relationship between institutional systems and infrastructure systems. At the end, it has become clearer which are the countries that are worth while studying to take institutional transplants from.

### 7.1 Product quality Q and process quality M (2)

Chapter 7 will attempt to span a bridge between the institutional structure prevailing in certain countries and the quality of appraisal.<sup>69</sup>

Obviously, any evaluation that is made of a country will depend heavily on the enshrined norms - which are themselves subject to wide-ranging prioritisation. Thus, whereas technicians are inclined to base evaluations on traffic standards, economists look first at cost-benefit ratios or expenditure levels and public officials focus on interactivity in the development of the process.

Here, the criterion of procedural rationality (M) is elaborated (7.2) and compared with the results derived from the application of other quality norms, namely speed, satisfaction of involved actors and the ratio of benefits to costs (7.3). Section 7.4 will discuss diverse indicators of the modal split for product quality Q (the extent of the infrastructural network, network congestion and expenditure levels). If we relate these to the country scores on the variation norm we will gain a deeper understanding of the connection between M and Q in decision-making on transport infrastructure.

Product quality Q reflects a combination of these indicators, rather than one in particular. More infrastructure and increased expenditure are not necessarily more desirable than less infrastructure and lower spending. The relationship between process and product is often very subtle. The European Centre of Infrastructural Studies made a wise statement when it remarked that:

Much of Europe's infrastructure, in practice, is driven by the inertia of ministerial and local budgets, with variations caused by budget considerations (and electoral cycles) rather than

by a careful assessment of needs. General underinvestment may pose a less serious problem than misallocation. Indeed, overcapacity may co-exist with serious bottlenecks (ECIS 1996: 27).

In the long run it is the relationship between process and product and between the diverse indicators which provides us with a reliable and realistic picture of how priority-setting works. Simplifying complex material would merely have an adverse effect here.

## 7.2 Application of the quality guarantors: procedural rationality

In order to understand how the institutional structures in countries affect innovation, the two main mechanisms that conceptual evolution consists of will be repeated here:

### 1) *Creation of variation through mutation.*

Replication is the exact copying of ideas from one actor to another and mutation is the copying of information in such a way that during its transmission to the other actor, changes occur. Mutation leads to a greater variety of ideas since more varieties are created; this is the source of *innovation*. Replication maintains the pool of existing ideas without changing anything. In this study the degree of mutation is called the *innovative power*. A high degree of mutation implies that a large number of different arguments, figures, projects and alternatives are continuously presented: the variation of ideas is large. When information comes from many sides and many actors, mutation often occurs. Information is not accepted without critique. The variation of ideas is much lower in the case of replication. Replication processes thrive in environments where relatively few actors provide ideas and where existing ideas are accepted without discussion in monopolistic power structures. Assessment processes are approached in terms of the will to act: intended projects will have to be realised as quickly as possible. Institutional structures with a large number of checks and balances, on the other hand, focus on satisfying the desires of all actors considered necessary for the realisation of projects. When certain issues can only be realised by means of contributions by many actors, the exchange of arguments and figures becomes a *conditio sine qua non* for any progress. The information exchange literally excludes the adoption of ideas: the degree of mutation increases.

### 2) *Storage of variation through cooperation.*

Competition is the development of ideas by competing actors so that only the ideas of strong actors will survive through a *laissez-faire* process of selection. Competition will result in substantial screening of ideas on their immediate viability. Cooperation is the development of ideas between cooperating actors where the institutional rules guarantee that ideas of both strong and weak actors can be

selected. Through a strict structuring of decision-making, variation is added in a shared selection environment. More cooperation will lead to the adoption of ideas in the assessment framework. The degree to which the variation of ideas is added in a selection environment is called the *storage power*. The degree to which ideas are shared in cooperation enhances the stability of these ideas. Actors consider ideas together and thus try to transform these into a common framework. In doing so, they create a set of shared assessment criteria that we will call the *selection environment*. Institutional structures in which actors are obliged to cooperate and where the failure to live up to agreements is only possible at a high cost, are cooperative and usually characterised by a harmonious and transparent selection environment. Institutional structures that enable actors to serve their own interest above that of others without too much difficulty will seldom develop a common assessment framework - unless it can be unilaterally forced from above. The selection environment is then rather diffuse and not strictly guided by procedures that limit opportunism.

The variation norm (procedural rationality) is a compound criterion, based on the presupposition that when one possesses the right information, especially about multiple indicators, and uses that information, the chances for reaching the right decision will increase. There is no guarantee for 'good decisions', but in retrospect none can be blamed since all precautions were taken to prevent overlooking relevant information. The criterion consists of two elements:

- A. Generating as much variation as possible.
- B. Grounding the selection on existing variation through strict channeling of this variation to the selection environment.

Criterion A. requires many ideas, arguments, data, projects and alternatives. Countries with high federalism and democracy scores deal with a large number of administrative and societal veto powers which can initiate a discussion on arguments and facts. Their degree of mutation is high. Countries with low FED and DEM scores more often replicate ideas. In evolutionary terms, the effects of federalism and democracy are similar, namely the accumulation of more or less variation, so that the two dimensions are fused into MUT, *the mutation index*.

Criterion B. requires that the accumulated variation is incorporated as much as possible in the assessment process itself. This requires strict bonding, guidance and acceptance of the contribution of those who created the variation, which is furthered in institutional structures with high integralism and corporatism scores. Countries that score high on these indices have many rules that 'condemn' the actors to one another, have a cooperative institutional structure, and are largely focused on a stable set of

ideas in a relatively well recognisable selection environment. Countries with low INT and COR scores have a competitive structure and will make actors compete with one another for the acceptance of their ideas. The selection environment is rather diffuse and not strictly guided by procedures that limit opportunism. In evolutionary terms, the effects of integralism and corporatism are similar, namely the incorporation of more or less variation in the selection environment, so that these dimensions can be merged into COO, *the cooperation index*. Cooperation results in stability and the time to store innovations so that via the general interest, partial interests are supported. Competition results in dynamics, so that innovations are not so much stored but rather replaced. The higher the COO score, the more cooperation between policy sectors and the higher the chance that initiatives will gain wide support. The lower the score, the higher the speed in which the one innovation follows another and the lower the chance that innovations find widespread appeal.

The variation norm is highly dependent on richness and balance in the contribution of various actors. In that sense, it is a process norm which attempts to maximise the 'substantiveness' of decisionmaking. Attention for the duration of the decisionmaking is secondary: *efficiency in a narrow sense* after all is a (brief) diagnosis of the moment, while decisionmaking on infrastructure requires a horizon view much further away. The planning specialist Merlin wrote about this:

Lengthy and costly projects yield infrastructures with a lifespan of decades, generations or centuries. It is understandable that decision-makers cannot afford to make mistakes in such circumstances; after all, their decisions are doubly important, because of the costs involved and because of the long-term consequences. (Merlin, 1994: 6).

Seen in this light efficient, but hasty decisionmaking is unwise and substantial variation of ideas and a thorough selection from that variation is necessary. *Efficiency in the broader sense* means maintaining innovations and keeping an eye on the long term. Innovation requires attention for coincidence and treading unknown paths and a long-term orientation requires thorough reflection on decisions before actions are taken. Such activities are never *efficient in a narrow sense*.

The size, level, and degree of variation of these cannot be measured as such. But we can map the degree to which institutional structures are open or closed; this is done on the next page.

The conclusion that the highest possible scores on mutation and cooperation are to be preferred is simple. MUT continuously requires many types of actors who bring many types of ideas. This creates an especially high degree of *dynamics* in decisionmaking processes, a dynamic that cannot be realised when the COO score is too high. The advantage of a very high MUT score and a low COO score is a high degree of flexibility and ability to adapt, the disadvantage is a lack of memory since many fruitful ideas never mature.



	<i>MUT Index (Innovative power)</i>		<i>COO Index (Storage power)</i>		
	FED	DEM		INT	COR
USA	HIGH	HIGH	CH	HIGH	HIGH
SFBA	HIGH	HIGH	D	HIGH	HIGH
CH	MID	HIGH	NRW	HIGH	HIGH
NRW	HIGH	MID	NL	MID	MID
D	MID	MID	SFBA	MID	MID
NL	LOW	MID	F	MID	MID
F	MID	LOW	ENG	LOW	LOW
ENG	LOW	LOW	USA	LOW	LOW

Cooperation requires a continuous coordination process between actors and ideas, so that they can grow toward one another. This calls for a fair amount of *stability*. This stability does not allow too much mutation since ideas have to mature. The advantage of a very high COO score is an efficient engagement with accumulated variation, the disadvantage is that this conservatism will reduce the openness for more variation.

In other words, countries with high MUT scores and average to high COO scores perform well on procedural rationality. The final preference is mostly a matter of taste.

On criterion A, the USA and the Bay Area score highest and the Germanic countries somewhat lower. The others are far behind. On criterion B, the Germanic countries score by far highest and England and the US lowest. There is also a large middle group where the position of the Bay Area is striking in a positive sense (contrary to England and the US). On the criterion as a whole, all Germanic countries and the Bay Area are preferable. England is at the bottom in all respects, while also the positions of the Netherlands, the USA and France could be improved.

### 7.3 Process quality according to three alternative norms

#### *Speed*

In practice, the 'process time' is often an implicit criterion for assessing decision-making on infrastructural projects. When the speed of decision-making is the criterion, the will to act becomes the most important aspect. This means that ideas cannot be changed too often since this would slow down the decisionmaking process. The line of reasoning here is that the benefits of infrastructure will occur more quickly and the costs will generally be lower when planning and construction proceed according to plan. Also, a large number of practical, administrative problems are decreased such as low expenditure in some years and budget deficits in other years.

Quick decisionmaking may have a number of important disadvantages. Because of the emphasis on pushing certain decisions through, it is possible that the contractor has little or no consideration for arguments and contributions of opponents. These opponents could, under different conditions, well be potential participants who would enrich the final decision. While the costs will be higher, hopefully the long-term benefits will be greater, thus it might be wise to reconsider before one acts. Today's benefits may well be tomorrow's costs.

There are also projects that gain general support and are constructed in a relatively short span of time. These are often cases of good management. It is, however, also conceivable that in an institutional structure with substantial potential for quick decision-making, the decisionmaking processes are slowed down. In these cases, the advocate of a project considers himself more powerful than he really is, and the opponents generate destructive blockades; planning and construction are slowed down, but the sabotage will not lead to constructive results nor to a richer, more broadly accepted result. An important difference exists between real decision-making speed and speed according to legal procedures. Procedural speed can be found in relevant legislation while decisionmaking speed concerns the actual processing time of projects. In this study, we are concerned with the last type, of which procedural speed certainly is a part, but administrative management is more important.

Decision-making speed is not easy to measure. The beginning and the end of a project are usually difficult to determine precisely, and decision-making speed may differ from the one project or mode to the other. Decision-making speed, in reality, is often an impression instead of a precise measure.

When the process time of projects is taken as the norm, then determination and the will to act are the most important aspects. This means that ideas should not change too much since that would delay the decisionmaking process. In this sense, one would think that a low score on federalism and democracy would be the desirable situation: administrative and societal veto powers have to be at a minimum and replication at a maximum. Procedures that require a substantial time investment before parties can reach agreement are not desirable either: thus, integralism and corporatism should also be low rather than high. One need to keep in mind that the will to act of only one specific actor counts, namely the dominant actor, and he would want minimal opposition from weaker parties. Such a line of reasoning would lead to the following predictions:

- 1) England is the fastest since the scores on all indicators are low.
- 2) The USA is relatively quick given their scores on integralism and corporatism.
- 3) France and the Netherlands have average speed, given that they have average scores on most indicators.

- 4) The Germanic countries and the Bay Area are relatively slow, because of their numerous veto powers (FED and DEM) and the time necessary to accommodate the parties involved (INT and COR).

Solid empirical research on the length of decision-making procedures is scarce. Using Kolpron's data (1994), we have made the following table of only European countries. We should realise that it concerns *estimates* of national civil servants.

Table 7.1 *Duration of the Decisionmaking Process in Countries (measured annually until 1990)*

Transport mode	Switzerland	Germany	Netherlands	England	France
Roads	16	16	24	20	6
Railroads	12	15	9	5	7

Source: Kolpron 1994.

From these data we can derive that the length of the decisionmaking process in the Germanic countries is long but predictable, and short in France. No data exist on the USA and the length of decisionmaking regarding roads in the Netherlands and England is substantially different. These scores can be explained from the fact that in both countries, the Ministry of Transport is the dominant actor and while he can eliminate the constructive veto powers of other parties, he cannot limit their blocking power. Other actors besides the one who initiates a project apparently do not have the power to submit policy proposals and get them accepted, but they can prevent quick construction. That this undesirable effect occurs more with roads than with railroads can probably be explained by the fact that railroad owners are often the only initiator, while for roads, authority is more dispersed. Low federalism and democracy in combination with low integralism and corporatism do not lead simply to quick decisionmaking: it is likely that low FED and DEM scores with an average or high INT and COR scores are even better. In this case, weak parties are met with a willing attitude and receive some influence, which in turn prevents them from using all influence they have against the realisation of infrastructural projects.

In a recent publication, The Confederation of British Industry (CBI 1995) also attempted to present a somewhat careful indication of the process time in four countries (England, France, Germany and the Netherlands). According to CBI, the construction of infrastructure (in general) in the Netherlands takes 12 years from the moment that any certainty exists about the availability of national funds (source: Municipal Council of Rotterdam). For Germany, numbers of 9 years for railroad projects and 10 for federal highways are mentioned, but the politico-administrative discussion must be added to this (source: Institut für Landes- und

Stadtentwicklungsforschung des Landes Nordrhein-Westfalen). There are no periods indicated for France but it is assumed to be rather speedy. England takes as much as 13.5 years, basically for lack of a consensual attitude and financial resources. No matter how much these estimates differ from those offered by Kolpron, they do indicate that little veto power and offensive, competitive relations certainly do not guarantee quick decision-making. Not even when the type of procedures appear to suggest so.

A third more detailed study deals with the developments and changes in the national railroad plans in Switzerland and the Netherlands in the 1988-1996 period under the influence of their respective institutional structures (De Jong, Stevens and Veeneman 1996). It appears that in 8 years time, the Swiss plans have gone through major changes under the influence of several veto powers (referendum, lump-sum financing, strong cantonal influence), while Dutch Rail project realisation may have fallen behind schedule, it is still relatively fast and unchanged. After 8 years, only a third of the Dutch intentions has been realised and the money for the whole programme has been depleted, while in Switzerland the maximum amount available resulted in enormous cutbacks: the existing rail system can handle capacity with better and larger transport material. The Dutch are quicker and more technocratic than the Swiss. Because of a continuing budget for Dutch plans, national government and Dutch Rail have more room to grant detailed municipal wishes. In Switzerland, on the other hand, regional wishes have been anticipated from the start, but since they appear to take a secondary position as a result of cutback measures, a stalemate developed. According to this detailed study, a strong unitary and relatively technocratic country can operate far more quickly than a federal and democratic country. According to Moser (1993), the Swiss policy-makers have to deal with a great number of veto powers within a rather rigidly applied legal framework. Furthermore, money, which appeared to be an excellent oil for massaging and quickening processes, was lacking for rail projects in Switzerland.

In its research of decision-making on large infrastructural projects in a number of areas in North Western Europe, the NEI (1991) presented several conclusions in tables (number and size of projects, solidity and time span). Up to a point, these are related to the institutional structures in a country. It is interesting to compare the outcomes of the NEI research with the outcomes we may expect in this investigation:

- The number and size of projects are related to the ambition levels of actors. Oversupply often thrives in combination with low veto power (low federalism and low democracy) combined with strong tendencies to cooperate (high integralism and corporatism). Low FED and DEM scores combined with low INT and COR scores would result in a smaller number of projects (undersupply). Other combinations will not be so distinct since opposition or veto will

mitigate high or low ambitions. Number and size of projects ought to be large in France and the Netherlands, not all too marked in Germany and low in England.

- The solidity of a project is supposed to score high in environments lacking opportunism and with many shared preferences. This requires high integralism and corporatism and is unrelated with federalism and democracy. Solidity of projects should be high in Germany, average in France and the Netherlands and low in England.
- The time span of projects is usually shortened by low FED and DEM scores (the will to act) and low INT and COR scores ('winning' instead of vetoing). The time span should be shortest in England, relatively short in France, longer in the Netherlands and longest in Germany.

Outcomes are not only influenced by institutional structures, but also by welfare, spatial structures, preferences of the population, the condition of the infrastructure, regional differences within countries and specific events. Therefore, interpretation of data such as these should always be done with great care.

Table 7.2 Characteristics of Infrastructural Projects in Various Areas

Regions	Infrastructural Projects			
	Number and Size	Solidity	Duration in Time	
<i>Hamburg</i>	Fairly large OK	Fairly large OK	Fairly Long OK	
<i>Frankfurt</i>	Limited OK	Reasonable OK	Long OK	
<i>Rhein-Ruhr</i>	Reasonable OK	Reasonable OK	Rather long OK	
<i>Ile de France</i>	Large OK	Large not	Rather short OK	
<i>Greater London</i>	Large not	Limited OK	Rather long not	
<i>Randstad</i>	Large OK	Limited OK	Long not	

Source: NEI 1991.

The conclusions are:

- 1) The predictions for the Germanic countries are correct.
- 2) The prediction that the solidity of projects in the Ile de France is average is not correct. The solidity is great. This is probably a consequence of the TGV effect; it takes longer for parties to find common ground, but once it is found, the high speed train is running. See chapter 5 for the details.

- 3) The prediction that the number and size of projects in England is small, is wrong: the number and size are both large. We should add, however, that the greater London area is just about the only part of England where heavy investments are made. Almost all other areas receive very little.
- 4) The prediction that the time span of projects in England is short or very short is also wrong. It is rather long. There is no direct institutional explanation, other than perhaps there is no more money. The NEI reports on this:

Also in Greater London the solidity of projects is limited, especially because of the reluctant attitude of government to financially participate in large projects (1991: 97).

In light of the above, we should not be surprised.

- 5) The prediction that the time span in the Netherlands is average is not quite correct: it is rather long. Perhaps, we see a reversed TGV effect; it does not take long for parties to find common ground, but once they have, they appear to have different agendas so that consensus is only cosmetic and the high speed train is slowly moving forward on existing track.

The expectation voiced by NEI authors, that the degree of public-private partnership substantially differs and is only realised in Ile de France and London at the project level, is to be expected. In German and Dutch regions it is, for the moment, limited to fashionable language. With regard to the time span in particular, the NEI presents different explanations for the variance. They explain the long duration of project decisionmaking with reference to the spatial structure. Ruhr area and Randstad take more time since the spatial structure is polycentric or multipolar, so that power is shared between many equal local and regional parties. The fragmentation of the spatial structure is reflected in a fragmentation of the institutional structure. Good management of the many interests in these areas would accelerate the speed toward that of unipolar areas.

The most striking outcome of this evaluation of time and speed of infrastructure projects in various countries concerns the Netherlands and England. Given their scores on several institutional dimensions (low federalism and low democracy, low to average integralism and corporatism) a high speed would have been expected. This, however, was not the case. The best way to explain this is by means of two paradoxes, the decentralisation paradox and the complexity paradox, mentioned in De Bruijn, Ten Heuvelhof and De Jong (1994: 48-56).

1. *The decentralisation paradox*: the timely consultation of lower governments by the central government and the partial 'giving away' of influence may very well lead to wider support for negotiation results and a situation in which use of decentral power instruments are put to use for central goals. Contrary to the expectation of many, enhanced steering opportunities for the central transport ministry arise

instead of decreased opportunities. Centralisation of decision-making power would fuel maximum resistance from decentralised actors and minimum use of their policy instruments. This would result in major delays. In other words, low federalism is certainly not a guarantee for high speed: it requires skillful management. Both the Netherlands and England can be characterised as countries where financial means are concentrated at the national level. As the capital assumes that he who pays also decides, the blocking power of spatial-juridical competences and organisation power of personnel tends to be systematically underestimated.

2. *The complexity paradox*: increasing the complexity in the arena of actors results in a reduction of complexity in the decision-making process because views are visible in time and opportunities for subsequent resistance are smaller. High federalism and democracy oblige the central ministry to manage skillfully, so that potential opponents are encapsulated from the start.

#### *Satisfaction of involved actors (satisfaction norm)*

A norm that may result in diametrically opposed outcomes to the speed norm is the norm that all involved actors must be content at the end of the decisionmaking process - both with the way the process developed as well as with the outcomes. In material terms, this means that after consultation and negotiation, all interested parties who had something to offer in the decision-making process have reached agreement. In this case, one can assume they have 'learned'. The amount of time from beginning to end is only of secondary importance. Strict procedures often lead to forced or sub-optimal outcomes in which parties may have something to offer each other but are unable to do so given rigid procedures. In this context, the laissez-faire approach of decisionmaking provides sometimes interesting, surprising and promising outcomes.

The contentment of the involved actors is generally guaranteed if each can find something of their own input in the assessment. Instinctively, one would say that the chances for this depend on the degree of exchange on the basis of mutual communication; the higher the mutual communication, the greater the chances of including everyone's input. Decisions do become enriched and find more support. Maybe the costs will rise, but the level of societal benefits will justify this. But the concept of *involved* actors conceals a difficulty. When the number of actors is large and varied, checks and balances in the institutional structure will generate an enriched result. If the number and diversity of actors is small and the opposing forces are weak, consultation and negotiation are not taken seriously and monopolistic relations remain masked. The content of the decision is clearly reached prior to administrative and societal contributions: in this case decisionmaking also takes time, but it will not generate an enriched result. The real face of the satisfaction norm in its pure laissez-faire form is a systematic

confirmation of the status quo: *invoked* actors that are content will favour maintaining the institutional structure through which they were successful, and the opinion of *non-invoked* players is considered irrelevant.

For a high score on the satisfaction norm, wide acceptance should exist for the final selections to be made: integralism and corporatism should be high. Cooperation leads to higher satisfaction. The satisfaction norm is neutral to federalism and democracy. The term *invoked* actors becomes meaningful here. When the number of involved actors is high and encompasses various types, high mutation is desirable. Checks and balances within the institutional system require this. If the number of involved actors is small, their diversity small and countervailing forces are weak, then there should be fewer mutations. In an institutional structure that promotes cooperation, preferences of actors become increasingly similar what is achieved in the end is highly valued. When there are few rules in an institutional structure that limit opportunism, the preferences are further apart and actors gather around like-minded spirits on a temporary basis. They then attempt to steer the decision into their direction by means of partners. The partners involved in the winning deal will try to exclude opponents from the decisionmaking arena since these could stop the process or at least influence a change away from the 'winning deal' preferences: low integralism and low corporatism lead to dissatisfied losers.

No systematic survey research has been done on the satisfaction of actors regarding infrastructural projects, let alone international comparative research. The only sources we can use are international reports in chapter 5. In these reports, the following is striking:

1. Germany and Switzerland, where both public bodies and societal groups are captured in the decision-making process, have a reasonable amount of satisfaction. This is not so much because they always get their way, but more because they have the feeling that all individuals have a legitimate place in the process. Involved actors are content. Non-involved actors are usually discontent, but there are not too many of those. The FED and DEM scores assure many involved actors, while the high INT and COR scores assure that they all are accommodated within reason.
2. France, where public bodies are especially contained, experiences little discontent within public channels. However, the discontent about process and outcome among pressure groups and citizens is much higher. Every new proposal to enhance participation bounces against a wall of distrust. The involved actors are content and powerful, the non-involved are not, but powerless.
3. The Netherlands and England share the philosophy that public bodies and societal groups deserve a place in the decisionmaking process, but they will



have to fight for it. Furthermore, every type of cooperation is created ad hoc and is certainly not long term. No actor is really assured of his place. The number of actors that can really make a difference during the process is small. The national transport ministry is the major funder, and only the largest municipalities have good contacts with the capital and the seat of government; the representatives of the various transport modes are organised in tight monopolistic clubs, despite a privatisation philosophy. Smaller municipalities adopt a passive attitude and environmental lobbies are usually aggressive. Every now and then they win a battle, but co-deciding on the main course of a policy is outside their reach. This is not surprising for England, but it is for the Netherlands which has participation procedures and open planning processes. The fundamental choices with respect to main ports and the major infrastructure is, however, made in a much smaller circle (Huigen, Frissen and Tops, 1993; Siddiqui 1996). Societal groups can do little more than stepping out of the discussion, declare their opposition, buy land and start judicial procedures. How open are the planning processes, really, when participation is seldom equal to decision? That the actors involved are content with the construction of the Willemspoortunnel (a train tunnel) and other projects, as Teisman analysed (1992) is correct. That these actors, however, tell the whole or even the most important story remains doubtful. Some non-involved but interested actors are consistently dissatisfied.

4. In the United States, where the number of policy relevant actors is largest, there is no distinction between public and private actors. This is a consequence of the fact that actors are involved in some decisions and not in others. Sometimes they are capable of creating a coalition of parties with comparable interests, and these win sometimes and lose sometimes. The combination of strong checks and balances and fragmentation of assessment process does not lead to the kind of containment you would find in Germany or Switzerland. On the contrary, pragmatism and self-interest results in a practice of ad hoc associations between actors in which everybody will win sometime, without being able to predict exactly when. The course and outcome of decisionmaking is something like throwing dice. Few are thus really discontent because no actors consistently lose. The Bay Area with its more cooperative structure has gone into a direction more similar to Germany. All parties occupy an accepted spot in a somewhat structured process, thus increasing cooperation and solidarity. This has increased the satisfaction of actors. But the story on all *interested players* is different.

Since in all cases content *involved* actors prefer to maintain the institutional structure in which they were successful, all countries appear to score well on this criterion.

*Highest possible Cost-Benefit balance (B/C Norm)*

In essence, the substantive motive to develop infrastructures is almost always related to expected societal benefits divided by the costs to be incurred. As a corollary, institutional structures that result in infrastructural projects or traffic systems with a high B/C ratio are preferred above others. This is one of the few policy analytical norms posed and is, in that sense, more valuable than the others which are all process norms.

Unfortunately, in terms of outcome, this norm is also the least operative: benefits and costs of produced infrastructural systems are spread out over long periods of time, they are rarely - if ever - predictable and they are difficult to define. They are particularly difficult to define since some cultures value certain societal benefits more than others. Also, the importance attached to various items under both costs as well as benefits may differ from country to country. Furthermore, benefits can be positive as well as negative and some can be expressed in monetary terms while others cannot; thus the B/C ratio can never be captured in one single number. Last, but certainly not least, it is not easy to ascribe the benefits derived from traffic systems solely to the institutional structure that developed them. Other factors may be just as important.

That this norm can be designed in numerous ways becomes clear from the number and diversity of types of costs and benefits such as:

- production costs of infrastructure (construction, maintenance, management)
- transaction costs (costs of information gathering and negotiation)
- macro-economic benefits
- ecological benefits
- safety benefits
- spatial benefits
- regional development benefits
- social redistribution benefits
- other transport benefits

It is possible to outline in general terms how costs and benefits are distributed per country. Thus, someone who focuses on the costs of infrastructure and who does not believe in a broader spectrum of externalities, will have a preference for results that are expressed primarily in monetary terms. Those with a focus on the supply vision upon infrastructure and an orientation on benefits, will prefer countries with substantial and nuanced multi-criteria matrices.

When applying this criterion, the best that can be achieved is an indication of how and where costs and benefits are distributed and which issues are considered costs

and which are considered benefits. In the end, such an assessment is dominantly a matter of ideology. Thus, a focus on the costs of infrastructure will lead to little belief in the broader spectrum of externalities and will favour the Anglo-Saxon countries which do not include the less measurable effects of infrastructure: only that which is directly visible is taken into account. A focus on the planning of traffic networks and a supply view on transport will result in the inclusion of all possible relevant aspects in their considerations. When we distinguish between production costs, transactions costs and benefits, we develop an insight in the stronger and weaker points of various countries:

### 1) *England and the United States*

Usually, economic criteria and relatively slim analysis of societal costs and benefits are sufficient for an assessment. This almost automatically means that the total benefits are lower and a high B/C ratio can hardly be established. In the end this results in lower costs (expenditure) on infrastructure, while the direct economic profit is satisfied. The lowering in England is mainly accredited to a lowering of production costs by simply decreasing production. England uses a set evaluation method (COBA), that translates all aspects in economic terms and does not consider user benefits. In that, the zero-alternative (doing nothing) is also taken into account, clearly a cost-reducing factor. The application of the method is evaluated by the national government without the involvement of subnational actors, this also reduces transaction costs. Whether this decrease in transaction costs actually happens is less evident, given the length of decisionmaking and the difficulty in establishing agreement on research data and decisions.

By coupling public and private forces, the situation in the US is less homogeneous and probably more favourable. Several governments encourage each other to develop creative financial constructions, so that the effects of lower expenditure on economic benefits are mitigated. The non-economic benefits of infrastructure in both countries are low. Clear indication for this is presented later in this report when we discuss the statistics of infrastructure. In the San Francisco Bay Area, an integral approach to infrastructure construction was adopted, including many non-economic criteria. For that reason, it has become a Continental-European/American hybrid.

### 2) *Continental Europe*

Advocates of a supply view on infrastructure and an orientation on benefits prefer countries with high INT and COR scores. Integralism promotes attention not only for business-economic but also macro-economic and various spatial and ecological interests when looking at traffic issues. Corporatism results in estimates of positive and negative externalities, as they are experienced by various parties. The line of reasoning is that since these effects in the production process are translated by actors to third parties, they ought to be internalised via collective action. While all of these

*inefficient effects in a restricted sense* probably occur, but are difficult to assess, arbitrary choices are made with respect to their relative weight in the larger societal cost-benefit balance. Since a broad concept of benefits will raise the B/C ratio, the construction of infrastructure on policy analysis grounds is to be expected.

Nonetheless, there are important differences in nuance between the European countries. The broadest concept of societal benefits exists in Germany, where almost all business-economic, macro-economic, ecological, city-planning and politically opportune effects have their place in the decisionmaking framework. The *Standardisierte Bewertung* is an institutionalised example of this. It is remarkable that the application is, time and again, very precise and that representatives of relevant organisations in the project team are involved in applying the method (TNO-INRO 1991, KUB & TNO-INRO 1997). The production and transaction costs are high, as are the benefits, especially in the spatial and ecological sphere. Switzerland also uses a very broad concept of infrastructure benefits, but the belief in integral policy analysis is traditionally smaller. The approach there is one of planning of the transport network by government and transport companies and a democratic test by the population who are expected to independently weigh their interests.

France, on the other hand, focuses strongly on traffic and macro-economic benefits of infrastructure and less on spatial and ecological issues. This is especially visible in railroads that emphasise societal profits for investments, contrary to the partial multi-criteria approach in Germany. France, therefore, also has high production costs and benefits, but more in the macro-economic sphere. The transaction costs, however, are remarkably low, evidenced by the, inter alia, extremely short period of decisionmaking and the limited opportunity for research.

Like other European countries, the Netherlands believes in more than only financial criteria. The environment and the concentration of urban areas require attention. Assessment methods exist, but their use is hardly systematic: they are only used when parties feel the need to do so.<sup>70</sup> As a result, the dissemination of the type of benefits depends on the type of project. The largest projects around main ports and distant connections are highly motivated by macro-economic arguments, while many investments in public transportation are argued in terms of spatial and environmental benefits. Thus, constructed roads are justified on the basis of transport science considerations on network completion. An absence of standardised assessment also results in production costs, transaction costs and benefits which are highly ad hoc by nature. In general, both types of costs are relatively low, but rising. Economic benefits appear reasonable, although traffic statistics do confirm the image of a country very sensitive to congestion. Much attention is given to planning issues, although these are not as systematically researched as the 'societal benefits', but more as instruments for political gain.

To summarise, a competitive institutional structure eliminates 'useless slack' on benefit criteria, while a cooperative structure invites the 'invention' of more criteria. Those opposed to high transaction costs will generally opt for France and England since projects have to be executed and not continuously changed (low federalism and democracy). While those who would never accept an over- or under-production of roads and railroads will value an exact fit between supply and demand of infrastructure. This requires a delicate negotiation process between higher and lower governmental levels and between state and citizens. This comes with substantial veto power (high federalism and democracy). Here, rising transaction costs are less important than decreasing production costs and/or increasing benefits. In this case, the USA and Switzerland are examples.

A distribution of countries according to good, average or bad scores cannot be presented. That would require a determination about the value of costs and benefits, a determination which cannot be justified on methodological grounds.

Concluding, the three alternative approaches to process quality give diverging results. Speed points to France as the winner, while all others are rather slow. But an institutional designer wishing to take transplants from France has to remind himself that the accompanying losses in terms of democracy lead to a very high citizen dissatisfaction. Contentment among *interested* players is high in Germany and Switzerland. It is also high in the Bay Area, lower in the USA and the Netherlands and lowest in England. Satisfaction among *involved* actors is predictably high everywhere.

#### 7.4 Product quality according to four indicators

In section 7.4 the quality of the infrastructure systems is explored to see if there is any relationship between M and Q.

##### *The imperfect relation between institutional process and infrastructural product*

Institutional structures influence the way in which financial priorities are set. These effects of this prioritisation can be subsequently recognised in the way the transport network has been constructed and how it functions. One way of providing the dimensions in the institutional approach developed in this report with explanatory or predictive power is by relating the institutional structure and aspects of infrastructure in various countries. In other words, how are infrastructures influenced by institutional structures? While making this connection is promising some important nuances will have to be kept in mind:

- 1) Although we assume a connection between institutional structure and characteristics of the infrastructure network, this is not a one-to-one relationship. The spatial structure of countries or regions may represent an especially

disturbing variable. Large, sparsely populated areas suffer less from congestion than small, densely populated areas, but need more money to 'cover' the territory. Furthermore, geological circumstances differ, so that in some places construction is substantially more expensive. This is, for instance, the case in mountainous Switzerland. The TNO-INRO studies (1995, 1996) comparing the Randstad, the Ruhrgebiet and the Flemish city triangle reveal that many differences in quality and capacity of infrastructural networks are explained by spatial characteristics. Geographical settlement patterns make a particular network structure more obvious than another. Also, a connection exists between the spatial concentration/fragmentation and the administrative concentration/fragmentation, as indicated by the NEI (1991). This interesting issue will not be elaborated here, but where spatial structure has a determining influence in addition to the institutional structure, this will be mentioned.

- 2) The materialisation of decision-making in physical works takes time. This means that the characteristics of the infrastructure network may date from institutional structures of some time ago. In order to demonstrate the effect of institutions on physical production, we ought to compare the institutional structure of decades ago with the current infrastructure. Such research is not feasible for practical and methodical reasons.

However, institutions often share a highly sustainable character. Although elements may change over time, the main structure is often the same since it is the manifestation of secular, deeply rooted thought and action patterns.

#### *The continuity of institutional structures*

Economists, political scientists and sociologists have studied institutional structures as they existed when railroads came into being in the 19<sup>th</sup> century. In general they are convinced that much continuity exists in the way that countries tackle policy problems. Much of what was common in the 19<sup>th</sup> century is still relevant. In this light we then should regard the following remark by Dobbin (1994),

during the nineteenth century nation-states developed institutions for organizing economic life that paralleled those they used for organizing political life. (...) When nations face new policy dilemmas they design new institutions around the principles of existing institutions. (...) I will argue that policy approaches are reproduced because state institutions provide principles of causality that policy-makers apply to new problems, and not simply because institutions give policy-makers the organizational resources that repeat history (Dobbin, 1994: 2-3).

His message, translated to institutional structures for prioritising infrastructure, is: administrators and designers of structures automatically adopt a familiar line of thought, that they apply time and again to other issues. This study focuses on uncovering the underlying design logic of each country as much as possible. This

enhances our understanding of how countries operate when developing institutional structures, with the intention of displaying strong and weak sides. In his comparative analysis of institutional structures for planning of railroad projects in 19<sup>th</sup> century England, America and France, Dobbin arrives at some conclusions that are remarkably close to those in this study. The following quotes are remarkable, the first about the contemporary situation, the second about that of the last century:

Why do nations pursue such different industrial policy strategies today? The United States enforces market competition and eschews state leadership in virtually every state industry. Meanwhile, French state technocrats orchestrate sectoral growth from above, and Britain bolsters firms against interference from both markets and state officials. (...) Americans aimed to create a private system of railroads using public inducements. The French aimed to create a public system of railroads with the help of private capital. Britain's early financial policies were genuinely *laissez faire*: the state did nothing to promote or regulate private finance (1994: 1, 58).

England was characterised by a practice in which enterprises and subnational governments were governed from a distance by central government, without London making real contact or interfering in their processes. The individual enterprise had to be protected against government intervention, as well as against the whims of the market. America was more inclined toward public-private partnerships in which all contributed some and no one was fully in control. They were aimed at inter-organisational networks in which 'community self-rule' and the voice of citizens and representative local governments were given important roles. Technical expertise of individuals was not trusted. The political idea of power distribution in the American Constitution was maintained and considered relevant to the economic reality of railroad construction. The French considered harmonisation and standardisation of railroads the most important goal and this could only be left to technocrats from central government (*Corps des Ponts et Chaussées*). Private capital could only be used for execution matters:

Deputies, ministry officials, engineers and railroad officials saw private decision-making as problematic because it 1) used cost as the primary consideration in decisions, rather than quality and dependability, 2) was oriented to current customer demand, rather than to the nation's long term goals and 3) depended on the unproved technical abilities of private engineers and administrators rather than the proven expertise of state technocrats (1994: 132).

In his research of industrial enterprises throughout history in England, America and Japan, the economist Lazonick (1991) arrived at a comparable observation. England employed the principle of 'individual capitalism', in which loose autonomous groups would separately introduce innovations in the market. America adopted a style of 'managerial capitalism', in which the number of contacts between enterprises is larger but loyalties could be strengthened. Japan presented an example of 'collective

capitalism', where the degree of cooperation between sectors is very high. The system in Japan would appear more similar to that in Germany and France. In his view, collective capitalism is better able to handle contemporary technological complexity than the managerial approach which, in turn, is better than the individualist approach. He predicts that Japan will become the new economic world power, because its institutional structures are better able to deal with new production methods. His categorisation is adequate, but all models are valuable, certainly the American. Every system has its strong points, although it would not harm collective goods such as traffic systems to be matched with a high degree of collectiveness.

Dunlavy (1992), after studying railway policy in 19<sup>th</sup> century America and Prussia, nuances the statement that assessment practices can be directly deduced from institutional structures. Based on current practice, one would expect in 19<sup>th</sup> century Germany that public bodies and public enterprises also financed and organised investments in infrastructure. That, however, is not true. Up to the middle of the 19<sup>th</sup> century, German states left railroad infrastructure largely to the private sector. Normally, the state would have initiated it and while it did have that ambition, Prussia was still a monarchy where the king decided about the construction of railroads. Waterways and roads were 'done' by the state, so that there was little money left for railroads. Had there been enough money, as in Belgium, railroads would have been constructed by the state. For lack of resources it was left to private investors who did not accept state intervention. In that time, higher taxes were only conceivable as a consequence of political liberalisation. It was not until the 1840s - after much public pressure - that state loans were agreed to finance railroads and the existing private railroad companies were nationalised. The enlargement of the power of the *Länder* vis-a-vis the national government was established under the influence of the allied forces after the Second World War. Contrary to England, America and France, Germany has experienced major changes in its state and administrative system since the last century. This limits the possibilities for recognising continuity in the past 150 years.

Institutional principles or ground rules in countries generally enjoy long lives. Understanding them may lead to more selective and appropriate use, as well as prevent the harmful application of principles from other countries which do not fit in the existing tradition. Thus the borrowing of destructive *Fremdkörper* in a host system can be avoided.

#### *Product predictions aided by process knowledge*

The assumption that various types of institutional structures will result in various types of infrastructural networks requires a properly substantiated argument:



*Type 1: Structures with high mutation and high cooperation*

In these structures, substantial alterations of central proposals can be suggested given the large number of administrative and societal veto powers. The variation in ideas is increased. For the parties involved in the assessment process, there are strong incentives to cooperate so the variation is largely adopted in the selection environment.

Such structures leave room for all transport modes and integrate them well both internally and externally; co-production between modes frequently occurs. Given the large number of veto powers, experts' projects and programmes are processed quickly and without too many changes. As a consequence, the constructed infrastructure meets societal demand. The large amount of expenditure is not spent on a large numbers of projects but on spatial fit.

*Type 2: Structures with low mutation and high cooperation*

In these structures proposals by the centre can hardly be changed given the limited number of administrative and societal veto powers. The creation of variation of ideas is therefore limited. For the parties involved in the assessment process, strong stimuli exist to cooperate so that this limited variation is adopted in the selection environment.

Such structures provide room for all transport modes and integrate them well internally, but not intermodally with other modes and are otherwise not very innovative either. Given the limited number of veto powers, experts' projects and programs can be executed relatively quickly and intact. As a result, the amount of constructed infrastructure is more than adequate, but it is used inefficiently. The large amount of expenditure is not spent on spatial fit, but rather on a large number of projects.

*Type 3: Structures with high mutation and low cooperation*

Serious alterations in central proposals can be made in these structures given the large number of administrative and societal veto powers. This enhances the variation of ideas. Parties involved in the assessment process have no incentives or minimal incentives to cooperate so large variation is only partially adopted in the selection environment.

Such structures leave little room for transport modes that cannot maintain themselves in a competitive environment, but when they can, they are both efficient and innovative. Links are created only if they serve the players' direct interests. Given the large number of veto powers, experts' projects and programmes are rarely processed quickly or left intact. As a consequence, the infrastructure constructed meets societal demand. The small amount of financial means is spent on a large number of small projects, which have something attractive for all actors.

*Type 4: Structures with low mutation and low cooperation*

In these structures changes in central proposals can only be proposed to a limited degree given the limited number of administrative and societal veto powers. The variation of ideas is therefore limited. There are minimal incentives for the parties involved to cooperate so the limited variation is adopted in the selection environment to a small degree.

Such structures leave little room for transport modes that cannot compete and stimulate efficiency. They do not encourage innovation in these modes. Given the limited number of veto powers, the lack of a central will for investment is not compensated by the strength of other actors. As a consequence insufficient infrastructure is constructed, and societal demand is not accommodated. The small amount of financial resources is used for a small number of centrally selected large projects. Table 7.3 summarises the characterisations of the various structures:

*Table 7.3 Institutional structures and infrastructural effects*

Institutional structure	Modal split	Size of the networks	Congestion in the networks	Size of investments
<i>Type 1</i> Germany (to some extent), Switzerland and Northrhine Westphalia	Much distribution over modes, much interconnection between modes	Strict accommodation	Temperate congestion	High expenditure on many smaller projects (quality construction)
<i>Type 2</i> France (to some extent)	Much distribution over modes, minimal interconnection between modes	Large capacity	Minimal congestion	High expenditure on some large projects (quantity construction)
<i>Type 3</i> USA, Bay Area (to some extent)	Little distribution over modes, much interconnection between modes	Strict accommodation	Temperate congestion	Low expenditure on many smaller projects (quality construction)

<i>Type 4</i>				
England, Netherlands (to some extent)	Little distribution over modes, minimal interconnection between modes	Little capacity	Much congestion	Low expenditure on some large projects (quantity construction)

Germany is actually between types 1 and 2 and the Bay Area between 1 and 3. The mutation dimension was once again construed from federalism and democracy and the cooperation from integralism and corporatism. This simplification does not result in loss of information for most authorities, except for the two mirror-images the Netherlands and France. The Netherlands and France differ crucially on the federalism and democracy scores, that these have substantial effect on the functioning of the institutional structure and thus on the constructed infrastructure. As a result, the participation of societal groups is relative larger in the Netherlands while local governments are passive. In France, the reverse is the case. Since pressure groups and interested parties are often less supportive of extra infrastructure than governmental bodies, the pulling forces in favour of an increase in capacity will be stronger in France than in the Netherlands. Furthermore, this will be focused more on capacity expansion itself (quantity) than on spatial fit (quality). Since, for the other cases studied, the FED and DEM scores on the one hand and the INT and COR scores on the other hardly differ, a consolidation of these dimensions poses no complications.

For the transport science indicators presented below, we used tables from transport studies of various national ministries, ECIS, TNO-INRO and the UN.

#### *Modal split*

The prediction with respect to the modal split is that England and America concentrate their transport streams on roads (low cooperation), the Netherlands, France and the Bay Area occupy middle positions (medium cooperation) and Germany and Switzerland have a strong spread over various modes (high cooperation). Intermodal connections are furthered by high MUT scores and limited by low MUT scores. Switzerland, Germany and the United States should, therefore, be front-runners on intermodality. The Netherlands and France should be lagging behind and England should be at the end of the list.

Table 7.4 Modal split of passenger transport (passenger-kms in %, domestic transport excluding bike and walking)

Country	Car	Public transport	of which Rail	of which other
Switzerland 1989	80.8	19.2	13.6	5.6
Germany 1991	84.0	16.0	6.6	9.4
Netherlands 1991	83.4	16.6	8.4	8.2
England 1991	87.8	12.2	5.7	6.5
USA 1992	97.8	2.2	1.3	0.9
France 1991	86.5	13.5	7.8	5.7

Sources: V&W 1996, EVED 1991, 1992, US DoT 1996.

The predictions are correct except for the Netherlands, where a medium COO score still leads to a varied modal split. Data for the Bay Area are not harmonised with European statistics, but civil servants state that they are probably between European and American scores. For a comprehensive test of the predictions, a presentation of the modal split of the transport of goods would be required. Figures about these, however, are not suitable for a number of reasons:

- 1) The transportation distance of cargo highly influences the modal split. The countries investigated vary in size, and this results in distortion of figures. Also, national transport, international transport and through-freight are often difficult to separate.
- 2) Neither the weight transported (tons) nor the weight transported multiplied by the number of kilometres (ton-kilometres) are adequate indicators for the importance of freight. Furthermore, the difference in outcome on both units is enormous. Switzerland, for instance, scores 10% for rail in tonnage and 41.8% in ton-kilometers. In other countries these figures are more comparable.
- 3) The presence of waterways is a disturbing variable for making expected connections since it requires minimal financial resources for construction and maintenance. A substantial part of freight in the Netherlands is by inland waterways. It is unclear to what mode this transport would be allocated in the absence of waterways. The number of waterways in Switzerland is negligible.
- 4) The measurement of modal split data is complicated. Many data are not registered or are only registered per individual transporter. National aggregate data are incomplete and inconsistent.

Nevertheless, on the basis of secondary sources, we can make the following remarks:

- 1) In all countries, road dominates.
- 2) The share of inland waterways is very small in Switzerland. In terms of tonnage, rail is limited, but in terms of ton-kilometers it is about half.
- 3) In Germany, inland waterways and rail, in particular, are important, even though roads occupy the largest share. In Northrhine Westphalia, inland waterways are more important than rail.
- 4) The share of inland waterways is large in the Netherlands even though road transport remains largest in terms of tonnage. The share of rail in the modal split is less than in any other country.
- 5) In England, road dominates even more than in other countries and the share of inland waterways is negligible. Rail is used more frequently than in the Netherlands and less than in other countries.
- 6) The road is less dominant in the USA than in other countries. The use of inland waterways is limited but not negligible. Transport of goods by rail is important - greater than 40% in terms of ton-kilometres. The large distances in the USA, combined with liberalisation, have resulted in profitable railroad enterprises.
- 7) Inland waterways are not well developed in France, relatively unimportant and, in fact, declining in importance as well. The share of rail is smaller than in the Low and Germanic countries and larger than in England.

In light of the unequal availability of inland waterways, the freight transport statistics are about what we expected. The only striking conclusion is success of railroads in the USA. This may be explained from the fact that geographical circumstances and the integration of several modes into one integrated, intermodal transport enterprise resulted in a situation where freight by rail was profitable.

Intermodality can hardly be expressed in data, nor are data available; numbers of terminals are not very meaningful. Effects can be found more easily in how the modes interact. Thus, we can see that in Germany and Switzerland public transport companies increasingly use each others' rail tracks and restore old tracks for new purposes. Also, the development of transfer-points and the coordination of service delivery are more advanced in the Germanic countries than elsewhere. These issues are under consideration in the Netherlands, and France largely develops the various types of public transport separately. Due to the almost lack of public transport in the USA, one can hardly speak of intermodality. In the Bay Area, however, where collective transport is important, the independent public transport companies more frequently engage in co-productions in service delivery in order to improve the connections between their lines (Chisholm, 1989). In England the disintegration of and competition on the 'networks' is the biggest issue. Comparable conclusions can be drawn for freight. 'Intermodal hubs' in the USA are economically important. The

first integrated intermodal transfer point in Europe was completed in Bremen. By now some 25 *Güterverkehrszentren* exist in Germany. Sea transport, rail, road and inland waterways are connected to these. Switzerland is not a country with large transfer-points, but the *Huckepackverkehr* (trucks on train) has developed enormously, more so than in France and Austria (EVED 1992), though the legal restrictions to road transport play a role here. In the Netherlands, Rotterdam is completely intermodal and a policy is being pursued to develop other intermodal transfer points; this is in its starting phases. In France, and especially England, intermodal connections are still something for the future.

#### *Size of the networks*

The prediction with regard to the size of the networks is that England will have a limited capacity (low mutation, low cooperation), the Netherlands will also display a tendency toward under-capacity, depending on the circumstances (low mutation, medium cooperation). France will tend to oversupply (rather low mutation, medium cooperation). In France, the emphasis is more on administrative fit (medium federalism, low democracy), which may lead to an over-investment in projects that are valued by the technocratic elite and an under-investment in spatial fit. In the Netherlands, the attention is directed more toward societal fit (low federalism, medium democracy), which may result in an over-investment in spatial fit and under-investment in network capacity. In general, the capacity in France will therefore be large and in the Netherlands small. Middle positions are expected for Germany, Switzerland, the USA and the Bay Area. In Germany and Switzerland, rail capacity will be higher and road capacity lower, in the USA the opposite is the case.

Table 7.5 *Size of the infrastructure networks I (1993)*

Countries	road length/- surface in square km	road length/- inhabitants per km/1000	length rail net/- surface in km/100 square km	length rail net/inhabitants in km/100,000	length waterways/surface in km/1000 square km
<i>Germany</i>	1.8	7.9	11.5	49.8	1.2
<i>Netherlands</i>	3.1	6.9	8.1	18.1	12
<i>England</i>	1.6	6.7	6.8	28.5	0.4
<i>France</i>	1.7	15.9	5.9	56.6	0.4

Source: V&W 1996.

Figures presented by the Swiss Ministry of Transport (EVED), based on UN data, concern all countries investigated here.

Table 7.6 Size of the infrastructure networks II (1988)

Country	length rail net in km/square km	% multiple tracks	length road net in km/square km
Switzerland	125	32	1734
Germany	122	42	1995
Netherlands	22	77	776
England	69	70	1549
United States	22	--	665
France	63	45	1471

Source EVED 1992.

The two previous tables do not lead to comparable outcomes. Thus, in the first table data on the USA and Switzerland are missing, while in the second table data on the number of kilometers per citizens are lacking. Even more striking is the difference in outcomes for the Netherlands: the statistics in the second table give it a road and rail network that is smaller by a factor 4. Switzerland, on the other hand, is given a very huge rail network, while the SBB - not even such a long time ago - wrote that it had the most limited budget in relation to the number of passengers after the Netherlands (SBB: Bahn 2000, 1989). Since then, not many extra kilometres have been constructed. Yet, on the basis of this, some conclusions can be made:

- 1) The networks in England and the USA are limited, as expected.
- 2) The German and French networks are extensive, especially rail. The Swiss networks are quite sizable according to these figures, but it is possible that extra cantonal data have been added.
- 3) The exact size of the Dutch network is unclear. It is true, though, that the infrastructure networks in the Randstad are less extensive than in the Ruhrgebiet. Intensive service delivery through efficient use of (limited) infrastructure is a common practice in the Netherlands - this makes the current network sensitive to growth of traffic.

TNO-INRO write about the road networks in the Ruhrgebiet, Randstad and the Flemish city triangle:

The highway network in the Randstad is substantially more pressured than in the Ruhrgebiet and the Antwerp-Brussels-Ghent region. The day-intensity per lane is on average 20% higher. In all three regions, the most pressured connections are found around and between the large cities. (...) In addition, the supply of other through-going roads is far behind the supply in the Ruhrgebiet and around Antwerp-Brussels-Ghent. In the Randstad there is no cohesive road network contrary to the other two regions. As a consequence there are more and shorter replacements via the highways (TNO-INRO 1996: i-ii).

Additionally, they supply the following table:

*Table 7.7 Size of road networks in three regions*

Area	Network length in km/1,000,000 inhabitants	Average number of lanes	Lane km/1,000,000 inhabitants
Randstad	99	4.87	480
Ruhr Area	118 (+ 19%)	4.42	523 (+ 9%)
Flanders	105 (+ 6%)	5.44	571 (+ 19%)

Source: TNO-INRO 1996.

Earlier, TNO-INRO (1995) concluded that the quality of public transport service delivery in the Randstad is good in comparison to other areas, but the infrastructure was limited and intensively used.

By way of summary the Randstad is characterised by a small but intensively used rail infrastructure network. There are approximately 170 kilometers of rail tracks in the Randstad per million inhabitants, while there are 236 kilometers in the Ruhrgebiet and 305 in the Antwerp-Brussels-Ghent area. The frequencies are much higher, so that the number of car kilometers per million inhabitants is roughly the same.

All things taken together, the predictions about the size of the infrastructure networks are good.

#### *Congestion in the networks*

Table 7.3 predicts that the Netherlands experiences a mild form of chronic congestion problems while England experiences it more strongly, and France experiences hardly any congestion. The other countries experience 'manageable' congestion.



Table 7.8 Saturation of infrastructure

Country	Average use of road net in vehicle km/ length road net in 1,000,000/km (1992)	Average use of rail net in train km/ length rail net in 1000 train km/km (1993)	Use waterways of class IV and higher in 1,000,000 ton km/km (1992)
Germany	0.83	21	18
Netherlands	0.87	25	18.5
England	1.06	22	0.2
France	0.49	12	4.5

Source: V&W 1996.

Another indicator for the same phenomenon is provided by ECIS (1996) in table 7.9. With respect to congestion in the USA, only data for urbanised areas have been collected, and then in quite a different manner than in Europe. These data include, for instance, recording car hours of delay per day per 1000 people and the costs of congestion per individual of the population. In these terms, the Western and North-Eastern states, where you will also find the largest cities, appear to suffer most from congestion: San Bernardino River (California) with 200 hours per 1000 inhabitants per day and \$870 per person, San Francisco-Oakland (California) with 180 hours and \$760, Washington D.C. with 180 hours and \$740 and Los Angeles (California) with 160 hours and \$660. Given the different measurement methods and the very different spatial structures, comparisons between the USA and Europe are not particularly useful.

Table 7.9 Percentage of road connections experiencing congestion (in hours)

Country	0-1	1-2	2-3	3-4	>4
Switzerland	93.6	0.0	0.0	0.0	6.4
Germany	92.1	0.6	0.8	1.2	5.3
Netherlands	85.2	3.8	2.8	3.1	5.2
England	75.9	3.7	6.5	2.8	11.1
France	95.5	0.0	0.5	0.5	3.6

Source: ECIS 1996.

There are no comparable statistics for rail, but ECIS provides general indications: Great Britain, the Netherlands and Switzerland do less well in terms of congestion on rail, and in that order. France hardly has any problems, and Germany experiences pressure in some regions such as Berlin, the Ruhr, and Rhein-Main. No data are available for the USA.

The predictions of under-capacity in the Netherlands and England and over-capacity in France are clearly demonstrated in the tables. The 'limited congestion' in Switzerland and Germany is expressed in middle positions. Some congestion can be efficient (it is not wise to build so much that there never is a traffic jam), but it must remain manageable.

#### *Level of investments*

Table 7.3 predicts that the infrastructure expenditure is lowest in England and America (low cooperation), and highest in France and the German-speaking countries (high cooperation). Middle positions are expected for the Netherlands and the Bay Area. In England (low federalism and democracy) and France (medium federalism, but low democracy) there is much attention for quantity construction, while in America, the Bay Area, the German-speaking countries (high federalism and medium to high democracy) and the Netherlands (low federalism, but medium democracy), there is much attention for quality construction - either to protect nature or through higher expenditure on rail.

The ECIS figures are as follows:

*Table 7.10 Infrastructure expenditure, 1993 standardised definitions including maintenance (1994 prices)*

Country	Total/ capita	Road/ capita	Rail/ capita	total % GNP	road in % GNP	rail in % GNP
Switzerland	478	302	166	1.55	0.98	0.54
Germany	252	167	54	1.37	0.91	0.29
Netherlands	151	88	37	0.85	0.50	0.21
England	139	94	30	0.97	0.66	0.21
France	233	147	68	1.22	0.78	0.36

Source: ECIS 1996.

American expenditure definitions are not standardised with the European definitions and are thus not incorporated in this table.

The figures that the Dutch Ministry of Traffic and Water Management (1996) provide differ slightly since the situation for England is a little less and for the Netherlands a little more favourable. This is the case for both roads and railroads. In general the outcome is the same. The report also provides figures on inland waterways:

*Table 7.11 Expenditure for waterways (1995)*

Country	Investments per capita (in fl 1.00/inhabitant)	Investments in waterways/length of waterway network (in fl. 1000/km)
Germany	37	290
Netherlands	44	140
England	0	0
France	6	50

Source: V&W 1996.

The low figures for the United Kingdom and France are not really surprising: their inland waterway network is very small and they choose to keep it that way. The relationship between Germany and the Netherlands is remarkable: the Netherlands is the waterway champion, but appears to pay relatively less attention to the network than Germany.

The tables confirm the prediction about Switzerland, Germany and France as strong investors. In the Netherlands and England, the costs for resolving congestion points are apparently too high.

Infrastructure construction is less easy to express in figures with regard to quality. Qualitative indications can be provided. Spatial fit in Germanic countries and the Netherlands is often established through high investments in public transport systems, high expenditures on tunnels that preserve nature areas or track adaptations to preserve inhabited areas and nature areas. Both in the Netherlands and the USA, the principle of compensation is relevant, where the demolition of nature is compensated through the creation of new nature areas. In America, nature protection is also pursued via non-attainment areas; these are areas where construction is totally prohibited (see chapter 5). In France, we predict that infrastructure capacity is considered more important than spatial fit in light of the relationship between infrastructure capacity and congestion with regard to investments. Also, the maintenance of infrastructure is not considered important (V&W 1996). The same is

the case in England derived from the fact that increased pressure of environmental interest groups is not answered by better spatial fit, but by withdrawing all projects considered problematic. A study by Hendriks (1996) showed how ring roads were constructed deep into the city of Birmingham with unpleasant consequences for the living environment, while Munich made substantial investments in systems of local and regional public transport.

Despite the lack of clarity caused by spatial structures and the time-span between decisionmaking and realisation of infrastructure, a clear link exists between institutional structure and infrastructural outcomes. This conclusion has not been substantiated statistically above, and therefore requires further exploration.

Chapter 7 has resulted in a number of quality judgements about the institutional structures in the countries under study. Though they do not unanimously point in one direction, it becomes clear that Germany, Northrhine Westphalia and the USA, in particular the Bay Area, have very robust scores. Switzerland also does well, but it has a very low decision-making speed due to many veto powers and relatively rigid legal procedures. The other countries on the whole deserve less imitation. But institutional transplants should not only lead to better outcomes, they also have to fit within the system they will be implanted in. It is this aspect that chapter 8 will deal with.

## 8. Families of nations and institutional transplantation

*The suitability of institutional transplants for a given host country is tested using the concept 'families of nations'. Chapters 6 and 7 have focused on the first requirement of adequate institutional transplantation: procedural rationality. Chapter 8 will focus on the second one: suitability. Not all innovative institutional transplants will land on fertile soil in the host country. Compatibility indications can be obtained with the aid of the term 'family of nations'. A family of nations consists of countries with similar legal styles and/or cultural value orientations. Families of nations for the six countries in the selection are distinguished, both at the institutional and constitutional levels, which will permit a well-informed estimation of the fit between the basic structure and culture of the host system and the transplant's donor system background. Transplants do not necessarily have to derive from a country in the same family (transplantations from a different family may be quite fruitful), but the institutional designer must be aware of possible complications that may arise after adoption.*

### 8.1 Constitutional ground rules en institutional elaborations

The institutional designer proposes adaptations in the existing institutional structure based on inspiring examples. Any change in institutional elements, however, must fit both structurally as well as culturally. A more general 'constitutional' functioning is hidden under the current institutional patterns. The incorporation of institutional elements which do not fit in the pattern of such a constitution will be *Fremdkörper*: they will have no, unpredictable or even counterproductive effects. Hesse & Benz, two German administrative scientists, call these functional principles *Grundregeln* (ground rules). About these they write:

With the help of these *Grundregeln*, the 'institution' constructs a 'theory' about its own functioning, about the way in which institutional structures are to be formed, about the way they are to be transformed into concrete policies during the implementation process, and about which concrete requirements they must meet. In this way, the institution creates an 'image' of itself, enabling it to relate its functioning to its own structures. The term *Grundregeln* here is not only used in the sense of the constitution as an organising principle for states. What is meant with *Grundregeln* here is rather - to stick to this example - any and every interpretation of the constitution which has become the accepted, dominant interpretation (Hesse & Benz 1990: 59-60).

It is important to note that these ground rules concern not only central legal principles, but also cultural cognitive principles. The distinction between structural and cultural ground rules will be adopted below. In this section, ground rules in which the institutional structures are embedded are discussed.

Ostrom and Kiser (1982) distinguish three worlds of action, that help us understand the differences between ground rules, institutional structures and operational decision-making. These levels are (Toonen 1990: 38):

- 1) *Constitutional level*: the whole set of legal and socio-cultural conditions, rules, norms and values that provide the context in which decisionmaking processes and relations take place. Hesse and Benz (1990) call these *Grundregeln*.
- 2) *Institutional level*: The system of juridical, financial, political and organisational relations between various government units within a state structure. In this study, this level is called the institutional structure and often coincides with a policy sector.
- 3) *Operational level*: the whole set of exploratory activities, procedures, techniques and administrative forms used by individuals within the constitutional and institutional framework. This operational level concerns the concrete process of decisionmaking.

A central theme in this chapter is the relationship between levels 1 and 2. It is characteristic for constitutional rules that while they determine changes in the institutional level, they are themselves influenced by developments in the institutional structure. Constitutional and institutional levels influence each other (Hesse & Benz 1990). When we add the distinction between structure (formal relations) and culture (informal practices) to this categorisation, we arrive at the following analytical diagram:

Table 8.1 Structure and culture of three worlds of action

Level of the action world	Formal relations (structure)	Informal practices (culture)
<i>Constitutional level (ground rules)</i>	Legal systems	Value orientations
<i>Institutional level (relations)</i>	Formal regulations	Informal codes
<i>Operational action level</i>	Choice of behaviour according to regulations	Choice of behaviour according to social norms

Now that we know how the constitutional and institutional levels of decision-making are related, families of nations will be searched at both levels. Section 8.2 will come up with families at the institutional level. Sections 8.3 and 8.4 will do the same for the constitutional families. In 8.5 they will be compared.

**8.2 Institutional similarities between the six countries**

The empirical data from chapters 5 and 6 allow us to analyse how often countries have similar scores, and in that way to explore their institutional affinities. By

means of table 8.2 we can determine to what degree countries are similar by taking all 30 institutional characteristics together. The number of similar scores may be an indication of the likelihood to copy the institutional characteristics of another country successfully. The greater the similarity between two countries, the greater the chance that institutional transplant from the source country to the recipient country will bear fruit.

Table 8.2 *Similarities between countries on all 30 characteristics*

Countries	CH	D	NRW	NL	ENG	USA	SFBA	F
CH	--	20	17	5	1	8	9	10
D	20	--	25	11	2	2	8	8
NRW	17	25	--	12	2	3	11	5
NL	5	11	12	--	11	6	6	4
ENG	1	2	2	11	--	18	12	8
USA	8	2	2	6	18	--	16	4
SFBA	9	8	11	6	12	16	--	4
F	10	8	5	4	4	4	4	--

The similarities between the German speaking countries on the one side (though Switzerland has francophone, italophone and rheto-roman speaking minorities) and the English speaking countries on the other are striking, while the Netherlands and France occupy separate positions. Among the Anglo-Saxons, it appears that the English system is, relatively speaking, most comparable with the Dutch; and the Bay Area with Germany. From the Germanic group, Switzerland regularly scores together with France, and Northrhine Westphalia with the Netherlands. Appendix 4 presents the similarity tables per index, which will reconfirm table 8.2's general pattern. We now turn to the constitutional level.

### 8.3 Structural ground rules: legal systems of the six countries

In international comparative law, it is customary to compare a number of distinct legal families; in private law this has been done in the work of Damaska (1986), Zweigert & Kötz (1992), David & Jauffret-Spinozi (1992) and Örüçü *et al.* (1996). With regard to state structure, Mény & Wright (1985), Page & Goldsmith (1987), Dente & Kjellberg (1988), Holterman *et al.* (1989), Toonen (1987, 1990), Salet (1995) and Hesse & Benz (1990) have investigated country categorisations on the basis of a

number of characteristics. There is no consensus between these experts about the families, but based on their work and some choices made by this author, a systematic overview can be presented.

Zweigert & Kötz point to the notion of 'legal families' based on origin: there are a number of clear 'parents' in the past. Thus, France has disseminated its Napoleonic principle of unitarism and *Code Civil* to a number of neighbouring countries. The same is the case for England which exported its legal system to large parts of the new world. There are, however, several objections to this exclusively historical approach of families. For instance, countries have copied elements of legal systems from each other in many areas (so that they really have multiple parents) and developed characteristics of their own so that one cannot categorise them to one family. Furthermore, historical dynamics may result in a country moving gradually from one to another family ("transition", see Örtücü, 1996). Instead of designing taxonomies on the basis of origin, many authors attempt to design them on the basis of structures, broader historical developments or cultural similarities; this has also met with limited success. About these attempts, Zweigert & Kötz argue,

The unsatisfactory feature of most previous attempts to distinguish the legal families and to attribute individual systems to them is that they are one-dimensional, that is, they seek to make everything turn on a *single* criterion. (...) In our view, the critical thing about legal systems is their *style*, for the styles of individual systems and groups of legal systems are each quite distinctive. The comparativist must strive to grasp these *legal styles*, and to use distinctive stylistic traits as a basis for putting legal systems into groups. The concept of style which originated in the literary and fine arts has long been used in other fields. Style in art signifies a distinctive element of a work or its unity of form, but many other disciplines use this fertile concept to indicate a congeries of particular features which the most diverse objects of study may possess (1992: 68).

They develop their taxonomy on the basis of an interplay of factors such as historical background, distinctive ways of legal thinking, sources of law and ideology, and they develop 8 families including the Roman, the Germanic, the Nordic and the Anglo-Saxon families which can be found in Western countries.<sup>71</sup> While the concept of a family of nations is an interesting concept to start with, it is less useful as an end result: it is crucial to understand the nuances. Thus Switzerland could be categorised with the Germanic family and the Netherlands with the French, but when a certain number of specific characteristics remain concealed, an information loss would occur. In the following diagram, we present an overview of the most important founding legal principles. David & Jauffret-Spinosi (1992) call this the legal doctrines, the framework in which laws are made and interpreted. We distinguish 8 characteristics:

1) *Code or precedent as source of law*

Is regulation usually codified or is precedent (jurisprudence) used by way of example? In the first case formal legislation is the main source for the interpretation of justice.



In the most extreme case, administrator and judge are considered the voice of the law. Normally, however, law requires interpretation as applied within the context of a given case. In the second case examples from the past are used as a source of law, and these are applied rather strictly. Legal development takes place via the creation of analogies and distinctions between different cases.

2) *Systematisation or fragmentation of the judicial system*

Is legislation captured in general and valid principles (unified) or is there a heterogeneous total of statutes without coherence? In the first case the 'legal system' as well as the conceptual framework are systematised in a logical structure. This can be done both with more abstract-theoretical as well as with popular principles. In the second case there is no overview of all legal rules so we cannot speak of a system.

3) *Content or process*

Does policymaking occur by the law itself or are procedures and processes designed according to which assessment and policymaking take place? In the first case the analytical assessment norms are mentioned in legislation and regulation. In the second case the behavioural styles or norms to which actors must conform are created; these are 'secreted in the interstices of procedural law' (Zweigert & Kötz 1992: 193). Procedural law usually means that actors are accountable more on formal than on substantial grounds.

4) *Historical or a-historical approach to law*

Does new legislation hope to slightly alter the course of historical development and incorporate incremental changes without disturbing continuity, or does new legislation introduce rationally designed new orders on the basis of a new ethic? In the first case changes are perceived as incremental and organic. In the second case discontent exists about the conservative obsolete order and a break in the trend is pursued.

5) *Professionalism or democracy*

Are officials in administration and justice usually trained and appointed on the basis of norms developed by their profession or are they elected? In the first case public positions can only be occupied by experts. In the second case every citizen can, in principle, hold authority.

6) *Power-sharing or power separation*

Do administrative bodies execute their tasks in mutual dependency or is their authority divided as much as possible? In the first case one can speak of a cooperative or consensual administration where administrative bodies are intertwined. In the

second case duality is created in which all administrative bodies focus on their own tasks and mutual dependencies are minimised.

7) *Federalism or unitarism*

Do subnational administrative bodies possess clear authority anchored in a constitution or do they depend upon the tasks delegated to them by a higher authority? In the first case subnational governments possess strong independent positions. In the second case the central legislator decides their power, either by giving them freedom - unless he wishes to regulate himself (autonomous unitarism), or by only giving them authority explicitly delegated by law (*ultra vires* or co-government unitarism).

8) *Territorial or sectoral government*

Are juridical decisions generally made by administrators bound to a particular territory or are decisions made by government departments? In the first case contradictory decisions and diverging opinions will result in struggle between government levels. In the second case sectoral bodies focused on a particular issue will struggle with each other.

As expected the legal similarities within the Roman Family, fathered by France, are large. Only the organic state doctrine of German origin appears to have had some influence in the Netherlands (1987, 1990). Zweigert & Kötz characterise the Roman system as follows:

Continental judges, in Italy and in France rather more than in Germany, are still imbued with the old positivistic idea that deciding a case involves nothing more than applying a particular given rule of law to the facts in issue by means of a categorization; indeed, they often entertain the rules of law to be 'applied' as statutory texts and that, by contrast, rules and principles judicially developed can only be officially recognized if they have 'hardened into customary law' by somehow attracting a 'communal endorsement of their validity evidenced by practice'. This old-fashioned doctrine of legal sources is obviously at odds with what we can see actually happening on the Continent when the judges set about discovering the law today, but the style of judgments of the highest courts of France, Italy and even Germany shows how stubbornly these ideas remain alive (272).

The age old idea of Montesquieu, that law officials are only voicing the law, plays a background role. Örüciü (1996) regards the Netherlands a legal mix ('purée') between French and German influences with specific choices. Thus Dutch state law is a combination of Napoleonic (French) and non-Napoleonic (Northern European) structures. In Napoleonic states, local governments are guided by central government, in the other continental systems a much stronger local government exists, as in Germany and Scandinavia. The Netherlands is a mix of both since it was forged into a unitary state during the French presence but provided local

governments with juridical autonomy under the influence of the German-oriented Thorbecke (Toonen, 1987). About this, Raadschelders remarks:

Table 8.2 *The structural rules of six countries*

Country	France	Netherlands	Germany	Switzerland	USA	England
Family	Roman	Roman	German	German	common law	common law
Code/precedent	code literally	code literally	code literally	code interpretation	using precedent	using precedent
System/fragmentation	system in popular terminology	system in popular terminology	system in abstract terminology	system in popular terminology	fragmentation	fragmentation with elements of system
Contents/-process	contents	contents	contents	contents	process	process
History/rational order	rational order	rational order with eye for history	history	history	rational order	history
Professionalism/democracy	professionalism	professionalism	professionalism	democracy	democracy	professionalism
Distribution of power/ division of power	power sharing	power sharing	power sharing	partial power sharing	power division	power division
Federalism/unitarism	autonomous unitarism	autonomous unitarism	federalism	federalism	federalism	ultra vires unitarism
territorial/sectoral	territorial	territorial	territorial	territorial	sectoral	sectoral

The German influence is quite nebulous when it comes to bureaucracy, but the idea of organic government and detailed legislation was dispersed through North-Western Europe, and certainly found its way to the Netherlands, where it blended with the Napoleonic heritage (Raadschelders: 14, in NIG 1995b).

Germany and Switzerland both belong to the Germanic family, but the differences are relatively large. This is not so strange when one considers that Germany and Switzerland have influenced each other conceptually but neither has copied the system of the other: both are original parents. In the comparative law study, Germany is known as a nation where,

...by rigorous logical-mathematical deduction they inferred rules of increasing particularity from the most general principles of the law of reasons and the law appears as an artful and articulated system, orderly and comprehensible. (Zweigert & Kötz, 1992: 142).

The renowned *Gründlichkeit* of the Germans is probably an influence here. In sharp contrast stands the Swiss *Code Civil*,

The new code was drafted in a popular and clear *language*, had an easily comprehended, relatively open *structure*, and instead of the abstract 'casuistry' which the BGB (The German Code civil) carried even to the detail, made its statutory rules *deliberately incomplete* so that often it only sketched in an area within which the judge had to operate, using the standards of what was appropriate and reasonable and equitable (Zweigert & Kötz 1992: 177).

The same can be said for other legislation in Switzerland. The Common Law legal systems are very different from the other families. The entire application of English law breathes pragmatism and a disdain for uniformity.

...legal technique, instead of being directed primarily to interpreting statutory text or analysing concrete problems so as to 'fit them into the system' conceptually, is primarily interested in precedents and types of case; it is devoted to the careful and realistic discussion of live problems and readier to deal in concrete and historical terms than think systematically or in the abstract (188).

The legal system of the United States may have originated with the English, but it has since developed its own characteristics. It is federalised, democratised and more dynamic. Officers of the law are often more willing to deviate from jurisprudence and quicker to copy inspiring examples from other systems (David & Jauffret-Spinozi 1992). In addition, the application of law in the USA is, in fact, considered in terms of economic transactions. The legal economist Posner made fame with his *Economic Analysis of Law* (1977) in which he explains the line of thought behind 'efficient justice':

Its hypothesis is that in order to maximize the general welfare the limited resources available in any society should be made available to those individuals who can use them to best advantage. This is normally achieved through exchange transactions whereby a person gives up certain assets which have a greater value for him than those he gives up. Under certain conditions the situation produced by such operations is 'efficient', since all scarce resources have been channeled by market operations to the place where their use is of the greatest value, and the general good cannot be increased by any further exchange operations. (Zweigert & Kötz 1992: 256-257).

The application of legal rules is thus even more pragmatic, since pragmatism itself is not a dogma, but serves to increase welfare.<sup>72</sup>

In section 8.3, we will analyse the *cultural* ground rules of each of the six countries more closely.

#### 8.4 Cultural ground rules: value orientations in the six countries

Dobbin (1994) investigated the institutional structures of France, England and the USA during the time that railways were constructed in the 19<sup>th</sup> century. He concludes that the culture of a country and the way people do things is highly related to institutional structure. Culture itself is hard to measure, but can be captured in rules and practices.

In the history of railway policy, cultural meaning appears to be located squarely in tangible social practices. (...) The central principles of economic rationality varied dramatically across these three countries. Most treatments of economic culture suggest that economic practices are influenced at the margins by cultural practices or social networks. Here they seemed to be influenced at the very core by cultural practice, which suggests that the central rules of economic rationality that neoclassical theory posits may simply be abstractions from a single strong case (namely the Anglo-Saxon case, MJ) (Dobbin, 1994: 218).

Hampden-Turner & Trompenaars (1992) also believe that economic activities are not steered by economic laws such as the 'invisible hand', but are instead steered by the invisible hand of cultural values and preferences. These deeper characteristics determine the strengths and weaknesses of economic systems as well as which economic laws one believes. By way of substantiation, they provide an example which reveals strong parallels with what we called *supply and demand views upon infrastructure*. Citizens of the USA, England and the Netherlands believe that when producers concentrate on their own interests, they will, in turn, give their customers better service. The fact that this, indeed, happens only reinforces the impression that the accumulation of self-interest will result in the general interest. They then present the German and French 'supply-model', where customer and society are served as best as possible. Entrepreneurs automatically profit from this. Dobbin and Hampden-Turner & Trompenaars acknowledge that efficiency comes in many shapes, and different cultures highlight and cultivate different elements of it.

Policy paradigms consist of both practices, in the form of policies, and means-ends designations, in the form of governmental action. They reinforce industrial cultures by creating and sustaining particular behavior patterns among economic actors, and by symbolizing those patterns as efficient (Dobbin, 1994:19).

Different systems are good in different elements of efficiency, and none of the approaches is really better or worse. They are all limited and require elaboration. Part of the importance of cultural comparisons is also in reflecting on one's own practice in comparison with others, and in acknowledging stronger and weaker aspects of one's own institutions so that the economic structure can be improved. Thus, countries such as the USA and England, which strongly emphasise the universality of rate of return, productivity figures are strong in meeting concrete and strongly formulated goals and norms. On the other hand, less tangible issues go unnoticed and a general overview is lost as a result of the focus on one part. Another important flaw of profit or rate of return figures is that they do not precede a customer-orientation, but appear only after the data are known. The customer does not achieve satisfaction based on the profits of enterprises. Market share, personnel judgments or customer judgments might well be more effective warning systems.

The problem with universals is that they can progressively lose touch with the real clay of industrial experience, especially with the particulars being bought and sold. You mistake the shadows for the genuine satisfactions. (...) A culture attuned to a multiplicity of particulars and differences, in which it seeks to find patterns, may process information more easily than a culture searching for universal or uniform attributes among objects. Manuyama argues that arranging particulars or differences into wholes is a variety enhancing process, whereas looking for universals among objects is a variety reducing process. The problem with 'objectivity' is that those who claim to have it believe they need to look no further, need listen to no one else, and never alter their convictions. They have the 'data' or 'givens'. But those pursuing polyocular knowledge will never be satisfied, never know enough (Hampden-Turner and Trompenaars, 1992: 27, 114).

The moral here is that especially with complex production processes, which transport and traffic systems certainly are, the quality of these process can only be found in the entire pattern, not in 'universals'.

Although interesting, the 'German-oriented' model by Scharpf on economic and political success of countries does not possess universal validity either:

Scharpf reasons that countries are economically and politically successful only to the extent that their institutional structures permit policy responses that are able to induce coordinated strategies, which under given social and economic conditions, support the achievement of politically preferred ends. By designing the operational routine of policy formation and the capabilities of the various participant social agents involved, institutions frame 'the repertoire of legitimate and routinized policy responses' (Hemerijck & Helderman: 8, in NIG 1995b).

Strictly organised coordination processes that function well at a certain point, can become routine after a while, and this may hinder the timely adaptation to a changing environment.

Without explicitly mentioning the idea of families of nations, sociologists and anthropologists also use clusters of countries with comparable or different approaches to problem solving. Hofstede as well as Hampden-Turner & Trompenaars have developed cultural dimensions based on which countries can be compared and clusters can be identified. They have tried not to capture 'culture' via institutional structures, but to deduce it directly from questionnaires and surveys. Despite Dobbin's warning that culture as such cannot be measured, it must be said that their studies have been a great contribution to a better understanding of national cultural differences.

With his research group, Hofstede (1997) conducted a large comparative survey about cultural attitudes of employees in IBM plants in various countries. Based on the survey, they could be categorised according to four dimensions with indices, on which countries scored differently. The four indices he defined were:

- 1) *Power distance index* (PDI). Power distance is the degree to which less powerful members of institutions or organisations in a country expect and accept that power is unequally distributed. In cultures with a large power distance, power is considered as a fundamental societal fact that precedes the choice between good and evil. The question of whether power is legitimate is irrelevant. Such an order satisfies the needs of individuals to be dependent and supplies both power holders as well as citizens with a clearly defined role.
- 2) *Individualism index* (IDV). A society is individualist when the mutual relations between individuals are rather loose; everybody is expected to take care of himself and a small number of direct relatives. A society is highly collectivist when individuals are part of strong social groups and bigger families that will protect them in exchange for loyalty.
- 3) *Masculinity index* (MAS). A society is masculine when gender roles are clearly distinguished: men are expected to be assertive and hard and focused on material success; women are expected to be modest and tender and focused on the quality of life. A society is feminine when gender roles overlap; both men and women are expected to be modest and tender and focused on the quality of life. At the macro-level, masculine societies are focused on the highest possible performance, while feminine societies consider care as more important.
- 4) *Uncertainty Avoidance index* (UAI). Uncertainty avoidance is the degree to which members of a culture feel threatened by uncertain or unknown situations; this

feeling is, among other things, expressed in nervous tension and in a need of predictability: need of formal and informal rules.

- 5) *Long-term orientation index (LTO)*. A long-term focus is expressed in frugality and the subordination of interests to goals. Characteristic for a short-term focus are multiple status obligations, a low savings rate, the protection of self-esteem - at all costs, the desire to know better and achieving quick results.

The six countries studied in this book score as follows in these dimensions:

*Table 8.3 Scores and ranks of six countries in Hofstede's dimensions (on index from 0 to 100)*

Country	PDI	Pos	IDV	Pos	MAS	Pos	UAI	Pos	LTO	Pos <sup>73</sup>
CH	34	6.	68	5.	70	1.	58	3.	na	na
D	35	4/5.	67	6.	66	2/3	65	2.	31	2.
NL	38	3.	80	3.	14	6.	53	4.	44	1.
GB	35	4/5.	89	2.	66	2/3	35	6.	25	4.
USA	40	2.	91	1.	62	4.	46	5.	29	3.
F	68	1.	71	4.	43	5.	86	1.	na	na

Source: Hofstede 1997.

Based on this combination of dimensions, clusters can be distinguished. Justification of this clustering is also determined by figures Hofstede presents for other countries than the ones investigated here. See appendix 5 for the scores of a broader range of countries.

### *1. An Anglo-Saxon family*

This is characterised by a low power distance, high individualism, a high inclination to perform, low insecurity reduction and a short-term orientation. The tables by Hofstede indicate that England and the USA, but also Ireland, New-Zealand, Canada and Australia fit this image.

### *2. A Roman family*

This is characterised by a very high power distance, relatively low individualism, an average masculinity and an extremely high insecurity reduction. Belgium and Italy as well as France easily fit into this group.<sup>74</sup> For countries such as Spain and Portugal as well as most Latin American countries, one could say that they are resembling but generally less individualist and less masculine and thus vary somewhat from France.



### 3.A Germanic family

This group is characterised by a low power distance, relatively low individualism, high masculinity, relatively high insecurity reduction and a long-term orientation. Germany, Switzerland and Austria belong to this group. Within the German group, Austria is more German than Germany in the sense that scores which are typically 'German' are even more extreme in Austria. PDI is somewhat lower, IDV is even lower than that; MAS somewhat higher and UAI is a little higher than that.

### 4.A Scandinavian family

This group is characterised by low power distance, low individualism, very low masculinity, very low insecurity reduction and a long-term orientation. Sweden, Denmark and Norway belong to this group.

### 5.The Low Countries

The Netherlands scores alternately with various groups and is therefore, unmistakably, a mix.<sup>75</sup> It is characterised by low power distance as in the Anglo-Saxon and German group, an individualism which is in between the Anglo-Saxon and Germanic group, masculinity comparable to the Scandinavian level, an insecurity reduction level between the Anglo-Saxon and Germanic levels and a long-term orientation comparable to the German and Scandinavian families.

While partially using other dimensions than Hofstede, Hampden-Turner & Trompenaars (1992) also try to categorise countries. In their research, managers of multinational enterprises were asked to respond to a number of statements. These were categorised according to seven dimensions:

- 1) *Universality versus particularity* (UNI): Are all cases dealt with equally or is every case assessed according to its particular features?
- 2) *Analysis versus integration* (ANA): Are problems solved by fragmenting them into components or rather by systematising and synthesising these components?
- 3) *Individualism versus communitarianism* (IND).
- 4) *Internal versus external orientation* (INN).
- 5) *Status through performance or status through ascription* (ACH).
- 6) *Equality versus hierarchy* (EQU).
- 7) *Time as sequence of events versus a synchronised image of time* (SEQ). For this dimension they have the following definition:

Time can be conceived of as a 'race' or as a 'dance'. In a race we dash for the finishing post. In a dance, all the dancers' steps are elegantly coordinated. The first view of time is sequential, the second synchronized. The first encourages products to be worked on one after the other as on an old fashioned assembly line, the second encourages multiple observation to be done in parallel processes, before being combined at precisely the right moment. Both approaches are

valid and useful. But cultures tend to be far more comfortable with one way of working than with the other. (1992: 73-74).<sup>76</sup>

They describe seven countries in their book, of which five are included in this study. Of the countries selected for this study, only Switzerland is missing in their sample. Their ranking of countries on these dimensions is presented in Table 8.4.

Table 8.4 *Ranking of five countries on the dimensions of Hampden-Turner and Trompenaars*

Country	UNI	ANA	IND	INN	ACH	EQU	SEQ
Germany	3.	4.	5.	3.	3.	2.	4.
Netherlands	4.	3.	3.	5.	4.	4.	2.
Great Britain	2.	2.	2.	2.	2.	3.	3.
USA	1.	1.	1.	1.	1.	1.	1.
France	5.	5.	4.	4.	5.	5.	5.

Source: Hampden-Turner & Trompenaars 1992.

From these findings no families can be deduced since the set investigated is too small. The similarities between Great Britain and the USA are remarkable, as are those between the Netherlands and Sweden, the sixth country in their sample. Insofar as one might want to develop country families according to their characteristic cultural scores, the following would be the result:

1. *An Anglo-Saxon family*

This consists of England and the USA and attempts to assess seemingly comparable cases with the same yardstick as much as possible. People have an empiricist orientation in the sense that they do not believe in general or total systems, but rather in the 'tangible'. The sense of community is weak and people are more focused on his own problems than on those in the environment. Success is not based on ascription but on achievement. Relations between people are egalitarian and they are inclined to approach activities as a whole of sequential tasks rather than as parallel processes; time is money and loss of time costs money.

2. *A Roman family*

This group is characterised culturally by an approach in which all cases are individually assessed and not by a uniform norm. It is this group where phenomena are judged in a larger whole instead of various elements. People are also extrovert and rather collectivist. To a large degree, success depends on ascribed capacities or ancestry rather than on measured performance. The psychological distance between

different social ranks is large. Finally, time is perceived as a series of opportunities: when developing more than one 'line' at the same time, it just may be that more opportunities will arise to achieve that goal. In this respect, the USA and France are extreme opposites.

### 3. *A Northern-European family*

The scores of the Netherlands and Germany are average. Given the fact that the scores only concern rank numbers, we cannot present far reaching conclusions. We will leave it at the conclusion that Hampden-Turner & Trompenaars believe that Northern Europe fits in-between the Anglo-Saxon and Roman group.

The cultural differences between the USA and California that Trompenaars kindly investigated for this research are intriguing. Of the seven dimensions, the USA (minus California) and California appeared to differ remarkably in two dimensions.

*Table 8.5 Cultural Comparison between the USA and California*

Dimension	USA without CAL	CAL
Analysis	71.4	60.1
Individualism	75.6	77.2
Internal focus	84.3	61.5

Californians appear to approach problems in a less reductionist manner and are more extrovert. However, California here is a substitute for the Bay Area since better data are not available. Since the Bay Area is significantly more progressive than the rest of California and the USA, we can expect the Bay Area to be less individualist than both California and the USA. California is not less individualist than the USA, however. Thus with the help of the data presented above, this particular expectation cannot be confirmed.

### 8.5 **Ground rules and institutional structures compared**

In this section, the ground rule country classifications will be set against the typology of institutional structures from chapter 6.

First, we have attempted to develop a *country classification of legal systems* on the basis of seven out of eight distinguished characteristics.<sup>77</sup>

Table 8.6 *Legal families of nations*

Characteristics of legal systems	<i>Checks and balances by the people (democracy, federalism)</i>	<i>Checks and balances by authorities (professionalism, federalism)</i>	<i>Authority (professionalism, unitarism)</i>
<i>Justice as a whole (contents, power distribution, system, code, territoriality)</i>	<i>Kommen wir zusammen</i> Switzerland	<i>Ordnung muss sein</i> Germany	<i>L'etat, c'est moi</i> France, Netherlands
<i>Justice in parts (process, power division, fragmentation, precedent, sectorality)</i>	<i>We, the people</i> USA		<i>Objections overruled</i> England

Secondly, Hofstede has provided a *country classification of value orientations* by placing power distance and uncertainty avoidance in a matrix:

Table 8.7 *Cultural families of nations I*

Dimensions	<i>Low power distance</i>	<i>High power distance</i>
<i>Strong uncertainty avoidance</i>	<i>Well-oiled machine</i> German countries	<i>Pyramid of people</i> Roman countries
<i>Weak uncertainty avoidance</i>	<i>Village market</i> Anglo-Saxon countries, Netherlands <sup>78</sup> , Scandinavia	<i>Family</i> <sup>79</sup> Southeast Asia

Source: Hofstede 1997.

Not mentioned in this table, but possibly relevant as well are the various country scores in individualism (very high for Anglo-Saxon countries, moderately high for the Netherlands and Scandinavia and relatively low for the Germanic, Roman and most Latin American countries) and long term orientation (high for the Germanic countries, Netherlands and Scandinavia, low for the Anglo-Saxon, Roman and Latin American countries).

Hampden-Turner & Trompenaars also arrive at a *country classification of value orientations* on the basis of their two dimensions which could be regarded as the managerial or administrative expression of cultural characteristics:

Table 8.8 Cultural families of nations II

Dimensions	Equality	Hierarchy
Integration	Structures networks Germany	Organic order France
Analysis	Western pluralism USA, England, Netherlands, Sweden	Command economy East Germany before the Wende

Source: Hampden-Turner & Trompenaars 1992.

We now add the table presented at the end of chapter 6.

Table 8.9 Procedural rationality in the institutional structures

Dimensions	High mutation/creation (multicentrism)	Medium mutation/storage	Low mutation/creation (monocentrism)
High storage (cooperation)	Type 1 Stable selection environment with substantial variation Switzerland, Northrhine Westphalia	Germany	Type 2 Stable selection environment with minimal variation
Medium storage	Bay Area		Netherlands, France
Low storage (competition)	Type 3 Dynamic selection environment with substantial variation USA		Type 4 Dynamic selection environment with minimal variation England

The similarities between the above tables are striking. The position of almost all countries is very stable, and most of them can thus be viewed as prototypes. France almost always scores in the upper right corner, the Germanic countries almost always in the upper left corner and the USA in the lower left corner. Because of the strong correspondence between structure and culture and between the constitutional and institutional level, one could say that the formal and informal structures are coherent. With respect to the Netherlands, England and the Bay Area, some interesting observations can be made:

*The Dutch position shows strong versatility.* Culturally, it represents a possible middle position between a village market and a well-oiled machine, but structurally it is (still) very much based on France. In structural and cultural terms, the Netherlands belongs to different families, which results in an uncertain positioning in the matrices. The gap between formal and informal structure is greater than in all other countries. **These incoherencies can only be explained by comparing the position of the Netherlands with that of France, with whom it shares structural but no cultural characteristics.**

France, the 'Mother' of the Roman law system, literally depicts officers of the law as implementers. In the modern practice of complex decisionmaking, this is hardly accurate - if indeed it ever was. Cultural studies, however, indicate that the need for rules in France is quite strong. Thus the limited number of general formal procedures are supplemented with many informal rules. Power is highly concentrated among small groups of individuals who can and may determine the interpretation of formal rules on the basis of their own informal rules. The application of procedures in France is always an emergency behind which one can expect hidden and suspicious games with information.

Michel Crozier has referred to France as the 'stalled society', with power structures pitted against each other. Change most frequently comes from outside the organization, e.g. from government initiatives, social movements and new legislation. In this atmosphere of struggle Crozier detected hidden games and the use of information for power purposes, rather than the enlightenment of all the organization's members. French researchers generally regard 'obvious data' used by Americans as naive. Canvassing individual attitudes does alter the social determination of such data or reveal what employees freed of mystification and false consciousness might decide for themselves were they unthwarted by social institutions (Hampden-Turner & Trompenaars 1992: 349).

Given the large power distance and the high uncertainty avoidance, there is no reason to assume that the French have a need for changing their structures. Structure and culture are congruent, and a large gap between formal and informal rules is a part of that.

This is, however, not the case for the Netherlands. As indicated above, the Netherlands and France are polar opposites, and they are both exceptional in the sense that their informal practices deviate strongly from what you would expect in light of their formal rules. Yet, there are substantial differences. France approaches large projects in a grand manner (TGV, *page*) and pays little attention to less visible things (traditional railways, maintenance and waterways), while the Netherlands approaches them in a 'small' manner (the Betuwe rail connection is a classic railroad, TGV was constructed at a late stage, road construction takes a long time), but it does show an eye for important details (electrification of rail-, road- and waterway maintenance). The Netherlands adopted structural elements from France at the constitutional and institutional levels. Institutions such as Rijkswaterstaat and its regional directorates are

characteristically organised on a deconcentrated basis. Indeed, they find their origin in the French period (1795 – 1806). In France these structures may have been modernised, but in the Netherlands they have not (De Jong 1998b). Power distance and insecurity avoidance in the Netherlands, however, are significantly lower. The existence of strict structural rules has thus become a burden: they have to be evaded or interpreted in a flexible manner. According to Hampden-Turner & Trompenaars, the Netherlands is a country full of paradoxes and the Dutch are very capable at reconciling opposing conceptions. By way of example, they quote Duke de Baena, author of *The Dutch Puzzle* (1966), who explains that the Dutch like their independence but nonetheless overload themselves with extensive conventions. Opportunistic behaviour of actors is not possible according to the formal rules, but is accepted as long as the negotiation results are ultimately approved in the formal arena. First, there is an informal open planning process, followed by a formal track proceeding along the formal rules, so that decisionmaking procedures are, in fact, overlapping. The number of formal actors is limited, but the number of informal involvements is much higher.

*England may be a village market in cultural terms, but not in institutional terms.* The explanation is the legal system that, contrary to the USA, is not modernised, federalised and democratised, but still operates with structures dating from a distant past. The disharmony between structural and cultural rules is apparent in the fact that, given the cultural factors, one would expect structural outcomes comparable to the USA; these do not show up in the institutional structure, however. It does not translate into a large discrepancy between the formal and the informal structure. What could explain the fact that the institutional structure in England is so weak in almost all respects? It cannot possibly be coincidental that even the Confederation of British Industry proposes the 'Rhineland model' of consensus formation as a worthwhile alternative for Britain:

The tension between the need for a transport infrastructure to support competitive business and resistance to the inevitable environmental disruption which the construction of such an infrastructure brings is common to all industrial countries. But it seemed to us that these tensions are more constructively resolved elsewhere than they are in the United Kingdom. (...) The essential point which emerges is the importance of consensus. Other European countries reach consensus on the long term shape of their transport policies, consensus which brings stability and consistency in execution and allows businesses to plan for the future. Businesses have greater confidence in long term infrastructure plans announced by governments, because their experience is that those plans, once announced, are carried through. (...) The relatively positive signs about the operation of services in the UK do not reflect the quality of UK transport infrastructure. In general, our infrastructure is worse affected by capacity and age constraints than that serving our main competitors in Europe (CBI 1995: 5, 7).

What mechanism explains the lack of innovative incentives and the lack of will to cooperate?

Corporations are typically run by a system of financial controls. Each unit tries to maximize profits independent of all other units, in an attempt to win more investment pounds from HQ (Head Quarters). Managers are rewarded for achieving and surpassing targets. There is no overall strategic plan among units in the portfolio, no communal relationship or shared vision, and no objective that transcends the profiting of individual units. They are miniatures of the British economy as a whole. Units in conglomerate are, of course, 'remotely controlled' by financial levers and incentives. Remote control is also the traditional habit of British governments. They prefer to sit above the commercial fray, pulling levers, dangling rewards and applying sanctions. This helps to explain the phenomenon noted at the outset that the British know all about the malfunctioning of their economy and will talk rings around any discomfiting theses, while hardly being engaged in any real business at all. The rule is not hands-on but hands-off (Hampden-Turner & Trompenaars 1992: 318).

Maybe it is useful, now and then, to get your hands dirty - even for higher officials in government and private enterprise.

*No separate data are available for the Bay Area* regarding constitutional rules. On the basis of the institutional scores, however, one would expect that it is rather hybrid as is the case in the Netherlands, with American as well as Continental-European characteristics.

#### *Other countries within the families*

The thrust of the argument expressed implicitly and explicitly in the preceding paragraphs is as follows: countries have basic structural and cultural ground rules which combine to form the constitutional level. This in turn influences the institutional level of the various policy areas. On top of that we find the operational level, i.e. the world of concrete actions. Lastly, as a result of these actions, the physical infrastructure system evolves. Hesse & Benz (1990: 60) argue in similar terms, referring to the four levels as *Grundregeln* (ground rules), *Institutionen* (institutions), *Leistungserbringung* (actions/performance) and *Politikergebnisse und Problemlösung* (policy results and problem solving). This four-level approach can also be applied to formulate hypotheses on other Western countries.

For instance, let us consider two ECIS tables which show levels of congestion and expenditure in a wide selection of European countries:



Table 8.10: 1993 infrastructure expenditure, standardised definitions (including maintenance) in 1994 prices.

Country	Constitutional family	Total per head	Roads per head	Rail per head	Total %GNP	Roads %GNP	Rail %GNP
<i>Austria</i>	Germanic	221 (5)	96 (11)	107 (2)	1.10(8/11)	0.48 (14)	0.53 (2)
<i>Switzerland</i>	Germanic	478 (1)	302 (1)	166 (1)	1.55 (1)	0.98 (4)	0.54 (1)
<i>Germany</i>	Germanic	252 (3)	167 (3)	54 (7)	1.37 (4)	0.91 (6)	0.29 (8)
<i>Netherlands</i>	Low Countries	151 (11)	88 (13)	37 (8)	0.85 (14)	0.50 (13)	0.21 (11-2)
<i>Great Britain</i>	Anglo-Saxon	139 (13)	94 (12)	30 (10)	0.97 (13)	0.66 (10)	0.21 (11-2)
<i>Ireland</i>	Anglo-Saxon	131 (14)	110 (8)	1.11 (7)	1.11 (7)	0.94 (5)	0.04 (15)
<i>Belgium</i>	Romanic	205 (6)	99 (10)	64 (6)	1.10 (8/11)	0.53 (12)	0.34 (5/6)
<i>France</i>	Romanic	233 (4)	147 (4)	68 (5)	1.22 (6)	0.78 (8)	0.36 (4)
<i>Italy</i>	Romanic	157 (10)	112 (7)	34 (9)	1.06 (12)	0.76 (9)	0.23 (10)
<i>Portugal</i>	Romanic	99 (15)	70 (15)	22 (13/14)	1.50 (2)	1.06 (1)	0.33 (7)
<i>Spain</i>	Romanic	144 (12)	102 (9)	25 (12)	1.42 (3)	1.00 (3)	0.24 (9)
<i>Denmark</i>	Scandinavian	178 (8)	83 (14)	76 (4)	0.79 (15)	0.37 (15)	0.34 (5/6)
<i>Finland</i>	Scandinavian	173 (9)	132 (5)	22 (13/14)	1.10(8/11)	0.84 (7)	0.14 (13-4)
<i>Sweden</i>	Scandinavian	204 (7)	117 (6)	81 (3)	1.10(8/11)	0.63 (11)	0.44 (3)

Sources: Hofstede 1997, Zweigert & Kötz 1994, ECIS 1996.

Table 8.11: Percentage of congested road connections per country<sup>80 81</sup>

Country	Constitutional family	0 hours	1 hour	2 hours	3 hours	>4 hours	Score
Austria	Germanic	95.5	0.0	0.0	3.0	1.5	LOW
Switzerland	Germanic	93.6	0.0	0.0	0.0	6.4	MID
Germany	Germanic	92.1	0.6	0.8	1.2	5.3	MID
Netherlands	Low Countries	85.2	3.8	2.8	3.1	5.2	HIGH
Great Britain	Anglo-Saxon	75.9	3.7	6.5	2.8	11.1	HIGH
Ireland	Anglo-Saxon	86.2	3.5	0.0	3.5	6.9	HIGH
Belgium	Romanic	94.1	2.3	0.9	0.9	1.8	LOW
France	Romanic	95.5	0.0	0.5	0.5	3.6	LOW
Italy	Romanic	90.6	0.0	0.8	2.4	6.3	MID
Portugal	Romanic	94.9	0.0	0.0	0.0	5.1	MID
Spain	Romanic	81.1	0.9	1.8	0.9	15.3	HIGH
Denmark	Scandinavian	100.0	0.0	0.0	0.0	0.0	LOW
Finland	Hybrid	100.0	0.0	0.0	0.0	0.0	LOW
Sweden	Scandinavian	100.0	0.0	0.0	0.0	0.0	LOW

Source: Hofstede 1997, Zweigert & Kötz 1994, ECIS 1996.

With the aid of country scores at the top and bottom levels of the four level approach, it is possible to formulate predictions on the second and third levels. In some cases a connection appears to be discernible; in others there is no connection at all. France, Belgium and Italy belong to the Romanic family and their infrastructural scores are often closely clustered. According to Tables 7.1 and 7.3, the French government invests in 'quantity building' and construction is fast. This was explained earlier by a low *DEM* score and medium-high scores for *FED*, *INT* and *COR*. But do these characteristics apply likewise to institutions in Belgium and Italy? And why do the Spanish and Portuguese scores diverge so widely? Could the institutional structures differ despite constitutional similarities or can their performance be better explained by non-institutional factors?

For instance, we do not know how Belgium scores on the 30 counts but various writers report strong similarities between the institutional structures of Belgium and France; only Belgium has less procedural arrangements (*NEI* 1991, 1994, Duenk 1991, De Coninck 1993, Kolpron 1994, *KUB & TNO-INRO* 1997). Empirical findings show that both roads and railways are constructed quickly (4 years), that regional distribution is vitally important ('waffle iron politics'), that a project can be implemented on the basis of political consensus alone and that lesser importance is

attached to supporting studies and legal conditions. Politicians, advisors and social partners communicate through informal channels, ensuring that decision-making is totally unstructured and enquiry procedures are kept to a minimum.<sup>82</sup> Large-scale construction programmes are in progress and infrastructural networks are being extended but they do not always meet the requirements. Consider the following quotations:

Large-scale infrastructural projects are realized through *ad hoc* government consultation, bureaucratic appraisal processes and political decision-making. Private citizens are scarcely, if ever, involved (Kolpron 1994: 16).

The power and decision-making structures are 'shadowy' to say the least. In some cases power is concentrated in the hands of only a few people. Or, to quote one discussion partner, 'In Belgium knowing the right people is often more important than knowing the right authorities'. Although decentralisation of part of the financial resources has helped speed up the implementation of plans (in the past, investment in Wallonia was automatically compensated by equal levels of investment in Flanders and vice-versa), it can significantly slow down cross-regional planning (*cf.* TGV, the extension of Zaventem etc.). The physical planning of the Antwerp-Gent-Brussels region with its highly fragmented distribution of housing, offices, industrial sites, infrastructure, amenities and suchlike is a typical product of the prevailing political procedure. However, these structures are not wholly without advantage: Belgium offers many opportunities for doing business via the back door; which is a clear plus point in the light of the inflexible regulations which frequently exist elsewhere. This greater autonomy is reflected in the policy plans for the regions, which single-mindedly pursue their own course of development and give only marginal consideration to cross-regional opportunities and threats (NEI, 1991: 10).

In 1981, when Jos Chabert (CVP), Minister for Public Works, asked a group of esteemed experts to draw up a priority list of large road networks waiting to be built, they came up with 413 projects which were not exactly 'small-scale'. The Cointe Tunnel was not included in the study. Professors Blauwens, Vertonghe, de Donnea and Glesjer argued in favour of using Cost-Benefit Analyses in such cases. But, when the Council of Ministers gave the tunnel the go-ahead in 1984, there was no mention of a CBA. This historic event took place on 6 December 1984, the feast of Saint Nicolas (De Coninck 1993: 21).<sup>83</sup>

There are some other institutional characteristics which Belgium does *not* share with France, such as the *contrats de plan* (plan contracts) between governmental bodies, or variations upon the quasi-private *Sociétés d'Economie Mixte* (Mixed Economy Companies). Italy and Spain, where strong informal channels of communication also exist between prominent officials, have their *contratti di programma* and *contratos-programa*, as do a number of private licenced companies which lay motorways and then charge a toll. But, just as in France,

Critics of private participation stress that a great majority of the loans contracted by the private operators (except for airport companies) are backed by State guarantees, ending up as public debt in case of default (ECIS 1996: 152).

This leads us to suspect that membership of a constitutional 'family' might significantly raise the probability of institutional similarities.

The infrastructural scores of the Netherlands and the United Kingdom are often close to one another, even though the Netherlands is more committed to collective personal transport. These are not so far removed from the scores of Denmark, which is less burdened by congestion but, Danish railways do however account for a larger share. This is even more applicable to Sweden, which is approaching the Germanic scores. The practice in all Scandinavian countries is described as 'consensus-oriented'. Socio-economic analyses of cost and benefits are employed - which include the regional distribution - and people seem able to steer clear of private funding. Since 1988, efforts have been underway in Sweden to reform the decision-making structures in such a way that their *ad hoc* character is as far as possible replaced by meticulous national appraisal and reflection upon the effects of networks. In Denmark the influence of the cost-benefit analysis is far less than in Sweden and the formation of informal consensus still has the upper hand. Local government in Scandinavia has far greater control over centrally allocated investment monies than their Dutch and British counterparts (ECIS 1996). We have no data on institutions in Scandinavia, but we could venture a hypothesis that they score medium on *FED* and high on *DEM*. Sweden and Denmark could well score above average on *INT* and *COR*. At all events, research in this area would certainly be fascinating and give us food for thought for the situation in the Netherlands.<sup>84</sup> They may not belong to the same family, but they still have relatively striking similarities.

## 9. An exercise in institutional transplantation

*Two alternative institutional design scenarios are put forward for improvement of the Dutch institutional structure. A practical exercise in institutional transplanted is worked out to strengthen procedural rationality in the practice of prioritisation of transport infrastructure projects in the Netherlands. Requirement 1 leads us to suggest that only some countries are interesting as innovative institutional systems. Requirement 2 thins out this list by dropping a few countries which for legal and cultural reason are not wise or convenient as donor systems for the Netherlands. For the two remaining promising institutional structures, suggestions for institutional transplantations are made. These scenarios are named the Rhineland scenario and the Bay Area scenario.*

Since chapters 6 and 7 we know which countries are procedurally rational and since chapter 8 to what families of nations they belong. Now, it is time to play the game of institutional design and apply the transplantation method to the Netherlands. Considering the fact that we departed from the tension between planners and pushers in the Netherlands, it is obvious to propose transplants for the Dutch system.

### 9.1 Transplanting institutional characteristics to the Netherlands

The *institutional* system of the Netherlands is roughly halfway between that of Germany (11 points of similarity) and the United Kingdom (11 points of similarity), and is closest to Northrhine Westphalia (12 points of similarity). This hybridity is further reflected in the ground rules. Though the constitutional legal framework in the Netherlands is strongly influenced by France and Germany, the culture is more reminiscent of the pragmatic approach typical of the Anglo-Saxon countries and Scandinavia.<sup>85</sup>

In the Netherlands there is, on the one hand, a strong tendency to address problem solving by building solid structures for integrated decision-making; on the other hand, flexibility and pragmatism weigh more heavily in the balance when concrete decisions actually need to be made. Although, theoretically, people want everything to play a role, experience has proven this impossible time and again: integrated appraisal needs an elaborate system and a set of rules, but systematic working methods create a rigidity which the players do not want. Viewed from this perspective, it needs no stretch of the imagination to comprehend that sound policy research, strongly underpinned objectives and reliable financial forecasts do not come into their own during appraisal and selection. Approval is given and budgets are allocated before prioritisation can come into effect: - exactly the problem that was identified in Chapter 1. Salet comments as follows on the relationship between the administrative structure and culture in the Netherlands:

To stimulate thought I wish to put forward the hypothesis that the processes of public administration and policy in the Netherlands tend towards British pragmatism, whereas the structural patterns have more in common Germany. However, while in Germany the structure manifests itself almost by force, the Netherlands appears to allow unobstructed access to conjunctural pressures (1994: 10).

Administrative processes in the Netherlands are hybrid. This makes the transplantation of institutional characteristics an ambiguous, but exciting process. Hybrid systems evolve through mixing, but the way in which this mixing comes about is crucial for the system functionality and productivity. Added value can be derived from entwinement and complementarity of characteristics. For instance, when flexible Anglo-Saxon institutions prevail in consensus-based decision-making phases, and German institutions prevail in logically arranged implementation phases, added value can be generated by the mix of broad orientation and exact implementation. It is at this point that procedural rationality comes into effect and the best of both worlds is combined. The opposite order, loyal brain storming and disloyal implementation, on the other hand, creates an unimaginative fuss. When mixing is unstructured, there is a greater risk that characteristics stemming from different sources will become diametrically opposed and create uncertainty or ambiguity in the application, sequence and order of precedence of the rules. Unfortunately, the mixité is not very structured for physical and infrastructure planning in the Netherlands, as the following box indicates:

The official framework for the appraisal and planning of transport infrastructure in the Netherlands is enshrined in the *Wet op de Ruimtelijke Ordening* (*WRO*, Physical Planning Act). The government develops national plans, *Planologische Kembeslissingen* (*PKBs*, National Physical Development Plans), for spatially relevant policy. These are taken into account by the local authorities when they draw up their own physical plans. Although the *PKB* provides the provinces and municipalities with a national framework, the local authorities still bear sole responsibility for the regional planning and the municipal zoning plans. The basic structure seems fairly federalist but it has recently been extended with a number of additions. Not only general spatial developments and general transport plans are *PKBs*, but infrastructural projects of national importance, such as the Betuwe line and High Speed Rail, can now also become *PKB's* of a special type, *structuurschema's*, (Structure Schemes); no clear relationship has been introduced between them. The *Tracéwet* (Route Act), a specific act to streamline procedures for infrastructure planning, is linked to the *WRO*, dictates that infrastructural connections which are not given *PKB* status require a *Trajectnota* (Trajectory Note) in the appraisal phase. In the implementation phase central government looks for the exact route for joining up a connection and, after investigation and consultation, establishes a *Tracébesluit* (Route Decision), for which lower governments can make their wishes known. The Ministers of *V&W* (Transport, Public Works and Water Management) and *VROM* (Housing, Physical Planning and the Environment) can use this

decision to compel recalcitrant municipalities to modify their regional and zoning plans by issuing them compulsory instructions or, in the worst case, by having the plans drawn up by another player. However, according to the basic legal structure, the municipal zoning plans (*bestemmingsplannen*) should definitely not be lower in the hierarchy than the national *Tracébesluit*.

The recent *Plannet* ('Planning Act') is not on planning in general, but only on transport planning. It states that not only central government can and should draw up traffic and transport plans (*Verkeer- en Vervoersplannen*) but the local authorities as well. The National Transport and Traffic Plan (*NVVP, nationale verkeer- en vervoersplan*) is a *PKB* and a structural scheme at one and the same time. The Provincial Transport and Traffic Plan (*PVVP, Verkeer- en Vervoersplan*) and the Municipal Transport and Traffic Plan (*GVVP, Gemeentelijke Verkeer- en Vervoersplan*) end up next to the local physical plans. There is unlimited discretion to fit one into the other. This series of plans may interfere with the already existing series of general physical plans and environmental plans. Specific links are not made, only 'coordination' of some sort is necessary.

The Ministry of Transport expresses its infrastructural intentions in financial as well as spatial and judicial terms. Besides the annual budget it maintains the Fouryearly *Meerjarenprogramma voor Infrastructuur en Transport (MIT)* which contains projects currently being researched and executed. There are various appraisal methodologies which can be used for selection here, but as none of them is universally applicable, they are applied on some occasions and neglected on others. It all depends on the circumstances and the will of the decision makers whether the methodologies are used or whether a project eventually finds its way into the *MIT* via informal lobbies between transport companies, the bigger cities and The Hague. Equally obscure is any link between the financial and the spatial aspects of infrastructure planning. They are totally separated.

Last but not least, where does the *open planproces* ('open planning process', a wide acclaimed preliminary phase to investigate broader societal wishes by inviting many pressure groups for discussion and brain storm) fit into all of this? It can increase the variation of ideas in the initial phase of the appraisal, but if it continues to be unconnected to the broader context and the selection environment as it is now, it might trigger frustration among the contributors and cause duplication of the appraisal processes.

The moral of this tale is not that one or more of these institutions are 'good' or 'bad'. The plain truth is that the institutional system in the Netherlands has a 'German' foundation with upon which unstructured 'English' *ad hoc* adjustments are pushed through. This combination leads to omissions, obscurity, contradictions and deadlock (De Jong 1999a). The institutional system in the Netherlands is increasingly becoming an unstructured mixité - and that implies risks for the future. It seems to me that, when institutional characteristics are being transplanted, the institutional designer should take account of the basic structure and any superimposed adjustments. If he wants to retain the federal idea behind spatial decision-making, then he cannot introduce new transplants unless they can be fitted into the greater whole. Alternatively, if he wants to make the decision-making more flexible he must change the basic structure.

## 9.2 Two attractive donor systems for the Netherlands

If we return for a moment to the country scores on procedural rationality, we find only Northrhine Westphalia, the Bay Area and Switzerland as serious candidates to adopt transplants from. The suitability criterion excludes Swiss solutions because of its rather different structure and culture

Table 9.1 sums up the scores of the two remaining donor systems and those of the Netherlands:

Table 9.1 Northrhine Westphalia, Netherlands, Bay Area and four institutional dimensions

Country/Dimension	<i>federalism</i>	<i>democracy</i>	<i>integralism</i>	<i>corporatism</i>
<i>Northrhine Westphalia</i>	HIGH	MID	HIGH	HIGH
<i>Netherlands</i>	LOW	MID	MID	MID
<i>Bay Area</i>	HIGH	HIGH	MID	MID

The following differences are evident:

- 1 In Northrhine Westphalia and the San Francisco Bay Area there is more power distribution over governmental levels (*FED*). Power distributions could be remoulded in the Netherlands to make the institutional structure more innovative. Failure to push through reforms in this direction will probably overshadow progress in every other area.
- 2 The Northrhine Westphalia model also calls for greater attention to a coherent well-considered decision-making structure (*INT*) and loyalty on the part of the players (*COR*). Existing legislation is full of 'loose ends' and must therefore be systematically compressed to allow the existing mixité of components to fit them coherently into the basic logical framework.
- 3 The Bay Area model uses less rigid legal frameworks to enable autonomous agencies, pressure groups and citizens enter the decision-making arena at any time they want. Referenda are also regularly organised (*DEM*). This democratisation increases the likelihood of creative contributions on their part. The current regulations are no longer adequate and are replaced by a general approach which does not tightly structure the players' behaviour but allows them to find relationship patterns for themselves.

## 9.3 Two donor systems' general principles

### *The Rhineland scenario: structuring and containment*

The first policy scenario presents a situation in which assessment processes for transport infrastructure are structured in a transparent manner. Systematic approach and actor-containment will have to be improved. Fragmentation and the ad hoc nature of current practices should be eliminated since the loose and fragmented parts



(assessment methods, participation procedures, open planning processes, compensation of subnational governments) ought to be connected now. The likelihood that the 'right choice' is overlooked will then be minimised. The coherent structure promotes the retention of created variation of ideas and its arrival at the selection environment.

There is a risk that actors will continue to proceed in a pragmatic manner despite well-thought out procedures. In this case, a responsible system exists which requires substantial time and money, but is not effective; in fact, it can result in even more delay since formal regulation could stifle informal consensus. The current problems with respect to speed will then be increased. This scenario is only useful when there is discontent with the existing situation and a strong commitment to a new direction. It would appeal strongly to the *Gründlichkeit* (thoroughness) of the Dutch. It should no longer be 'cool' to always deal with matters informally and avoid official channels or to think policy studies are 'too detailed and too scientific' while using their numbers and statistics as useful political weaponry.

Subnational governments will receive their own funds and their own infrastructure networks. These subnational governments are either the current provinces or newly formed states. They receive money from the infrastructure fund (see chapters 1 and 5) according to a particular distribution key that proportionally distributes the money over these governments. For this, an integral 20-year plan is made from which strict 5-year budget agreements are derived that cannot be changed by parliament. National infrastructure will remain a separate part of the budget. All funding authorities (national and regional) will have an integral and intermodal look of their own networks (focus on transfer points) and will pay attention to the interconnection with other networks in consultation with other funders. Transport companies will have to have a place in the consultation so that they can relate infrastructure to exploitation.

Actors are made more loyal through a process of containment. Each policy interest will have an actor legitimately participating in the prioritisation and programming process. Subnational governments and legitimate interest groups will have a clear place in consultation rounds. Individual citizens will only be allowed to participate in cases of expropriation.

Loyalty develops when people start to work with the same basic data and standards from which a standardised assessment methods follows. Spatial and ecological arguments and criteria will have their place. Environmental groups will have to have the power to say no when EIRs are not good in their view. If necessary, the infrastructure is taken out of the sphere of physical planning (*WRO*) and transport planners develop their own transport infrastructure legal planning framework, where spatial and environmental aspects are 'taken into consideration'.

*The San Francisco scenario: autonomy and improvisation*

The second scenario, on the other hand, reflects the growing influence of Anglo-Saxon behavioural patterns in the Netherlands. A considerable part of actual regulation concerning physical and transport planning is eliminated and replaced by a stronger emphasis on actors' autonomy and independence. The decision making process is no longer sustained by well thought-through and logical-systematical structures, but arises from improvisation and self-organisation. Players ideally draw the conclusion that they need each other for the realisation of their own ambition. For business to thrive, it is unnecessary that informal agreement is reconfirmed in official channels. In this manner, the variation of generated ideas becomes endless and even when not everything is remembered, the riches are great enough.

A development in this direction also has its dangers. If deregulation is not combined with a dispersion of instruments of power with various independent actors, a tendency to English centralism may occur. Lower government may then have many desires, but they have no contribution to make and become passive. Central government could in theory do a lot, but is not stimulated to deal innovatively with financial means. The pruning of the regulation will invite him to judge others' proposals only according to national standards, as a result of which variation is decreased. The actual lack of innovative power only worsens.

This scenario is only promising if trimmed legal frameworks and trimmed down procedures are filled up with creative deliberation practices. Players may step by step develop common approaches, criteria and some form of mutual involvement. But if actors only serve their 'self-interests', all agreements and compromises remain 'negotiable and temporary' and the 'integrated traffic system' is deemed to be a fiction, relations between potential partners will toughen and turn sour.

The Ministry of Transport is split into a core department and various autonomous agencies with separate functional tasks. These receive separate budgets. In addition, funds are decentralised to provinces and municipalities (or they levy these themselves). Autonomous actors own the money but place it in a 'kitty' directed by the Ministry of Transport. Since nothing will be achieved without the consent of all actors, a mutual assessment framework is developed between all parties. Each will receive back at least 80% of its initial input; the rest is distributed on the basis of urgency and well-grounded projects. This will often be in the form of intermodal package deals.

There will be no clear procedures; a natural attitude exists that all relevant players are partners in negotiation. Contacts occur on the basis of expediency. Also, at a concrete level many ad hoc hearings and referenda take place to gauge public opinion. Individual citizens are welcome. The *WRO* is abolished and the whole planning process restricted. Entrepreneurialship and creative financing (private financing included) are rewarded, which might harm the weaker modes. Reorganisation of

agencies, governments and cooperative ventures is no longer a taboo when particular tasks have become obsolete. Networks are fragmented among autonomous managers or transporters.

#### 9.4 Possible institutional grafts

Underneath all 30 institutional characteristics are listed up while they are scanned for differences between the Dutch scores and those of Northrhine Westphalia and the Bay Area. It will be checked what transplantation in the Netherlands might lead to.

##### 1. *The number of financing actors*

Current score: LOW.

NRW scenario: MID. The Ministry of Transport will have to give substantial funds to subnational governments so that they too can make a constructive contribution and bring an end to their passiveness. They can also develop responsibility for expenditure. Thus a serious negotiation relation is created between them and The Hague.

SFBA scenario: HIGH. The Ministry of Transport will largely fragment itself in various individual agencies with varying tasks and functions. All other aspects of the tasks will go to subnational governments. After that, their interdependence will become clear and they will work at co-production and a mutual assessment framework.

##### 2. *Importance of territorial distribution*

Current score: LOW.

NRW scenario: HIGH. Through a distribution scale subnational governments will receive a proportional share of the money. The focus on the Randstad as the economic heart will lessen.

SFBA scenario: MID. Provinces will receive money within a guaranteed minimum and maximum range. The range is used to reward better proposals or greater urgency.

##### 3. *The importance of consultation rounds*

Current score: LOW.

NRW scenario: HIGH. Subnational governments will have to be heard prior to *structuurschema's* and *trajectnota's*, and maybe even have an official voice (see the proposals by WRR 1994a).

SFBA scenario: HIGH. There should be a natural attitude where all relevant actors are logical discussion partners from beginning to end. This does not always require a strict procedure, but requires more the understanding that it is in everyone's interest.

##### 4. *Judicial role of subnational governments*

Current score: MID.

NRW scenario: MID. The important role that subnational governments play in the field of spatial incorporation of infrastructure can be maintained.

SFBA scenario: HIGH. Further horizontalisation of relations is necessary via frequent hearings for all governments. Subnational governments can no longer be forced by higher government levels to appropriate citizen property, but they must want such themselves.

#### *5. The role of regional government*

Current score: LOW

NRW and SFBA scenario: HIGH. Regional transport authorities will have their own authority and budgets; these bodies are legally acknowledged and have a place of their own. MID means that regional governments only act as help structures among the public bodies and their legitimacy is still derived from them.

#### *6. The role of referenda*

Current score: MID.

NRW scenario: No change necessary.

SFBA scenario: HIGH. Referenda and hearings with active citizens are the rule rather than the exception. These hearings should not be approached defensively, but as a chance to score politically or to gauge the citizen's ideas.

#### *7. Room for participation procedures*

Current score: MID.

NRW and SFBA scenario: HIGH. Participation is not a matter of form only. A deviating opinion of citizens and pressure groups can mean a definite 'no' to political proposals. In other cases it can lead to change in these proposals.

#### *8. Openness of the societal discussion*

Current score: HIGH.

NRW scenario: MID. The societal discussion should be more channeled via acknowledged interest groups, so that not every 'unguided missile' has a voice.

SFBA scenario: No change necessary.

#### *9. The role of societal groups on the assessment criteria*

Current score: LOW.

NRW scenario: MID. Lobbying for interests is regulated in such a manner that proposals, studies and reports meet the minimum conditions set by all those involved. A multitude of criteria and items of attention will be examined.

SFBA scenario: HIGH. Lobbying for interests is regulated in such a manner that proposals, studies and reports meet the minimum conditions set by all those involved. A multitude of criteria and items of attention will be examined.

*10. Representative role of public authorities*

Current score: MID.

NRW scenario: No changes necessary. Northrhine Westphalia will, however, soon have elected mayors. The Netherlands has not yet modernised its system.

SFBA scenario: HIGH. The individual will have to be more assertive and competent toward public institutions. It is a critical tax payer who holds elected representatives accountable.

*11. Interdepartmental nature of plans*

Current score: HIGH

NRW and SFBA scenario: No change necessary.

*12. Formal importance of environmental impact reports*

Current score: MID.

NRW scenario: No change necessary.

SFBA scenario: LOW. Environmental effect reports will remain necessary for projects with serious consequences for the environment, but they are handled less strictly with respect to the question of where and when they will have to be executed. They will be executed if political and societal forces so demand. This adaptation will not necessarily lead to more procedural rationality.

*13. Informal importance of environmental impact reports*

Current score: MID.

NRW and SFBA scenario: HIGH. Environmental impact reports will finally be a real hindrance to the realisation of infrastructural projects. Objections of the EIR committees will have to be met, otherwise major conflict would emerge between the Ministry of Transport and the Ministry of the Environment.

*14. Broadness of the assessment framework*

Current score: MID.

NRW scenario: HIGH. Business economic criteria to assess the quality of traffic and transport are hardly or never used since they are too limited. The citizen's voice, not the purchase power of customers, prevails.

No change necessary. Since allocation is currently processed via the budget mechanism and sometimes supplemented with the profit principle, not much needs to change. The profit principle could come a little more to the forefront.

*15. Importance of spatial translation*

Current score: HIGH.

NRW scenario: MID. Projects from the sector are still spatially translated by subnational governments, but this no longer happens via the physical planning, track but via transport infrastructure planning. The Physical Planning Act (*WRO*) will remain relevant, but this no longer includes infrastructure projects. *Structuurschema's* en *trajectnota's* will disappear and become clear transport plans and programmes with listings, definitions and sketches of projects.

SFBA scenario: LOW. The *WRO* is abolished and not replaced by transport planning legislation. Project initiators will contact landowners such as municipalities and private persons as soon as is necessary. At that time they will conclude a business agreement.

#### *16. Belief in supply approach*

Current score: MID.

NRW scenario: HIGH. Courageously, infrastructure is constructed without having to deal with questions of short-term rate of return. When one invests in quality, the passenger or user will eventually come by himself.

SFBA scenario: No change necessary.

#### *17. Public nature of reports*

Current score: LOW.

NRW scenario: HIGH. Players involved will no longer execute their own studies on the basis of their own premises, but together they will assign the execution of research; these research assignments are public by nature. After negotiation, all actors involved agree that a certain set of basic data and standards will be used. Policy analysis is sometimes conducted in a participatory manner, which means that the research is executed together in order to develop a common frame of reference.

#### *18. Nature of public-economic prioritisation*

Current score: HIGH.

NRW scenario: No changes necessary.

SFBA scenario: LOW. Creative financing, private participation, entrepreneurship and cost-savings are promoted via selective rewards. A businesslike approach and independence will be more central to many transport enterprises. Governments, however, give financial support. This is not an adaptation leading to higher procedural rationality.

#### *19. Importance of assessment in territorial context*

Current score: MID.

NRW scenario: No changes necessary.

SFBA scenario: LOW. Reorganisations of administrative bodies happen more easily. When organisations no longer fulfill a clear goal, they can be abolished. This might

mean that municipalities and provinces will lose authority to functional bodies if this is necessary. This is not an adaptation leading to higher procedural rationality.

*20. Extensive formulation of assessment criteria*

Current score: MID.

NRW and SFBA scenario: HIGH. In cooperation between the various relevant actors, a standardised assessment method is developed to be the basis of assessment for all future projects. Projects can no longer be approved outside this evaluation.

*21. Intermodal nature of plans*

Current score: MID.

NRW and SFBA scenario: HIGH. In the transport plans of various governments, the various transport modes are explicitly linked and the focus is on the development of transfer points that clearly link the different types of transport. Complementarity of roads, various types of public transport, inland waterways, sea traffic and air transport has then become a fact.

*22. Intermodal nature of legislation*

Current score: HIGH.

NRW scenario: No change necessary, although the barriers between the modes in the infrastructure fund are still a problem.

SFBA scenario: MID. Funds are a little more tied to different modes, but since intermodal plans are worked out jointly, the money flows together in the execution of package deals.

*23. Importance of actor commitment*

Current score: LOW

NRW and SFBA scenario: MID. The actors participating in a prioritisation and programming process will have a set role in that process, but the price for that is loyalty and solidarity. Opportunistic behaviour becomes costly.

*24. Formal role of assessment procedures*

Current score: HIGH.

NRW scenario: No change necessary.

SFBA scenario: LOW. The restricting role of plans and permits will be limited; cooperation is negotiation and negotiation is conducted outside the restrictive frame of strict procedures. This is not an adaptation leading to higher procedural rationality.

*25. Importance of prior standardisation*

Current score: MID.

NRW scenario: No change necessary.

SFBA scenario: LOW. Projects are realised separately but in mutual understanding between independent actors. Where the interlocking of lines is necessary, decisions may follow later. The belief that large-scale and integral planning serves the general interest is obsolete. This is not an adaptation leading to higher procedural rationality.

### *26. Promoting network effects*

Current score: MID.

NRW scenario: HIGH. National, provincial and local infrastructure networks are closely related to their respective levels. These governmental levels are responsible for the connections within their own network and with other networks. Noticed infrastructure gaps on maps of the existing network and in statistics about the use of various connections and about congestion, will lead to initiation of new projects.

SFBA scenario: LOW. Lines and connections are split in such a manner between several transport enterprises and managing bodies that realising an integrated network is not a real option. Innovative entrepreneurialship and mutual cooperation will decrease the lack of correspondence. This is not an adaptation leading to higher procedural rationality.

### *27. Equal distribution over modes*

Current score: HIGH.

NRW scenario: No changes necessary.

SFBA scenario: MID. Strategically important rail and bus connections will continue to receive attention and innovate themselves, but it is likely that public transport will attract fewer investments if it has problems maintaining itself in terms of results and number of passengers.

### *28. Reliability of financial promises*

Current score: LOW.

NRW scenario: MID. Budget agreements are made every five years between financing and receiving governments; these are approved by parliament and enacted. Annual revision, as happens now, is no longer possible.

SFBA scenario: No changes necessary.

### *29. Avoidance of privatisation tendencies*

Current score: MID.

NRW and SFBA scenario: No changes necessary.

### *30. Strength of the relationship between infrastructure and exploitation*

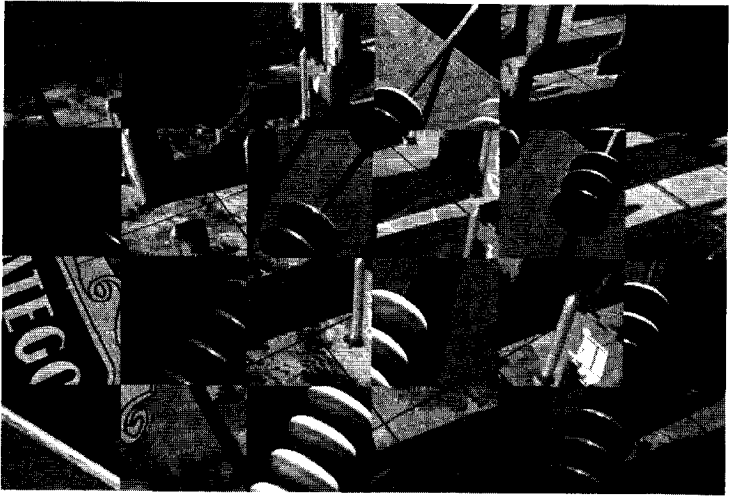
Current score: LOW.

NRW scenario: HIGH. Since the infrastructure fund strongly emphasises the infrastructure itself and avoids questions about exploitation, it is abolished in its



present form. Allocated budgets contain the integral package of infrastructure and service delivery. Decentralisation of funds makes this possible. Transport enterprises will also have a seat in the consulting bodies on investments in infrastructure.

SFBA scenario: MID. The infrastructure fund will continue to exist as an institution, but authority over it will be placed in the hands of a large group of actors, including governments, functional organisations and transport enterprises. The Ministry of Transport only directs the process. Involvement of transport enterprises will recover the link between infrastructure and exploitation without the necessity of lumping the financial means together.



## 10. Planners and pushers in 1998

*A synthetic answer to the research question is formulated, based on all theoretical and empirical study in the preceding chapters.* It appears that in 1998 the same tower of Babel between planners and pushers persists. In the course of five years, many policy reports have made recommendations for the modernisation of the prioritisation process, and yet none has been successfully implemented. This book claims that for this to be realised institutional change is required. Procedural rationality and suitability of institutional transplantation are the basic factors for this change for the better. But this transplanting is no sine cure. Like organ transplants, borrowed institutional features from one country must become integrated with the system into which they are introduced. Introducing new institutions in such a way that they intertwine with the existing complex of institutions and steer them in the right direction seems to me the ideal synthesis of design and evolution.

**Mrs Verbugt (VVD):** I always hear Mr. Reitsma urging that more money should be made available for the infrastructure, more bottlenecks should be tackled and these bottlenecks should be tackled faster. Now he is saying that all the work should be done to higher standards. But that will cost more, and so it will not be possible to tackle so many bottlenecks. He states as much in his motion. Can he explain this U-turn on the part of the CDA?

**Reitsma (CDA):** The position is fairly simple. If the new A50 motorway is to be built, the parliamentary CDA fraction considers that it should at least be built well. That is a political choice you can make - and we have made it. If the funds available for the work are limited, priorities have to be set. We have done that.

**Mrs Verbugt (VVD):** The road must meet environmental and noise standards, says Mr Reitsma. We have already agreed on criteria to make this possible. I do not remember the parliamentary CDA fraction arguing at the time that the criteria were too low.

**Reitsma (CDA):** With all due respect, I cannot follow your question. I say this in all honesty. I don't know what criteria you are talking about.

**Mrs Verbugt (VVD):** I am talking about the criteria for environment-friendly implementation. We have discussed these repeatedly during the past few weeks. These criteria are laid down in the policy note. If an amendment is proposed concerning these standards, it cannot come out of thin air. It must meet criteria. Decent implementation will cost money. I have never heard the CDA claim in the past that these criteria were formulated too weakly. On the contrary.

**Reitsma (CDA):** The CDA, and other parliamentary fractions, have been fairly consistent in their views. May I remind you of the recent *MIT* debate? At that time, the CDA fraction actually

proposed an amendment specifically about the tunnel near Kampen. I may also remind you about other projects such as the widening of the track near Abcoude, and more recently the A4 motorway. The CDA fraction said in these connections that if infrastructure, i.e. a highway or a railway, is needed it must be demonstrated that there is sufficient support among the populace for the construction of this infrastructure. This seems to us to be a perfectly clear, realistic criterion (TK 5 June 1997).

## 10.1 Integral appraisal of transport infrastructure

### *Politicians on the integrated appraisal of transport infrastructure*

Five years or so after the debate concerning the 'integral prioritisation' and the infrastructure fund (see Chapter 1), the Dutch parliamentarian Van Heemst (PvdA) proposed an amendment concerning the construction of A4 motorway through that region of Holland known as '*Midden-Delfland*' (between Delft and Schiedam). What were the facts of the matter?

In the weeks preceding the proposal of this amendment, the Second Chamber had (after complicated negotiations) passed a resolution concerning the construction of the Dutch part of the High Speed Line between Amsterdam and Paris through the 'Green Heart' of Holland. Since it was almost a political dogma that this area, called 'the lungs of the *Randstad*', must be preserved at all costs, it was clear that this decision was going to have very expensive consequences. The High Speed Line would be allowed to pass through this highly sensitive area - but it would have to go through a combination of tunnels and cuttings which would cost 900 million guilders to construct. Shortly after this decision, the Second Chamber had to debate the above-mentioned A4 motorway, which had already been on the decision-making agenda for no less than 32 years. Even though lower levels of government and environmental pressure groups had been steadfastly against this 7 kilometres of asphalt, some of its opponents had come to the conclusion by 1997 that its construction was inevitable. A few years before, *Rijkswaterstaat*, the subdepartment of Public Works, had already dumped sand along parts of the route in expectation of their ultimate victory. Despite this rather unfriendly gesture, the municipalities of Delft, Schipluiden, Vlaardingen and Schiedam were already prepared to accept the passage of the motorway through their territory, as long as it was *satisfactorily fitted in*. This implied a choice between a cutting or a tunnel to protect people living near the proposed route from excessive noise levels, and to limit damage to the ecology of the area. None of the parties involved accepted simply building the motorway at normal ground level. It looked as if the national and local governments were within sight of agreement. The Environmental Impact Report had also proposed environment friendly options supported by most players. Then Mrs Jorritsma-Lebbink, the VVD Minister of Transport, Public Works and Water Management at the time, surprised friend and foe alike by adopting a radically different viewpoint:

each guilder can only be spent once, she said, and she felt unable to approve the allotment of several hundred million guilders extra for a few kilometres of motorway. Besides, construction of the road at ground level would in her opinion meet all legal requirements. The disappointed municipalities had good friends elsewhere in The Hague, and they whispered the right question in the ears of the parliamentarians Van Heemst (PvdA) and Van 't Riet (D'66): where exactly is the appraisal framework which justifies the allotment of funds to some projects (the HSL) and denies it to others (the A4)? The passing of Van Heemst's motion meant that construction of the A4 had to be postponed once again, while an *afwegingskader* ('appraisal framework') was being formulated to support policy decisions in this field. The minister spoke out strongly against the motion, but was forced by lack of support to accept it and to order civil servants in her ministry to come up with the desired appraisal framework. No one knew exactly what it was supposed to look like, but it had to be produced quickly in order to ensure, in the words of Leers (CDA), that our splendid *polder model* did not degenerate into a '*kolder model*', (baloney model). Van den Berg (SGP) offered the proposed appraisal framework his qualified support:

Mr Speaker, I am sorry to say that my party cannot take part in the general discussion of the appraisal framework, because of a conflict of interests. I will not go into further detail at the moment, but will return to this issue later.

I would however like to stress that my party will continue to support attempts to give the House a better instrument for the appraisal of the various wishes expressed in connection with the realisation of infrastructural and similar projects, in particular in connection with planning functions which require *MIT* approval. I see Mr. Van Heemst's motion in this light. What are the consequences of extra construction costs? What are the results of choices made on this point? Considerations of this kind must be made much more transparent for the Chamber, and we also need means of judging just how integrated the appraisal really is. I support these attempts, and await the further course of the discussion with interest (*TK* 5 June 1997).

Verbugt (VVD) was not against the framework proposed in the motion in principle, but she did fear unnecessary delays in the execution of the government's road investment programme. Congestion on parts of the A4, predicted to rise to 20% in the future, was, she argued, an intolerable burden on the growth prospects of the Netherlands' main ports, and the treasury was empty:

Mr Speaker, the parliamentary fraction of the VVD supports the idea of a framework for integrating new projects into the overall infrastructure, but would like to warn against excessive expectations. What we expect from such a framework is that it should help to make the decision-making and appraisal processes more transparent. That is a clear gain. But even then, each guilder can only be spent once. Extra costs for the realisation of one part of the plan will mean that there is less money available for other parts of the infrastructure. Whatever framework we choose will not alter this fact. Our main starting point remains that

the minister should continue to execute all points in the infrastructure programme which have already been passed by this Chamber, and that the minister should use a framework to reduce traffic stagnation and improve accessibility (TK 5 June 1997).

Rosenmöller, leader of the *Groen Links* fraction in the Second Chamber, basically opposed building the proposed section of the A4 at all, and he made a strong plea for investment in public transport in *Midden-Delfland*. But now that his party is steering a more pragmatic course than it has in the past, and slowing down developments seemed the most they could hope for, he decided to support the motion. He just recapitulated the main lines of the appraisal process issue:

We are running from one problem to another between the Chamber, or part of the Chamber, and the minister. We have problems about roads, about tunnels, about railways, and so on. The only thing we don't seem to have discussed is problems about inland waterways - but this may be simply a reflection of the low priority we give to this part of the infrastructure. One of the problems associated with the shortage of finances arises from that fact that when it comes to the environment the policy of this House is based much too much, in the considered opinion of our fraction, on a wish to have our cake and eat it. As long as this kind of policy is maintained, we will continually be faced with the problem of where we are to find the money for infrastructure networks in line with sustainability standards (TK 5 June 1997).

#### *Policy analysts' on the integrated appraisal of transport infrastructure*

Civil servants at the Ministry of Transport, Public Works and Water Management had in fact come to much the same conclusions as Rosenmöller. They developed a programming framework for the incorporation of infrastructure projects in the *MIT*. To this end, the following three steps were defined through which each project had to pass (Min. Transport, 1998a):

1. *Verkenningfase* (Exploration Phase): A project is included in the 'exploration table' if the minister considers that a traffic and/or transport problem exists, or could arise, which demands examination. The direction in which a solution might be sought is not yet known, so no budgetary estimates can be made at this stage.
2. *Planstudiefase* (Plan Study Phase): Alternative solutions are worked out, and the possible effects of these various alternatives (including the 'zero option', or inaction) are indicated. In the second part of this phase, the key question is how the project should be executed. Steps are therefore taken to prepare the project for execution. The following project parameters, among others, will have been defined by the end of this phase: milestones, cost estimates including cashflow, time planning and details of how the project is to be integrated into the overall infrastructure and planning framework. The project

remains in the 'planning study table', however, until funds become available for its execution.

3. *Realisatiefase* (Implementation Phase): When sufficient funds become available, the project is carried out. On completion, it is removed from the programming table.

These three project-evaluation steps were intended to provide a basis for more stringent project control. In order to give them an official status, they were included in the budgetary tables of the *MIT*.

When the civil servants from the ministry got to see an overview of the financial wishes and pledges for the coming years (e.g. on the basis of ministerial answers to questions in the Second Chamber) they were disappointed to see that their programming framework had had no filtering effect whatsoever. While all projects proposed were dutifully submitted to the above three-step appraisal, the ministry never seemed to refuse approval to any of them. If the player submitting the proposal had enough patience - and in some cases that meant a lot of patience - they would see it carried out. No actual *selection* was taking place at all. Since finances were of course limited, each project proposed (and approved) was put on the waiting list and was carried out when funds became available. According to insiders, the total value of the projects in the pipeline at any given moment was some 40 billion guilders, even at a conservative estimate, and would remain at this level at least until the year 2010. And this did not even take account of the fact that some projects may well become more expensive as future environmental requirements become more stringent:

Although the rules of the game for this annual long-term planning round are known to all actors in the process, 'glitches' do occur in practice which make it necessary to change priorities. This may occur e.g. in the *planstudiefase*, if it becomes evident that it will be necessary to meet certain environmental requirements (more stringent than those laid down by law) thus causing the project costs to rise to an extent which could not have been foreseen beforehand. Another, related disturbance of the planning process which can sometimes arise is an appreciable delay in implementation due to time-consuming discussions, the appearance on the stage of the 'expert citizen' and various actions of lower governments (in connection e.g. with land acquisition and the granting of permits). Well-known examples of this type of problem include the environment friendly implementation of the HSL to Paris in the Netherlands, and the planning of the *Betuwe Line* train link from Rotterdam to the Ruhr. In such a situation, the long-term cashflow for a project can turn out much higher than was initially and quite honestly estimated and included in the budget on the basis of the standard agreed procedure. *The ultimate effect produced is that the delay in completion and increased costs of a given project lead to a knock-on effect in which the starting date of other projects (already approved and ready to start up) is delayed in turn. Alternatively, other projects which are already under way may be delayed if the starting date of a later project is already definitively fixed or if cashflow considerations make it impossible to delay it* (V&W 1998b: 6).

The following findings were published in the interdepartmental policy study entitled 'Financial framework for the physical planning of infrastructures', which provides an analysis of financial decision-making in support of the appraisal framework demanded by the Second Chamber:

In current practice, the decision-making concerning the route of an infrastructure project and its legal procedures for physical planning is uncoupled from the financial considerations in the Infrastructure Fund (which forms part of the debates on the *MIT* and the budget). The budgetary restrictions which play a key role in the final financial incorporation of a project in the budget estimates are not relevant during the initial decision about how much money to reserve for a project. This makes it unclear which other investment project(s) will have to have their budget cut to make room for the extra expenses demanded by the incorporation of the project under review. This lack of clarity means that the sponsors of projects which suffer from these extra budget expenses do not complain. It looks as if these additional project expenses do not cost society anything. (...) It should not be thought, however, that decision-makers are unaware of the existence of this displacement effect; the problem is that the decision-making procedure does not allow them to deal with it. Moreover, it may take 8 to 10 years after the taking of a *Tracébesluit* ('Route Decision') before a project is finally incorporated into the budget of the Infrastructure Fund. Thus, for example, the available investment budget in the *MIT* for the period 1998 - 2006 is divided up among a number of projects which are already under execution and others which have been approved but are being prepared for execution. It may take the life of two cabinets before the concrete consequences of additional budget expenses for other projects are felt. The longer it takes for these budgetary restrictions to hurt, the less people are inclined to worry about them, since it is difficult to relate the consequences to current decision-making and there are no mutually agreed 'hard' budgetary boundary conditions (V&W 1998b: 8, 9).

Ten years after Minister Smit-Kroes stood with empty hands in the Chamber when asked for an 'objective method' to be used as a basis for infrastructure policy, and five years after Minister Maij-Weggen was unable to tell the Chamber exactly how 'integral priority-setting' worked, Minister Jorritsma-Lebbink was faced with a motion concerning the desirability of an appraisal framework for the incorporation of infrastructure projects in both the budgetary and physical planning framework. During these ten years, many faces have changed in the executive and legislative arms of the government, but hardly anything seems to have changed in the parliamentary questions asked and the answers given. Or is this an illusion?

*New hope: the adaptation of the interaction process*

Although the Ministry of Transport, Public Works and Water Management is obliged to give prompt and satisfactory answers to parliamentary questions, it has not restricted its offers to a search for short-term solutions. It also ran two project teams whose terms of reference were *not* limited to looking for ways of estimating costs and benefits more accurately, or of reducing waiting times and speeding up project execution. These two pioneers were concerned with proposals for



improving the decision-making and appraisal process. They were called *PI* ('Prioritisation for key Infrastructure') and *Wegverlichting*, 'Road Lighting' (a misleading, metaphorical description). Both had the same objective: to modify bureaucratic structures, which had become overly rigid in the course of time, to permit a freer flow of information between the parties concerned. And both considered that the current decision-making and appraisal processes left considerable room for improvement: the State did not seek sufficient dialogue with social partners, and its solutions for social problems bore all too clearly the stamp of the typical monopolist.

PI saw the root problem as inadequate structuring of the interaction process, and made proposals for its systematisation. While it was necessary, in their opinion, to involve many actors in the appraisal process, there was no point in involving all the actors all the time. The field of debate should be divided up into 'process arenas', in each of which the relevant actors would gather at the appropriate time to discuss the issues of concern to them. A distinction was drawn between the general field of physical planning and social policy (process arena 0), the desired transport system (process arena 1), the desired traffic system (process arena 2) and the desired execution method (process arena 3).

Each process arena has its own flexible appraisal framework or process for arriving at policy choices, comprising a set of procedures for policy evaluation, where the right content could be filled in in each specific case, together with the relevant procedural boundary conditions. Each of the four process arenas has its own dynamic processes, which should be continually harmonised with those of other process arenas (V&W 1998b: 15).

PI opts for an approach in which the structure of the framework determines the direction of the interaction processes between the actors, and expects this to widen the support for the interaction (since all relevant parties are involved at some given moment) and to maximise the problem-solving level (since all actors decide about those aspects for which they have the necessary competence and expertise). In brief, the idea behind this approach is that the structure determines the process so that a good structure will lead to a good process.

The Road Lighting project takes a different - more or less diametrically opposed - approach. The process architecture is initially defined in a very rough way, but is expected to crystallise out in a more solid form as the process continues. Structure in decision-making is not the cause of good appraisal, as in the PI approach, but its result. It is considered unwise to formulate a general approach for all infrastructure projects because the differences between them are too great, and links can only be laid between different projects in an unstructured way. This spontaneity also leads to the highest level of innovation. The Road Lighting team uses concepts from

chaos theory as sources of inspiration to enrich decision-making. They propose the setting up of an *ad hoc* 'consortium' of government bodies, social groups and private parties, comprising all relevant political and social actors, where the chaos of ideas input via brainstorming sessions is converted into an ordered, executable set of solutions. The entire process basically comprises no more than the following five 'anchor points' (V&W 1998c: 15-16):

- *administrative process design*, bringing together all administrators whose field of authority is involved in the problem area;
- *creative chaos*, where the administrators involved generate possible solutions for and views concerning a variety of problems, without assuming hard and fast positions;
- *preliminary administrative design*, in which the administrators set up a consortium to work out a statement of the problem and possible directions in which solutions might be sought;
- *creative order*, where the public/private consortium develops the suggested directions in which solutions might be sought to concrete proposals;
- *definitive administrative design*, based on the proposals put forward by the consortium.

Since both the above-mentioned project teams do not place their emphasis exclusively either on *interaction* between the parties involved (so as to widen support for the proposals made) or on *interpretation* (by improving the appraisal methods used), their proposals must be seen as an appreciable step forward compared with the 'yes or no' discussions from the early 1990s: PI and Road Lighting agree that good analytical instruments do not always lead to widening of support for proposals made, and that consensus does not always lead to effective problem-solving. They both recognise the double-edged nature of decision-making, and convert this recognition into a search for wider participation of players, realised in such a way as to generate a wider variety of arguments.

This central idea is however worked out differently by the two teams. The PI framework resembles in many ways what is known as the 'Rhineland' policy scenario, the main stress being laid on order in the discussion process and containment of the relevant actors. The Road Lighting approach, on the other hand, looks a lot like the San Francisco 'autonomy and improvisation' model. It will be clear that the findings of both project teams bear a close resemblance to the institutional adaptations put forward in this book as desirable and in principle feasible.

However, the actual introduction of well thought out decision-making structures (PI) or the abolition of existing structures (Road Lighting) demands more than the making of suggestions about how to modify concrete working methods. The

dominant actors involved in the relevant institutional structure cannot be expected to modify their working style without a struggle, especially if this process demands sacrifices: it is not in people's natures to readily give up established positions with associated interests and privileges. On the other hand, pioneer projects can create a culture in which solid procedures or spontaneous interaction are accorded a higher value.

*Making effective 'conceptual and decision-making models for integral appraisal', or 'process designs for creative competition', is only possible on a fertile institutional soil. The proposed methods must be built into the institutional structure if they are to survive; if not, they will fade away slowly as a 'highly appreciated' file in the drawer of someone's desk.*

## 10.2 Analytical, political and procedural rationality

*An answer to the question posed at the start of this book*

In this book, an attempt has been made to reinforce the link between political and analytical rationality. Requirements against which the quality of decision-making can be tested have been formulated. The political rationality behind the actions of people, departments, organisations and various layers of government (all of which may be denoted by the term 'actors') is accepted as an empirical datum. Nevertheless, this political rationality will have to satisfy analytical boundary conditions if 'good' decision-making is to be achieved. The question posed at the start of this investigation was as follows:

*Can the quality of decision-making concerning infrastructural projects be improved by according methods of policy analysis an effective place in the policy process?*

*Is there a design method that can be used to develop institutional structures providing a firm basis for the discussion and assessment of arguments in the political process?*

The answer to the first question is 'yes'. 'Procedural rationality' can be used to organise decision-making in such a way as to permit problem solving and consensus formation to occur simultaneously. When problems are so complex that all the necessary information cannot be generated within a foreseeable period, decision-making is turned into a rational *search* procedure rather than a rational choice procedure. Procedural rationality is a principle which can be used to structure decision-making in a way allowing the parties concerned to deal effectively and consciously with the tension between political and analytical rationalities. In such a structure, pressure groups are no longer able to get their favourite projects carried out simply by means of political pressure without analytical foundation.

The arguments and calculations on which they base their proposals will have to be subjected to informed, impartial study. Policy makers, on the other hand, will no longer be able to put technical drawings and cost calculations on the discussion table when these have no demonstrable link with the political manoeuvres to which infrastructural projects are always subject. They can no longer evade the obligation at least to recognise and acknowledge that strategic behaviour does have a place in priority setting and ordering of alternatives in this field.

It must also be stated that the design methods of the type asked for in the second question do exist. Such a method, called 'institutional transplantation', is developed in the present book. The introduction of procedural rationality in decision-making demands redesign of existing decision-making rules or *institutions*. A promising way of finding the new institutions needed is to inventory examples from other countries. But the introduction of these exemplary institutions in an existing institutional structure is no sinecure. Not all change is an improvement, and not all improvements from the donor country fit the host structure. A proposed system of institutional transplantation must meet two main requirements procedural rationality and suitability:

1. *Procedural rationality*. The information supply must be demonopolised. As large as possible a *variation of ideas* should flourish within the institutional structure, to minimise the bias which always exists in the way light is thrown on problems. Institutional structures should promote the generation and storage of innovative ideas, thus maximising the chance of selecting good alternatives.
2. *Suitability*. New ideas or interaction patterns introduced into the institutional structure of the host country should not be incompatible with existing practices. In other words, transplants introduced must be viable, neither being rejected by the host system nor swamping it. The concept 'families of nations' is helpful to understand the administrative ground rules operating in countries. New institutional characteristics must be *transplanted* in such a way as to avoid foreign bodies or destructive ambiguities in the host structure.

*Requirement 1: institutional transplants contributing to procedural rationality*

The approach to decision-making about transport infrastructure taken here is evolutionary, and places innovation processes in a central position. The appraisal of infrastructure projects consists of a series of study and decision phases, but the institutional structure determines how the information derived from the various study phases influences the allocation of funds. Institutional structures give rise to more innovation when they *generate and retain a greater variation of ideas*.

Two mechanisms are of importance in this evolutionary process:

*Mutation and replication:* Replication is the exact copying of ideas from one actor to the other, while mutation is the copying of information in such a way that it undergoes modification on transmission. Mutation leads to more variety in the ideas generated, since more variants are produced. This is the source of innovation. More replication tends to maintain the stock of prevailing ideas without changing them at all. The degree of mutation is also called the *innovative power*. Replication processes flourish in environments where relatively few actors contribute ideas, and existing ideas are uncritically accepted, in *monocentric* power structures. The main feature aimed at in appraisal processes here is effectiveness: projects once approved must be executed as fast as possible. *Multicentric* structures, on the other hand, include many checks and balances and focus on the realisation of the wishes of all players considered to be essential for execution of the projects. When matters can only be brought to a good conclusion with the aid of contributions from many players, the exchange of arguments and figures is a *sine qua non* for any form of progress. The exchange of information promotes the creation of innovation.

*Cooperation and competition.* Competition in this context means the development of ideas by actors who operate as one another's competitors. In a laissez-faire selection environment, only ideas propagated by strong actors will survive. Competition leads to intensive screening of ideas for immediate viability. Cooperation, on the other hand, is found when actors develop ideas together; the institutional rules ensure here that the ideas of both strong and weak actors can be selected. Strong structuring of the decision-making process helps to lead all the various information input more effectively to a common selection environment. More cooperation leads to the incorporation of ideas in the appraisal framework. The degree to which a variety of ideas is incorporated in a selection environment is called the *storage power*. Institutional structures which foster commitment between actors, and where actors can only withdraw from agreements once made at a very high price, are said to be cooperative, and are characterised by a largely harmonised, transparent selection environment. Institutional structures where actors do not suffer too much when they put their own interests first, even when they are clearly at variance with those of others, do not often develop a joint appraisal framework. The selection environment is then fairly unstable, and not effectively guided by procedures which limit opportunism.

The matrix given below presents the summarising typology of institutional structures:

Table 10.1 Procedural rationality in the institutional structures

Dimensions	High mutation/creation (multicentrism)	Medium mutation/storage	Low mutation/creation (monocentrism)
High storage (cooperation)	Type 1 Stable selection environment with substantial variation Switzerland, Northrhine Westphalia	Germany	Type 2 Stable selection environment with minimal variation
Medium storage	Bay Area		Netherlands, France
Low storage (competition)	Type 3 Dynamic selection environment with substantial variation USA		Type 4 Dynamic selection environment with minimal variation England

Type 1 is the source of inspiration for a designer who wants to transplant innovative institutional characteristics. This type is characterised by a wide range of interdependent actors who maintain durable relations with one another. Thanks to their mutual veto powers, they stimulate one another to generate new variation; but at the same time they are then forced to share this variation in an appraisal framework which is generally wide in scope and brought about in an interactive process. The realisation of type 1 is a great challenge, because it demands a combination of multicentrism and cooperation between a large number of actors of roughly equal status.

The institutional structure in the Netherlands has been compared with those in five other countries (Switzerland, Germany, England, the United States and France) and two funding authorities for transport infrastructure (Northrhine Westphalia and the San Francisco Bay Area), to assess the Netherlands' 'score' in this field and to indicate which countries could serve as a provider of insitutional transplants. England is a typical example of type 4, and the United States of type 3. Germany is situated roughly between types 1 and 2. Switzerland, Northrhine Westphalia and the Bay Area all resemble type 1 most closely, though they do differ among themselves. Switzerland is characterised mainly by a cooperative approach and is less multicentric (the procedures used here are heavily systematised), while the stress in the Bay Area lies closer to multicentrism than to cooperation (the cooperative links between the various actors are looser and somewhat less

systematically constructed). Northrhine Westphalia is probably the closest to a classical type 1.

What these countries have in common is: (1) a distribution of financial and legal competencies over several government bodies and policy sectors, (2) influence of social groups, which rises above the level of formal consultation and has developed in the direction of public hearings where politicians listen actively and often adopt suggestions made by the public, (3) appraisal rules governing interaction between actors, which place a heavy penalty on opportunistic behaviour, and (4) appraisal frameworks reflecting the influence of many actors and which are ultimately accepted by all participants. The other countries, including the Netherlands, France and especially England have less favourable scores. In different ways and to different extents they are less multicentric and cooperative and may adopt transplants from the others to improve the viability and alertness of their systems.

*Requirement 2: Suitability of institutional transplants in the host system*

The restructuring of an appraisal process is a design question: the institutional structure has to be redesigned on the basis of a desired example. To this end, the existing structure must be analysed, after which a well thought out synthesis of existing and new features must be added. Although institutions can in principle be designed, a serious complication arises in this connection: institutions change gradually by an organic process, because they are rules used by people and they can only be changed if people accept this. Hence, institutional change is a question of evolution as well as design: *transplantation* is the concept that gives the best representation of the tension between introducing something from outside and letting it grow up internally.

Suitability or 'fit' is operationalised as the borrowing of institutional characteristics from related or compatible *families of nations* (Castles 1993). Such a family has a formal style of regulation and an informal style of personal interaction, which makes the family members resemble each other. The family often has a clearly recognisable ancestor which has exported its constitutional and/or institutional system to other countries (this is especially true of England and France), and whose descendants have preserved all or some of their national characteristics. In other cases, however, family members may borrow features from other families in the course of time, or develop their own. They are then not a straight copy of their ancestor. This process can give rise to hybrid structures or mixed forms.

The transplantation of institutional characteristics is precision work. The safest approach is to take over design features from other countries in the same family, but this is not always what a system needs to retain its vitality. It may sometimes be preferable to borrow less obvious transplants which would never arise in the institutional structure, but which can have a refreshing or stabilising effect.

Successful institutional transplantation demands in the first place congruence of transplanted characteristics with the structural and cultural ground rules of the host country. Institutional rules are often closely related to constitutional ones, and generally imply the same primary *modus operandi*. While the adopted institutional characteristics need not belong to the same family, they should not be in conflict with it. Tables 10.2a and 10.2b give an overview of the structural and cultural families of nations at the constitutional level.

Table 10.2a *Legal families of nations*

Characteristics of legal systems	<i>Checks and balances by the people (democracy, federalism)</i>	<i>Checks and balances by authorities (professionalism, federalism)</i>	<i>Authority (professionalism, unitarism)</i>
<i>Justice as a whole (contents, power distribution, system, code, territoriality)</i>	<i>Kommen wir zusammen</i> Switzerland	<i>Ordnung muss sein</i> Germany	<i>L'etat, c'est moi</i> France, Netherlands
<i>Justice in parts (process, power division, fragmentation, precedent, sectorality)</i>	<i>We, the people</i> USA		<i>Objections overruled</i> England

Table 10.2b *Cultural families of nations*

Dimensions	<i>Equality</i>	<i>Hierarchy</i>
<i>Integration</i>	<i>Structures networks</i> Germany	<i>Organic order</i> France
<i>Analysis</i>	<i>Western pluralism</i> USA, England, Netherlands, Sweden	<i>Command economy</i> East Germany before the <i>Wende</i>

Source: Hampden-Turner & Trompenaars 1992.

As may be seen from the above tables, the Netherlands shows marked hybrid features at the constitutional level. Its administrative and civil law system were strongly influenced by France in the 18th century (codification, unitary state), while in the 19th century it underwent some German influence via the constitution and various organic laws. These effects can still be felt today. At a cultural level, on the other hand, the Netherlands is situated somewhere between the 'Germanic' structured networks and the Anglo-Saxon village market. The value orientations in the Netherlands are completely different from those in France. That makes the choice of institutional features from other countries both more difficult and more



interesting. Incorporation of features from France and Switzerland creates great problems, for cultural and structural reasons respectively. English features are quite possible from a cultural point of view and structurally feasible, but as pointed out in the previous section they are generally undesirable for reasons of innovation. That only leaves transplantations from the United States and Germany, in particular the San Francisco Bay Area and Northrhine Westphalia. Both systems include institutions which could make Dutch appraisal procedures more procedurally rational. If we take the Rhineland scenario as an example, the loose ends in the unstructured Dutch institutional framework have to be tied to each other. Furthermore, actor behaviour has to be made less opportunist by pushing their tendencies to break arrangements and promises. 'Structuring and containment' are the key words. On the other hand, the Bay Area scenario prescribes 'autonomy and improvisation'. The dominant Ministry of Transport should have to be split up into autonomous agencies that become mutually dependent for the realisation of projects. As a strict legal framework is not appreciated, improvisation is the name of the game. In both scenarios, serious decentralisation of funding and the interactive establishing of an intermodal appraisal are vital. Transplants from these donor systems would seem to be viable and even desirable, but even these are not without risks. There will be a tendency to render flexible constructions used in the Bay Area a more permanent juridical status within the Dutch legal system, but in many cases they do not lend themselves to this. It will be equally difficult to resist the temptation to apply rigid German-style legislation (which has to be followed accurately and faithfully in order to guarantee success) in such an opportunistic, selective and *ad hoc* manner that the whole new system fails. Incidental borrowing from France (private finance constructions), Switzerland (referenda) or England (regional intermodal package bids) also deserve to be noticed, but their systems as a whole are not worth following.

There are indications that institutions from Scandinavian countries are relatively procedurally rational and fit the Dutch situation, but this has not yet been studied. Investigation of this point will yield much added value.



## Epilogue: the polder needs a moulder

Decision-making about infrastructures in the Netherlands is subject to continual delays. This leads to missed economic chances, costs which regularly exceed the budget and much longer periods of uncertainty than necessary for parties who may suffer inconvenience or damages as a result of the project in question. The Dutch Scientific Council for Governmental Policy (*WRR*) concluded in its 1994 report 'Decision-making for large projects' that decision-making and execution were faster in other countries, sometimes by several years. It claimed that Germany, Switzerland and England were faster and that France and Belgium were much faster. This undesirable situation was due to the combination of a large number of social and administrative veto powers and a lack of cohesion between the various legal regulations involved. There was a need to improve the decision-making procedure, especially for large projects. The *WRR*'s suggestion that there was a need for a *Wet grote projecten* ('Act for Large Projects') comprising three phases clearly separated from one another, namely *aarrangingsbesluit* (initial order), *beginselbesluit* (statement of principles order) and *uitvoeringsbesluit* (execution order), was turned down by the cabinet. However, the adoption of the 'open plan' process in which an open inventory round (where all interested parties are invited to participate) precedes the conventional decision-making procedure was the result of suggestions by the *WRR*. While this process has led to an increase in the number of contributions and suggestions submitted in connection with infrastructure projects, it has not improved consensus formation between the parties involved. The cabinet implemented the *WRR*'s advice in such a way as to leave intact all the existing regulations, and hence all the sources of conflict in the formal legal path followed by the project. In fact, procedures tend to be duplicated rather than simplified.

The conclusion drawn in the present book is that while there is definitely something wrong with decision-making procedures in the Netherlands, the time element is only a subsidiary aspect of the problem. The time taken for infrastructure projects to come to completion in Germany, Switzerland and England is comparable on average with that observed in the Netherlands. France is appreciably faster, but their lead is shrinking as the concentration of power in the hands of top-ranking politicians and civil servants, which makes this high speed possible, is being eroded and steps are being taken to limit these powers legally. The passivity of the populace at large has given way to violent civil protest, slowly but surely giving rise to gridlocks in the civil consultation process there too. The differences in the duration of the planning procedure are difficult to measure, rather relative in nature, smaller than thought and moreover of steadily shrinking importance. In every modern state, the great (and growing) division of power and influence between different social groups means that it inevitably takes time to gain broad support for a given (infrastructural) proposal, harmonise the views of the

various groups involved and deal properly with the people adversely affected by the project. Where time savings are possible, this cannot be achieved by exerting pressure and dictating to people unless one wants to spend most of one's time in conflict with administrative and social partners. When we consider the mechanisms determining consensus formation and problem solving in decision-making, we see that it is much more interesting to ask how the energy expended during the appraisal process can be put to *more constructive* use than how the duration of this process can be reduced.

*In short, countries which aim at speed in decision-making do not turn out to be any faster at it than are other countries, neither do they accrue any riches in the appraisals they make; while countries which aim at putting as great a variety of alternatives and data on the table as possible succeed in accruing such riches without having to pay a penalty in the form of slower decision-making.*

If we adopt this point of view, innovation-mindedness becomes of crucial importance in the decision-making process. The administrative structures and cultures must be tailored to promote the generation of a wide variety of information and subsequent active use of this variety in the making of choices. Institutional structures where no player can be clearly observed as guide and initiator of the activities, but where all parties concerned are mutually interdependent in all parts or at all phases of the decision-making process, score appreciably higher here than others. This is because interdependence promotes the exchange of information between the parties prior to the taking of investment decisions, making one-sided communication from dominant to recessive party a flat, profitless affair. Structures in which opportunistic behaviour and the breaking of promises after agreements have been reached are punished by social exclusion also score better in the use of innovative power than more competitive systems.

On the basis of these criteria, e.g. the Netherlands and England score appreciably worse than do Germany and Switzerland. The degree of financial centralisation in the former two is much higher, and their local authorities behave in a passive, reactive manner. An additional factor in England is that relationships between public bodies and interest groups are often tense and sometimes even hostile.

Proposals for reforming the decision-making structure on the basis of foreign examples have often been made. The transplantation of institutions in the Netherlands is also a promising way of increasing innovation. It is risky to do this, however, without paying attention to the context of these features in the country of origin, and the context in which they will be placed in the host country. As we have seen, it is difficult to assign the Netherlands unambiguously to a single family of nations from which typical features could be borrowed. While its formal structure may be called 'Continental', favouring a thorough, systematic and rational course of

the appraisal process, at the same time it does have informal communication procedures and standards placing great emphasis on flexibility and give-and-take which are rather more Anglo-Saxon in nature. The remarkable tension between *planners* and *pushers* which is the subject of this book is at least partly due to this duality, which should be borne in mind when transplanting institutions from one of the above-mentioned models, or from any other 'pure' model.

The mixed form of decision-making about transport infrastructure found in the Netherlands may look like a spatial variant of the *polder model*, that typical Dutch form of planning culture which has grown up naturally in a country where massive water management projects have been the warp and weft of public life since time immemorial and which has been characterised as lying neatly between the Rhineland and Anglo-Saxon models. But appearances can be deceptive. Why, otherwise, would Dutch parliamentary Leers (CDA) call the Babylonian confusion of speech between policy makers and pressure groups in current Dutch infrastructure appraisal practice a '*koldemodell*' ('baloney model') instead of a '*poldemodell*? It seems clear that mixing up institutions from different families of countries has not led to the desired result here.

The *way* in which the institutions are combined is of crucial importance for the functionality and productivity of the resulting institutional system. When features are interwoven so as to reinforce one another's positive aspects, added value can be produced. For example, when flexible Anglo-Saxon-type institutions prevail in decision-making phases where problems and alternative solutions have to be inventoried while Rhineland-type institutions are used (in the correct logical sequence) in implementation phases where agreements reached have to be turned into concrete deeds, this mixture of wide-ranging orientation and loyal execution is favourable. We get the best of both worlds in this situation. On the other hand, a structure where loyalty and consensus-seeking dominate during the inventarisation of ideas while the main stress phase is laid on opportunism, creativity and informality during the implementation phase is less likely to bear good fruits. When features are mixed in an unstructured way, the risk that different features will not reinforce - and may even oppose - one another's action increases. Uncertainty or ambiguity may then arise about the range of application, sequence and priority of the various rules involved. We may get two or more institutions with the same objective incorporated into the system, without having a clear idea about the exact relationship between them. Actors become confused, and conflicts break out concerning the delimitation of rules. This conflict may continue, possibly leading eventually to subjection of one institution to the other, or to useless duplication of procedures. The analyses given in the previous chapters indicate that the mixing of spheres of influence in physical planning decision-making has not entirely taken the desired course. How else can we explain the fact that so many appraisal frameworks

have been developed in the Netherlands that no one really knows any of them? That so many people view the recent *ad hoc* legislation in this field (the *Tracéwet*, the '*Nimbywetje*', the *Planwet*, the *Rijkswegenprocedure*, etc.) as 'reinforcements' of the *Wet op de Ruimtelijke Ordening* (Physical Planning Act), while these measures actually undermine the decentral philosophy behind the main legislation and cripple physical planning legislation as multifaceted policy with sectoral competition (see also WRR 1998, De Jong 1998b, Salet 1998)? This is a striking example of how irreconcilable planning philosophies can collide with one another.

A hybrid structure is not always bad in an institutional system; there may be no need to reduce the hybrid nature, to move in the direction of an 'original family', in order to make it more effective. The acclaimed socio-economic 'polder model' - in so far this deserves the name of 'model' at all (Visser & Hemerijck 1997) - may be regarded as a successful hybrid of Rhineland and Anglo-Saxon forces. However, not all mixed institutional forms in the Netherlands may be called polder models: a key characteristic of this successful socio-economic form is that the interests of the parties concerned are promoted in a strictly corporatist way. This is certainly not true of infrastructure decision-making in the Netherlands. It is not impossible to develop this or another well thought out variant and to transplant it to the Netherlands, but this demands a lot of patience, and mastery of the art of design. The '*Wassenaar* agreement', regarded in the Dutch socio-economic world as a culmination of the unity between the socio-economic partners that had developed over the years, was largely the fruit of explicit awareness of the merits of the Rhineland and Anglo-Saxon models, and successful coupling of these two approaches. It requires mastery of the art of design to achieve this, because the actual work of institutional transplantation is a process of fitting and measuring in which the institutional designer will only succeed if he realises that redesign practically always yields both winners and losers, and that the projection of an attractive perspective and reflection in action is the only worthwhile path to follow (De Bruijn, Ten Heuvelhof & In 't Veld, 1998).

Three institutional features are the most promising candidates for use in achieving a kind of polder model for physical-planning decision making. Among these suggestions, the second and third were taken from the Northrhine Westphalia and Bay Area scenarios (chapter 9), whereas the first is a transplant from the *real* Dutch polder model itself, the one in the socio-economic sector.

1. *Tripartite agreement* between organised industry, a central body speaking on behalf of all environmental action groups and the authorities concerning the need and the will to lay down a central line for the development of Dutch physical planning decision making. The Crown representatives will come from both national, regional and local authorities. It would be desirable for the minister of Transport, Public Works and Water Management to adopt roughly the same

stance as the minister of Social Affairs in wage negotiations: no interference except in cases of emergency. Since the government manages and distributes funds raised from taxation, the minister's coordinating role will actually have to be stronger than before.

2. An *interactively developed, generally accepted intermodal appraisal framework*, which may be regarded as the infrastructure equivalent of the central policy agreements between the authorities, employers and employees concerning developments in the socio-economic sector. Such intermodal appraisal frameworks are already found in Germany and some American states and authorities. It is of key importance for the administrators and social partners to make joint use of brainstorming techniques to inventory, select and approve the arguments and criteria which seem to them to be relevant. Only this time-consuming but in the long term very productive approach guarantees intensive, meticulous use of the relevant information to achieve effective appraisal. This approach might conceivably also be applied in a wider context to distribution of the ICES funds,<sup>24</sup> though it should be noted that the involvement of infrastructure sectors other than transport increases the conceptual complexity of this construction quite considerably.
3. Serious *decentralisation of financial resources*, in the sense that local and regional infrastructure can really be paid for by the local and regional authorities concerned. When local and regional authorities are given responsibility for the projects which concern them, they will give up using their veto powers and opportunistic financial estimates in favour of negotiations with their neighbours and with the national authorities. Regional package deals between various parties in the region are the most creative product of this approach, since the regional authorities are the actors best able to estimate who needs what from whom, and where. Public-private cooperation at this level is also much more useful, since a concrete link can be laid between transport infrastructure and various other aspects of physical planning development and arrangement.

As the above examples show, policy solutions from across the border can be a strong source of inspiration for the improvement of our own system. Other environments may have developed solutions that did not come up in one's own system. It is crucial, however, to consider institutional transplantation as a conscious and conscientious activity. Not all administrative and management fads that are blown from across the ocean or other parts of the world have positive effects elsewhere. This goes for both the public and the private sectors. It may be that *Rijkswaterstaat* took a wise decision when it replaced the *arrondissementingenieurs* ('district engineers dating from the French period') with more modern Americanised regional 'management teams'. The Japanese concept of 'Just in Time management' could quite a relief for the organisations concerned with transport

logistics companies as compared to the 'as quick as possible from A to B philosophy' which was current before its introduction, but its success hinges on the trust that the various actors have in each other. Privatisation may shake up our public sector and prevent it from being lulled asleep, but if rather expensive public monopolies become very expensive private monopolies the siren's song of Anglo-Saxon competitiveness may have been misinterpreted. It appears that in the world of the stock markets, the phenomenon of hostile takeovers has become inescapable. If so, would it not be a good idea to explore its pros and cons instead of letting it come over us passively? Does it fit us, or could it fit us better if slightly transformed to accommodate our legal system or cultural background?

Hofstede (1997) writes that national cultures can be seen as being comprised of four layers: symbols, heroes, rituals and values. *Symbols* are words, gestures, pictures or objects that carry a particular meaning which is only recognised by those who share a culture. Symbols are the outer, most superficial layer of a culture. *Heroes* are persons, alive or dead, real or imaginary, who possess characteristics which are highly prized in a culture, and who thus serve as models for behaviour. *Rituals* are collective activities, technically superfluous in reaching desired ends, but which, within a culture, are considered as socially essential: they are therefore carried out for their own sake. Symbols, heroes and rituals together are subsumed under the term *practices*. The deepest core of a culture are its values, which things are deemed important and desirable and which are not. In their model of culture, Trompenaars & Hampden-Turner (1998) refer to (1) artifacts and products, (2) norm and values and (3) implicit basic assumptions, which despite their difference with Hofstede's terminology also refer to layers of culture. Fashionable administrative and managerial concepts such as 'integral management' or 'coopetition' or 'social cost-benefit appraisal' sound like straightforward, rational and desirable symbols, heroes or artifacts for all Western nations, but when it comes to their application and implementation, they turn out to have ambiguous meanings. In the environment of their new host their meaning may differ from the one in their donor system (Speel 1997). The concepts only become meaningful when in their daily use, they are tied to local or national values or basic assumptions of what matters in life.

In the wake of an increasing number of international contacts and a globalisation of politics and business, it looks as if the importance of foreign styles and concepts of management and administration will be of increasing importance as well. Sometimes it seems as if they spread like contagious viruses that organisations in the public and private sector unwarily undergo. It need not be so. And it is better to have a timely grip on them before they get a grip on us.



# Appendix 1: Questions asked in all six countries

The general question asked in each country was as follows:

*How does the institutional structure for infrastructure policy affect priority-setting and programming in practice?*

The following steps were taken to obtain an answer to this general question:

*Block A: Questions concerning general transport infrastructure policy.*

- A1. What is the prevailing general view about transport policy?
- A2. How supply- or demand-oriented is the infrastructure policy?
- A3. Which levels of government develop their own infrastructure, and who finances these networks? Where are the boundaries between (inter)national, regional and local infrastructure?

*Block B: Questions relating to priority-setting and programming practice.*

- B1. What does the formal procedures for assessment and implementation exist?
- B2. To what extent is the informal deliberation practice in compliance with the formal procedures? In other words, what are the relationships between the formal and informal worlds in connection with the use of research information?
- B3. What effect do the procedures have on the transition from strategic appraisal to funding and implementation of individual projects? In other words, how are the formal and informal worlds related in connection with project phasing?

*Block C: Questions concerning the organisational relationships in infrastructure policy and its administrative environment, and the effect of this on priority setting.*

- C1. What are the relationships between the various levels of government involved (international, national, regional and local)?
- C2. How are the interdepartmental relations? In other words, how does infrastructure policy fit in with physical planning, environmental care, (regional) economic development and the setting of the general financial framework? How do the projects fit in against these neighbouring policy sectors?
- C3. How are the intersectoral relationships? In other words, how are choices made between transport modes, and how are logistic links laid between modes?
- C4. How are the state society relationships? In other words, what part do individuals and pressure groups play in the decision-making process, and how open (or closed) is this process for these parties?

## Appendix 2: List of foreign respondents

### *Switzerland*

Hr Ötterli, EVED (Eidgenössisches Verkehrs und Energie Departement)  
Hr Testoni, EVED  
Hr Rist, EVED  
Hr Berger, BAV (Bundesamt für Verkehr)  
Hr Jerra, SBB (Schweizerische Bundesbahnen)  
Hr Hadorn, SBB  
Frau Staub, SBB  
Hr Stalder, SBB  
Hr Gianella, BUWAL (Bundesamt für Umwelt, Wald, und Landschaft)  
Frau Berretta, BUWAL  
Hr Jäggi, Kanton Bern  
Hr Werder, Kanton Bern  
Hr von Känel, Kanton Bern  
Hr Zimmerli, Universität Bern, Ständerat  
Hr Amacker, RBS (Regionalverkehr Bern-Solothurn)

### *Germany*

Hr Näke, BMV (Bundesministerium für Verkehr)  
Frau Pipper, BMV  
Hr Weber, BMV  
Hr Gatzka, MWMTV (Ministerium für Wirtschaft und Mittelstand, Technologie und Verkehr des Landes Nordrhein-Westfalen)  
Hr Herz, MWMTV  
Hr Höhn, Innenministerium des Landes Nordrhein-Westfalen  
Frau Tack, PDS (Partei des Demokratischen Sozialismus), Landtag Brandenburg  
Frau Bley, PDS, Brandenburg  
Hr Mehlmann, MSWV, (Ministerium für Stadtentwicklung, Wohnen und Verkehr des Landes Brandenburg)  
Hr Neumann, MSWV  
Hr Faber, MSWV  
Hr Pfeil, Hochschule für Verwaltungswissenschaften, Speyer  
Frau Eckert, Hochschule für Verwaltungswissenschaften, Speyer  
Hr Wohlfarth von Alm, Senatsverwaltung für Verkehr und Betriebe von Berlin  
Hr Wolf, Verkehrsverbund Rhein-Sieg GmbH

### *England*

Mike Talbot, DoT (Department of Transport)  
Tom Worsley, DOT

Roger Peal, DOT  
David Padfield, Roads Division, DOT  
Syd Poole, Roads Division, DOT  
Elizabeth Gilliard, DOT  
Don Stewart, Government Offices for the North West  
Alan Peake, Borough of Blackburn  
Peter Greenwood, Borough of Blackburn  
Bill Tyson, GMPTE (Greater Manchester Planning and Transport Executive)  
Richard Elliott, City of Manchester  
Roger Tripp, City of Manchester  
Steven Weaver, City of Manchester  
Pauline Offwood, Association of District Councils  
Robin Clement, LPAC (London Planning Advisory Committee)  
Janice Morphet, SERPLAN (London and South Eastern Regional Planning Conference)  
Neil Paultley, TRL (Transport Research Laboratory)

*United States*

Michael Hoffacker, SACOG (Sacramento Council of Governments)  
George Schoener, US DoT (United States Department of Transportation)  
Sheldon Edner, US DoT  
Dee Spann, US DoT  
Harry Caldwell, US DoT  
Samuel Zimmermann, US DoT  
Randy Howes, Washington Metropolitan Area Transit Authority  
Frank Limacher, Caltrans (California Department of Transportation)  
David Clark, Caltrans  
Bill Wilkinson, Caltrans  
Stephen Maller, Caltrans  
David Brewer, CTC (California Transportation Commission)  
Mike Wiley, Regional Transit Offices of Sacramento  
David Murray, MTC (Metropolitan Transportation Commission)  
Janet McBride, ABAG (Association of Bay Area Governments)  
Michael Crane, Dulles Toll Road  
Suzanne Conrad, Dulles Toll Road  
Janet Oakley, NARC (National Association of Regional Councils)  
Richard Hartman, NARC  
John Bosley, NARC, Metropolitan Washington Council of Governments  
Trevis Markle, Transportation consultant to NARC  
Kenneth Duron, BART (Bay Area Rapid Transit)  
John Glover, Port of Oakland

*France*

Alain Fayard, METT (Ministère de l'Équipement des Transports et du Tourisme)

Karine Bussone, METT

Manuel Leconte, METT

Roger Lejuez, METT

**Philippe Matthieu, METT**

Jean-Michel Fourniau, INRETS (Institut National de Recherche sur les Transports et leur Sécurité)

Daniel Bollo, INRETS

Jean-Pierre Orus, SETRA (Service d'Études Techniques des Routes et Autoroutes)

René Escalle, Association des Maires de Grandes Villes de France

## Appendix 3: 30 institutional characteristics

### *Characteristics in the federalism index (FED)*

#### 1. The number of financing actors

How large is the number of public and private organisations, other than the directing government, that provide substantial financial contributions to infrastructure projects or programmes and thus determine their selection?

- A. HIGH, a considerable number of public and private actors possess a certain amount of money which is insufficient to realise projects independently. Thus an extensive field of mutually dependent actors is created: USA, SFBA
- B. MID, a limited number of predominantly public organisations possesses relatively large budgets, that are often mixed in order to realise scale effects. This creates an oligopolistic market situation: CH, D, NRW, F
- C. LOW, there is one actor who possesses the major share of financial means and is thus able, in principle, to determine the investment agenda, This results in a quasi-monopolistic situation: NL, ENG

#### 2. Importance of territorial distribution

How large is the importance of territorial distribution in the allocation of financial means to various regions within a country or state?

- A. HIGH, when all constituting actors receive a more or less proportionate share according to a predetermined key. This is called territorial equity: CH, D, NRW, USA, F
- B. MID, when clear financial distribution rules exist for various regional governments, while transport efficiency is pursued within the boundaries of territorial equity: SFBA
- C. LOW, when only a rational assessment of the entire area is taken into account, and not the distribution between regions. This is called transport efficiency: NL, ENG

#### 3. The importance of consultation rounds

How large is the importance of subnational governments in infrastructure planning during consultation rounds organised by the directing government?

- A. HIGH, when the higher authority mainly advises, facilitates and directs, basically relying upon data supplied from the bottom-up and evaluated by the assessment criteria of this higher authority: NRW, USA, SFBA
- B. MID, when prior to making final choices, the directing government has extensively requested subnational government for comments: CH, D, F
- C. LOW, when informing subnational governments about plans largely takes place after the choices are made: NL, ENG

#### 4. Juridical role of subnational government

How large is the formal-juridical role of subnational governments on national infrastructure planning?

- A. HIGH, since subnational governments have a strong independent democratic position. Also, the governments or private persons own the ground and can only be forced to appropriate these against high costs: USA, SFBA
- B. MID, when subnational governments have to include national plans in their local plans, even though they can be forced to do so after a stipulated amount of time: CH, D, NRW, NL
- C. LOW, when subnational governments have no formal standing and construction can start without their approval: ENG, F

#### 5. The role of regional government

How strong is the hold that regional government has been given financially, juridically and organisationally to prioritise regional infrastructure?

- A. HIGH, when regional government is specifically created to address regional transport, which fact is enacted in law and translated into guaranteed budgets: NRW, SFBA
- B. MID, when there are no special regional administrations or help structures for regional transport, but the existing structures do deal with that reasonably well and are also financially viable: CH, D, USA, F<sup>86</sup>
- C. LOW, since the existing structures hardly possess their own financial means and the help structures have no settled form. They are thus open to opportunism of involved parties in the cooperation. That vacuum is often filled by deconcentrated agencies: NL, ENG

#### *Characteristics in the Democracy Dimension (DEM)*

#### 6. The role of referenda

How important is the role of people's referenda and other types of direct democracy, such as hearings, in decision-making about infrastructure?

- A. HIGH, when both referenda and hearings have a long standing place in the assessment: CH, USA, SFBA
- B. MID, when referenda and open planning processes are still in an experimental phase: D, NRW, NL
- C. LOW, when there is hardly any influence of societal groups outside the limited official participation procedures: ENG, F

### **7. Room for participation procedures**

How much room does national government allow for planning and participation procedures and how much time is taken for discussions with private citizens?

- A. HIGH, when every interested individual can participate and remind their democratic representatives of their responsibility: CH, NRW, USA, SFBA
- B. MID, although citizens have a formal right to participate, participation is something different than deciding: D, NL
- C. LOW, when the construction of infrastructures is mainly a management issue. Participation procedures were hastily adopted when societal resistance mounted, but are not well developed: ENG, F

### **8. Openness of the societal discussion**

How open is the societal discussion about vision, criteria and alternatives used in the assessment of infrastructure projects?

- A. HIGH, since a large number of opinions, facts and alternatives are generated even outside the institutional channels: NL, ENG, USA, SFBA
- B. MID, when attempts are made to channel contributions from societal groups with encapsulating procedures: CH, D, NRW
- C. LOW, when attempts are made to avoid societal pressure as much as possible: F

### **9. The role of societal groups on the assessment criteria**

How large is the influence of societal groups on the integral vision or the assessment criteria within the institutional channels during the prioritisation process of infrastructure projects?

- A. HIGH, for there is open lobbying for interests and numbers fulfill a maximum instrumental and quasi-objective role: USA
- B. MID, when a multitude of criteria and alternatives can be found in the policy analysis models. This is a situation of regulated lobbying for interests with substantive minimum conditions: CH, D, NRW, SFBA
- C. LOW, when technical and rate of return issues within the institutional channels overshadow the contributions from the societal discussion during the decision-making: NL, ENG, F

### **10. Representative role of public authorities**

To what degree are public authorities legitimised by the individuals that independently - and with a focus on independence - created them?

- A. HIGH, public officials are almost always elected and are frequently held accountable by the public in case of discontent. The 'We, the people' feeling is strong and the taxpayer is very alert about the distribution of his resources: CH, USA, SFBA

- B. MID, a strong tendency in the direction of societal discontent about decision-making structures is visible, but this has not yet been transformed into new institutional structures: D, NRW, NL, ENG
- C. LOW, when the State is the highest body and the societal discontent is met through opposing current elite-experts with counter-expertise: F

*Characteristics in the Integralism Dimension (INT)*

**11. Interdepartmental nature of plans**

To what extent are used plans and concepts in infrastructure planning interdepartmental by nature?

- A. HIGH, since terminology and set goals with respect to traffic, environment, physical planning, macro-economy and finance can all be found in infrastructure policy: CH, D, NRW, NL, SFBA
- B. MID, since the terminology is mainly limited to macro-economic and financial criteria: F
- C. LOW, since the traffic issue is hardly more than a financial-economic problem: ENG, USA

**12. Formal importance of environmental impact reports**

How great is the formal importance of environmental impact reports in the prioritisation process?

- A. HIGH, since they must be conducted several times during the process, since they take up a substantial amount of time and since there are several types. The institutional ecological forces play in important veto role in contracting and assessment: CH
- B. MID, since they are mandatorily performed once or twice by a designated authority in government but according to regulation, the results do not have to be used: D, NRW, NL
- C. LOW, since regulations oblige the organisation of an environmental impact report, but it is only pursued in projects with a major impact on the environment: ENG, USA, SFBA, F

**13. Informal importance of environmental impact reports**

How frequently are environmental impact reports organised unofficially and how large is the impact on the discussion about nature and the environment?

- A. HIGH, since at the strategic, tactical and operational level many EIRs take place that restrict the dominance of economic considerations. Nature preserve areas are forbidden territory for infrastructural activities as a result of protective measures: CH, D, NRW, SFBA
- B. MID, since finding a balance between economy and ecology does not lead to serious restrictions on economic considerations. Nature and environmental interests can be bought off through the principle of compensation: NL, USA
- C. LOW, since the motive behind infrastructure construction is economic and the termination of projects primarily occurs only in the case of financial stress: ENG, F



#### 14. Broadness of the assessment framework

How large is the variety of arguments and criteria in the assessment framework that is applied during the evaluation and the quality measurement of traffic?

- A. HIGH, when the *citizen* is allowed to speak his mind about the functioning of the schedule of an entire transport network; materially speaking public authorities fill the needs. This approach is known as 'stated preference': CH, D, NRW, F
- B. MID, although the citizen can voice a general judgment about network connections, principles such as profit and road pricing are frequently mentioned: NL, SFBA
- C. LOW, when only the *users* can indicate the desirability of new infrastructure. Investment expectations, quantitative quality norms and marketing techniques and other types of market imitation by investors are closest to this. Users display their interest for transport through 'revealed preference' of actual use: ENG, USA

#### 15. Importance of spatial translation

How important is it that infrastructure planning is translated into physical planning?

- A. HIGH, since every new infrastructure connection has to be part of binding physical plans and construction of infrastructure occurs along the lines of physical legislation: NL
- B. MID, when new infrastructure connections are part of physical plans, but according to sectoral legislation prevailing over aspect-legislation: CH, D, NRW
- C. LOW, since binding physical plans are rare nor is there a place for them. If physical plans have been drawn up, these can easily be set aside when the sector pursues a particular infrastructure connection: ENG, USA, SFBA, F

#### 16. Belief in the supply approach

How great is the belief that a larger and better supply of traffic and transport services, on the basis of transport science calculations, will result in more users or that more infrastructure will result in more economic growth?

- A. HIGH, when individuals believe that each supply creates its own demand and emphasis is placed especially upon the benefits of infrastructure: CH, D, NRW, F
- B. MID, developments in demand are usually followed slowly, while in the case of a chronic lagging behind, a strong supply view is provided: NL, SFBA
- C. LOW, when demand automatically leads to supply; a broader conception is not necessary. Individuals concentrate mostly on the costs of infrastructure: ENG, USA

#### 17. Public nature of reports

How great is the public (legal) nature of published reports, analysis and memos, either because they are executed by the public bodies themselves or executed by private enterprise under the supervision of public authorities?

- A. HIGH, when almost all studies, public and private, are published as public studies and discussed within institutional channels. Actors thus depart from the same arguments and figures and do not engage in studies of their own: CH, D, NRW, SFBA
- B. MID, although almost all studies are public, the policy relevancy discussion often occurs in a more limited group: F
- C. LOW, since in addition to public studies, there are also many private policy studies of actors outside the institutional channels; these often point to issues that, frequently, are not considered by the decision-making actors. There is no general acceptance of arguments and data: NL, ENG, USA

#### 18. Nature of public-economic prioritisation

How great is the attention for ways of prioritising and programming outside public-private partnerships, performance incentives and private financing?

- A. HIGH, when legitimacy is not given to incentives found in the private sector during prioritisation nor programming. Partnerships are usually public-public, public financing is cheaper and performance incentives blur the focus on the broader general interest: CH, D, NRW, NL
- B. when prioritisation is largely a public matter that guarantees the realisation of entire networks and where individual self-interest is minimised. Programming and execution is often contracted to semi-private parties with substantial experience in project management. The private element is mitigated as profits and losses are settled between these contractors and loans can be made with state funds: F
- C. LOW, since a managerial philosophy is central in the development of and choice between various alternative projects. Parties are sanctioned by financing governments on cost-reduction, creative bookkeeping and risk-taking: ENG, USA, SFBA

#### 19. Importance of assessment in territorial context

How strong are the institutional arrangements which allow the weighing of different issues within the same geographical territory and which do not search for goal specific constructions per policy area that might be related to other geographical territories?

- A. HIGH, insofar as there are diverging interests, these are almost always weighed in one single and consistent territorial context. Reorganisations do not often occur and when they do, individuals take their time to do them: CH, D, F
- B. MID, although the integrity of public bodies is not disputed, adaptations are sometimes acceptable in the form of functional help structures: NRW, NL
- C. LOW, hardly, if any, constitutional basic minimum of territorial government exists, so that there are many functional authorities with their own goals which regard themselves largely as

competitors for financial resources. Reorganisation of administrative structures is popular: ENG, USA, SFBA

## 20. Extensive formulation of assessment criteria

How large is the number of substantive criteria formulated for a policy analysis on the basis of which financial resources are allocated? Are they defined in a relatively strict and elaborate manner or are the planning requirements developed rather loosely and especially focused on process and procedure?

- A. HIGH, the criteria are strict and elaborate. A stable list is developed of general economic, ecological, spatial, security and other criteria, and financing outside this procedure is almost impossible: NRW, ENG, SFBA
- B. MID, substantive criteria exist, but they are used loosely. Norms for the allocation of financial resources are developed regarding cost, environment and security, but application of these does not often occur and there is no consensus about their contents: NL, F
- C. LOW, the criteria are at best procedural since the belief in encompassing the management of traffic issues is limited. Process norms are flexible and provide the guarantee that the financing body investigated the relevant aspects of a project: CH, USA

### *Characteristics in the Corporatism Dimension (COR)*

## 21. Intermodal nature of plans

How large is the intermodal nature of plans and concepts used in infrastructure decision-making?

- A. HIGH, since almost all transport modes are brought together and harmonised into one single assessment: NRW, SFBA
- B. MID, at the regional level there are efforts to organise intermodality, but these have not (yet) acquired fixed form: CH, NL, ENG, USA
- C. LOW, the various transport sectors operate in their own field and this rarely changes: F

## 22. Intermodal nature of legislation

How high is the intermodal nature of legislation and the funds from which transport infrastructure is financed?

- A. HIGH, since there is only one fund or budget that finances all types of transport. Up to a certain point they are divided: NRW, NL
- B. MID, since the use of funds is tied to particular modes, but organisational constructions exist that enable money to flow back to an intermodal source: ENG, SFBA, F
- C. LOW, since the taxes for the different modes are usually general levies that can only be spent on that mode or tied to lump sum amounts: CH, USA

### 23. Importance of actor commitment

How high is the importance attached to actor commitment to decisions made and how strictly are they held to their commitment?

- A. HIGH, when one can be ostracised from the informal network in case of disloyalty to the select group of political friends and actors: F
- B. MID, when every participating actor is obliged to sign for participation in a decision-making process, and will be thrown out of the project or programme if responsible for counter-information or opportunistic behaviour: CH, D, NRW, SFBA
- C. LOW, when there is scarcely any formal channeling of the decision-making process or when the informal process largely takes place outside the formal procedures; opportunism and changing opinions play a large role in political deals. Pressure groups are unfaithful: NL, ENG, USA

### 24. Formal role of assessment procedures

How large is the formal role of assessment procedures in the infrastructure decision-making?

- A. HIGH, since many interests are linked to many plans, and permits play a role in complex projects: CH, D, NRW, NL
- B. MID, they are not necessary given the informal rules, unless there are conflicts: F
- C. LOW, when formal rules are considered a nuisance and informal rules develop in practice. Decision-making is negotiation: ENG, USA, SFBA

### 25. Importance of prior standardisation

How important is the assessment between and standardising traffic connections prior to construction of infrastructure and the actual realisation of the infrastructure?

- A. HIGH, when prior to individual projects, large master plans are developed in which a new traffic concept is elaborated. Minimum network schedules and a fixed supply of transport from every location is central: CH, D, F
- B. MID, when adaptations are usually considered within the existing traffic network; adaptations are usually isolated projects. Although a network schedule is regarded important, one hesitates to set strict general minimum demands: NRW, NL
- C. LOW, when new projects usually spring from deals between a number of parties acting in a self-interested way, there is seldom room for grand theories or a prestigious approach: ENG, USA, SFBA

### 26. Promoting network effects

To what degree are occurring network effects promoted by the institutional structure as a consequence of linkages between connections?

- A. HIGH, since the number of actors is somewhat limited, their relative size is larger and there is a search within organisational arrangements (inside and outside government) for the net scale comprised of a system of connections. The motto is always 'as quickly as necessary' from point A in order not to miss the connection at point B: CH, D, NRW
- B. MID, since belief in the occurrence of network effects of infrastructure exists, but in the development of arrangements, more pressing arguments - such as speedy conclusions and economic benefits - usually dominate: NL, F
- C. LOW, when the total number of (small) actors is large, and when they all own or manage one or a few connections. For an overview, continuous coordination between parties is necessary regarding the (re)distribution of future costs and benefits. Each line has to individually be profitable; the motto is 'as quickly as possible' from point A to point B: ENG, USA, SFBA

#### 27. Equal distribution over modes

To what degree is the distribution of financial means over the various modes equal, in the sense that no infrastructural mono-culture can be created?

- A. HIGH, when there is substantial investment in all four types of line infrastructure: NRW, NL
- B. MID, when serious money is put into two or three types of line infrastructure: CH, F, SFBA
- C. LOW, when attention is reserved for only one type of line infrastructure. The rest basically goes to junction infrastructure. Modes that cannot maintain themselves will disappear: ENG, USA

#### 28. Reliability of financial promises

How reliable are promises to create financial resources in the budget?

- A. HIGH, the subsidy is a total budget for all activities in the form of a lump sum for an investment program, and deviation is only possible with substantial effort: CH
- B. MID, agreements between governments are formally binding. Parliamentary budget discussions take place on the basis of plans or programs, while annual budgets become routine after approval of these plans. After the period during which agreement has been reached, the agreements can be reviewed in a new program: NRW, F
- C. LOW, expenditure agreements between governments have to be approved by parliament every year and can therefore be adjusted annually. This regularly happens: NL, ENG, USA, SFBA

#### 29. Avoidance of privatisation tendencies

To what degree have privatisation tendencies been avoided with respect to monopolies, divestitures of transport companies and the selling of infrastructure in order to recast them into institutional arrangements?

- A. HIGH, divestiture of transport companies, competition and the selling of infrastructure have not occurred: CH, F

- B. MID, divestiture of transport companies is (almost) realised, juridical monopolies no longer exist, but the selling of infrastructure is not an issue: NRW, NL, SFBA
- C. LOW, divestiture and the selling of transport companies to the private sector are realised, new infrastructure is often privately planned and financed and the selling of infrastructure is possible: ENG, USA

**30. Strength of the relationship between infrastructure and exploitation**

How strongly are investments in infrastructure and exploitation issues evaluated in relation to one another?

- A. HIGH, the budgets that pay for infrastructure investments and exploitation subsidies are the same. Moreover, the representatives of transport companies occupy positions in the consulting bodies. Transport is integral service delivery: CH, D, NRW
- B. MID, the bodies that finance transport connections explicitly inquire with the transport companies about the effects of connections on profits and the costs of semi-public or private services, but leave it at this marginal degree of control. Transport means self-help: ENG, USA, SFBA
- C. LOW, infrastructural funds and means for exploitation are distributed along different channels, so that integral assessment of the entire transport issue is not possible. Transport means economic growth: NL, F

## Appendix 4: Country similarities on four indices

### *FED similarities between countries*

Countries	CH	D	NRW	NL	ENG	USA	SFBA	F
CH	--	5	3	1	0	2	0	4
D	5	--	3	1	0	2	0	4
NRW	3	3	--	1	0	2	2	2
NL	1	1	1	--	4	0	0	0
ENG	0	0	0	4	--	0	0	1
USA	2	2	2	0	0	--	3	2
SFBA	0	0	2	0	0	3	--	0
F	4	4	2	0	1	2	0	--

Roughly three clusters can be distinguished on this index, namely an Anglo-Saxon-European (Netherlands and England: non-federal), a continental-European (Switzerland, Germany, Northrhine Westphalia and France: mildly federal) and an American group (USA and the Bay Area: highly federal).

### *DEM similarities between countries*

Countries	CH	D	NRW	NL	ENG	USA	SFBA	F
CH	--	2	3	0	0	3	4	0
D	2	--	4	3	1	0	1	0
NRW	3	4	--	2	1	1	2	0
NL	0	3	2	--	3	1	1	1
ENG	0	1	1	3	--	1	1	3
USA	3	0	1	1	1	--	4	0
SFBA	4	1	2	1	1	4	--	0
F	0	0	0	1	3	0	0	--

Three clusters can also be distinguished in this table: low democracies (England and France), temperate democracies (Germany, Northrhine Westphalia and Netherlands) and high democracies (Switzerland, USA and Bay Area).

*INT similarities between countries*

Countries	CH	D	NRW	NL	ENG	USA	SFBA	F
CH	--	8	7	2	0	1	3	3
D	8	--	9	3	1	0	4	3
NRW	7	9	--	4	1	0	4	2
NL	2	3	4	--	1	2	3	1
ENG	0	1	1	1	--	8	5	3
USA	1	0	0	2	8	--	4	2
SFBA	3	4	4	3	5	4	--	2
F	3	3	2	1	3	2	2	--

In this table two clear clusters appear, the integralist, Germanic cluster (Switzerland, Germany and Northrhine Westphalia) and the reductionist Anglo-Saxon cluster (England and USA). Three countries roam in-between. The Netherlands and the Bay Area hang between the two clusters and have their own specific characteristics, while France does not display any pronounced characteristics.

*COR similarities between countries*

Countries	CH	D	NRW	NL	ENG	USA	SFBA	F
CH	--	5	4	2	1	2	2	3
D	5	--	9	4	0	0	3	1
NRW	4	9	--	5	0	0	3	1
NL	2	4	5	--	3	3	2	2
ENG	1	0	0	3	--	9	6	1
USA	2	0	0	3	9	--	5	0
SFBA	2	3	3	2	6	5	--	2
F	3	1	1	2	1	0	2	--

The same is true for COR as it was for INT; there are again Germanic and Anglo-Saxon clusters, with The Netherlands and the Bay Area in between, though not showing any similarities with each other.



## Appendix 5: Hofstede's families of nations

Country	PDI (18)	IDV (18)	MAS (18)	UAI (18)	LTO (8)
GB	35 (10/11)	89 (3)	66 (5/6)	35 (15/16)	25 (7)
NZL	22 (16)	79 (6)	58 (9)	49 (12)	30 (5)
IRL	28 (15)	70 (12)	68 (4)	35 (15/16)	n.a.
USA	40 (6)	91 (1)	62 (7)	46 (14)	29 (6)
AUS	36 (9)	90 (2)	61 (8)	51 (10)	31 (3/4)
CAN	39 (7)	80 (4/5)	52 (11)	48 (13)	23 (8)
N (Sc)	31 (13/14)	69 (13)	8 (17)	50 (11)	n.a.
S (Sc)	31 (13/14)	71 (10/11)	5 (18)	29 (17)	33 (2)
DK (Sc)	18 (17)	74 (9)	16 (15)	23 (18)	n.a.
NL (P)	38 (8)	80 (4/5)	14 (16)	53 (9)	44 (1)
B (R)	65 (2)	75 (8)	54 (10)	94 (2)	n.a.
F (R)	68 (1)	71 (10/11)	43 (12)	86 (3/4)	n.a.
I (R)	50 (5)	76 (7)	70 (2/3)	75 (5)	n.a.
E (R)	57 (4)	51 (17)	42 (13)	86 (3/4)	n.a.
P (R)	63 (3)	27 (18)	31 (14)	104 (1)	n.a.
D (D)	35 (10/11)	67 (15)	66 (5/6)	65 (7)	31 (3/4)
A (D)	11 (18)	55 (16)	79 (1)	70 (6)	n.a.
CH (D)	34 (12)	68 (14)	70 (2/3)	58 (8)	n.a.

*Symbols (family groups and indices):*

A	Anglosaxon group	PDI	Power Distance Index
Sc	Scandinavian	IDV	Individualism Index
P	Purée	MAS	Masculinity Index
R	Roman	UAI	Uncertainty Avoidance Index
D	German	LTO	Long Term Orientation Index



## Dutch summary

### *Ramers en rammers*

Jaarlijks worden omvangrijke bedragen uitgetrokken ten behoeve van de verbetering van de transportinfrastructuur in Nederland. Er wordt bij de allocatie van deze financiële middelen steeds sterk de nadruk op gelegd op gedegen en integrale belangenafweging. Beleidsanalisten beschikken over relevante inhoudelijke informatie en modellen om dergelijke afwegingen te maken, maar hun inzet blijkt steeds te laat komen om invloed uit te oefenen op de keuze van projecten die gefinancierd worden. De gelden zijn namelijk door bewindvoerders en de ambtelijke top onder invloed van hun politiek-bestuurlijke omgeving al toegezegd aan andere projecten. De ramers komen met hun berekeningen en voorstellen wanneer de rammers budgetten voor de komende jaren al hebben besteed aan anderen. Deze praktijk is in een parlementaire democratie verdedigbaar gezien het daar geldende primaat van de politiek. Maar omdat keer op keer in de Tweede Kamer onvrede ontstaat over het ontbreken van transparantie en een integrale afweging bij budgettering voor infrastructuurprojecten, blijft de roep om de ontwikkeling van een integraal afwegingskader onverminderd luid. In de afgelopen tijd werden diverse afwegingskaders ontwikkeld, maar geen daarvan verkreeg een officiële status of werd systematisch toegepast. Door het beperkte en ad hoc gebruik van deze methoden lijkt het steeds alsof er geen integrale afwegingskaders bestaan.

### *Onderzoeksvraag*

Beleidsanalisten en gezagsdragers werken langs elkaar heen, waardoor belangrijke informatie ten behoeve van besluitvorming onbenut blijft. Het probleem is kennelijk niet de beschikbaarheid van goede modellen en voldoende informatie, maar de wijze waarop institutionele verhoudingen het gebruik ervan reguleren.

In dit boek wordt daarom de volgende vraag onderzocht:

*Kan besluitvorming aangaande infrastructurele projecten kwalitatief worden verbeterd door beleidsanalytische methoden een effectieve plaats te geven in het beleidsproces?*

*Is er een ontwerpmethode met behulp waarvan institutionele structuren kunnen worden ontwikkeld die het politieke proces verantwoord laat verlopen?*

Het antwoord op de eerste vraag luidt bevestigend. Met behulp van *procedurele rationaliteit* kan besluitvorming zodanig worden georganiseerd dat probleemoplossing en consensusvorming tegelijkertijd optreden. Wanneer de omgeving voor beslissers al te complex is, wordt het nemen van beslissingen een rationeel zoekproces in plaats van een rationeel keuzeprocess.

Het inbrengen van procedurele rationaliteit in besluitvorming vergt herontwerp van bestaande instituties. Een ontwerpmethode hiervoor is *institutionele transplantatie*, het overnemen van goed werkende instituties uit het buitenland. Een manier om dergelijke instituties op het spoor te komen is het inventariseren van voorbeelden uit andere landen. Daarom is een internationale vergelijking van institutionele systemen voor besluitvorming over infrastructuur uitgevoerd. Gekeken is in welke mate die systemen (1) procedureel rationeel zijn en (2) bruikbaar zijn voor institutionele transplantatie.

### *Procedurele rationaliteit*

Procedurele rationaliteit is de structurering van de besluitvorming op een manier die bewuste omgang met de spanning tussen analytische rationaliteit (die van de 'ramers') en politieke rationaliteit (die van de 'rammers') mogelijk maakt. Rammers zijn in een dergelijke structuur niet langer in staat alleen via politieke compromissen, en zonder inhoudelijke onderbouwingen projecten te realiseren. Ramers wordt niet langer toegestaan kostenberekeningen te maken, wanneer deze geen aantoonbare binding hebben met de politieke manoeuvres waaraan infrastructurale projecten bijna bij voortduring blootstaan. Voor de realisatie van procedurele rationaliteit zijn twee dimensies relevant:

#### *1. Creatie van een grote variatie aan ideeën*

Om procedurele rationaliteit te realiseren moet de informatievoorziening worden gedemonopoliseerd. Checks and balances zijn gewenst om een zo groot mogelijke *variatie aan ideeën* binnen de institutionele structuur te bewerkstelligen en de altijd aanwezige bias in de probleembelichting te minimaliseren. Institutionele structuren wekken meer innovatie op naarmate ze een *grotere variatie aan ideeën genereren en onthouden*. De kans goede of rijke alternatieven te kiezen wordt daardoor gemaximaliseerd. Een grotere variatie aan ideeën wordt gecreëerd via *mutatie*: Mutatie is het zodanig kopiëren van informatie, dat er bij de transmissie van de ene naar de andere actor wijzigingen optreden. Mutatie leidt tot een hogere variatie aan ideeën, doordat er meer varianten ontstaan. Dit is de bron van innovatie. Processen van mutatie gedijen in omgevingen waar relatief veel verschillende actoren ideeën inbrengen en bestaande ideeën niet kritiekloos worden aanvaard, zogenaamde *multicentrische structuren*. *Multicentrische structuren* kennen een groot aantal checks and balances en een focus op het realiseren van de wensen van alle actoren die noodzakelijk worden geacht voor totstandbrenging van projecten. Wanneer men zaken alleen met behulp van bijdrage van velen kan realiseren, is uitwisseling van argumenten en cijfers een *conditio sine qua non* voor enige vooruitgang. *Monocentrische structuren* behandelen afwegingsprocessen in termen van daadkracht: voorgenomen projecten moeten zo snel mogelijk worden gerealiseerd.

## 2. Opslag van een grote variatie aan ideeën

Een grotere variatie aan ideeën wordt opgeslagen of bewaard via *coöperatie*. Coöperatie is het ontwikkelen van ideeën in samenwerking tussen actoren, waarbij institutionele regels ervoor zorgen dat zowel ideeën van sterke als van zwakke actoren kunnen worden geselecteerd. Meer coöperatie leidt tot opname van ideeën in het afwegingskader. Institutionele structuren die actoren tot elkaar verplichten en waarbij actoren zich slechts tegen een hoge prijs aan afspraken kunnen onttrekken. *Competitie* is het ontwikkelen van ideeën door actoren in concurrentie met elkaar, zodat alle ideeën die door sterke actoren in een laissez-faire-proces van selectie worden gepropageerd, overleven. Competitie leidt tot een scherpe screening van ideeën op onmiddellijke levensvatbaarheid. In dergelijke structuren kunnen actoren zonder al te veel pijn en moeite hun eigenbelang voorop stellen.

Om de mate van multicentrisme en coöperatie van de institutionele structuur in Nederland te kunnen bepalen is deze vergeleken met die in vijf andere landen (Zwitserland, Duitsland, Engeland, Frankrijk en de Verenigde Staten) en twee geld verdelende autoriteiten voor transportinfrastructuur (Nordrhein-Westfalen en de San Francisco Bay Area). Welke landen kunnen dienen als inspiratiebron voor transplantaten die de procedurele rationaliteit verhogen?

In de onderstaande tabel zijn de landen in getypeerd:

Tabel 1: Typen institutionele structuren en de plaats van de landen daarin

Dimensies	Sterke mutatie (multicentrisch)	Gemiddeld	Zwakke mutatie (monocentrisch)
Sterke opslag (coöperatief)	Type 1 Stabiele selectieomgeving met aanzienlijke variatie Zwitserland, Nordrhein- Westfalen	Duitsland	Type 2 Stabiele selectieomgeving met minimale variatie
Gemiddeld	Bay Area		Nederland, Frankrijk
Zwakke opslag (competitief)	Type 3 Dynamische selectieomgeving met aanzienlijke variatie VS		Type 4 Dynamische selectieomgeving met weinig variatie Engeland

De inspiratiebron voor een ontwerper die innovatieve institutionele kenmerken wil transplanteren is type 1. Dit type kent een brede keur aan interdependente actoren,

die duurzame relaties onderhouden. Door hun wederzijdse vetomachten zetten ze elkaar aan tot generering van nieuwe variatie, maar ze zijn tevens gedwongen deze variatie vervolgens te gaan delen in een algemeen breed opgezet en interactief tot stand komend afwegingskader. Realisatie van type 1 is een grote uitdaging, omdat het een combinatie van multicentrisme en coöperatie vergt: samenwerking tussen veel relatief gelijkwaardige actoren.

Engeland is een typisch voorbeeld van type 4 en de Verenigde Staten van type 3. Duitsland bevindt zich min of meer tussen de types 1 en 2 in. Zwitserland, Nordrhein-Westfalen en de San Francisco Bay Area bleken het meest te lijken op 'Type 1', al verschillen ze onderling wel. Zwitserland is vooral coöperatief en wat minder multicentrisch (de procedurele systematiek is zwaar aangezet), terwijl in de Bay Area de nadruk meer ligt op multicentrisme dan op coöperatie (samenwerkingsverbanden zijn lossier en wat minder systematisch opgebouwd). Nordrhein-Westfalen is wellicht nog de meest typische 'type 1'.

Wat 'Types 1' gemeenschappelijk hebben zijn (1) een verdeling van financiële en juridische competenties over meerdere overheidslichamen en beleidssectoren, (2) invloed van maatschappelijke groepen die het niveau van alleen formele inspraak is ontstegen en zich heeft ontwikkeld in de richting van hoorzittingen waar politici actief luisteren en suggesties oppikken, (3) afstemmingsregels tussen actoren die opportunistisch gedrag effectief afstraffen en (4) analytische afwegingskaders waar de invloed van velen in is terug te zien en die uiteindelijk door alle deelnemers worden aanvaard.

Uit de totale evaluatie komt de volgende hoofdconclusie naar voren:

*Landen die bij besluitvorming inzetten op snelheid zijn namelijk niet sneller dan andere landen en verwezenlijken ook geen rijkdom in de gemaakte afwegingen, terwijl landen die bij de besluitvorming inzetten op het boven tafel halen van een grote variatie aan alternatieven en gegevens deze rijkdom wel bereiken en niet aan snelheid inboeten.*

#### *Institutionele transplantatie*

Na het bepalen van de wenselijkheid van institutionele kenmerken uit het buitenland, komt de vraag naar de passendheid voor de Nederlandse situatie naar boven. Passendheid is geoperationaliseerd als het lenen van institutionele kenmerken uit verwante of verenigbare *landenfamilies*. Zo'n familie kent een stijl van formele regelgeving en informele omgangspraktijken, die de leden ervan op elkaar doet lijken. De familie kent vaak een herkenbare ouder in de genealogie, die zijn constitutioneel of institutioneel systeem naar elders heeft geëxporteerd (met name Frankrijk en Engeland) en waarvan de nakomelingen veel of alle kenmerken hebben overgenomen. Maar sommige leden nemen in de loop van de tijd ook kenmerken over uit andere families of ontwikkelen eigen karakteristieken en zijn daarom geen regelrechte kopie meer van de eerste ouder. Zo ontstaan hybride

structuren of mengvormen. Transplantatie van institutionele kenmerken is maatwerk. Succesvolle institutionele transplantatie vergt congruentie van ingebrachte kenmerken met de structurele en culturele grondregels van de gastland. De geadopteerde institutionele kenmerken hoeven niet per se tot dezelfde familie te behoren, maar ze mogen er niet mee in strijd zijn. De tabellen 2 en 3 geven de structurele en culturele landenfamilies. Deze zijn samengesteld op basis van inzichten uit het internationaal vergelijkende recht (tabel 2) en de culturele antropologie (tabel 3).

Tabel 2 *Landenfamilies van rechtsstelsels*

Karakteristieken van rechtsordes	<i>Checks and balances door de bevolking</i>	<i>Checks and balances door autoriteiten</i>	<i>Autoriteit/gezag</i>
<i>Recht als totaalsysteem (deductief)</i>	<i>Kommen wir zusammen</i> Zwitserland	<i>Ordnung muss sein</i> Duitsland	<i>L'état, c'est moi</i> Frankrijk, Nederland
<i>Recht in losse delen (inductief)</i>	<i>We, the people</i> Verenigde Staten		<i>Objections overruled</i> Engeland

Tabel 3 *Landenfamilies van waardenoriëntaties*

Culturele dimensies	<i>Gelijkeid</i>	<i>Hierarchie</i>
<i>Integratie</i>	<i>Gestructureerde netwerken</i> Duitstalige landen	<i>Organische ordening</i> Romaanse landen
<i>Analysering</i>	<i>Westers pluralisme</i> Angelsaksische landen, Nederland	<i>Commando-economie</i> Vroegere DDR)

Bron: Hampden-Turner & Trompenaars 1992.

*Uit de bovenstaande tabellen blijkt dat Nederland op constitutioneel niveau sterk hybride trekken vertoont. Het is staats- en civielrechtelijk in de 18e eeuw sterk door de Fransen beïnvloed (codificatie, eenheidsstaat) en in de 19e eeuw door de Duitsers via de grondwet en diverse organieke wetten. De effecten daarvan zijn nog na. Op de culturele dimensies daarentegen bevindt Nederland zich min of meer tussen de 'Duitse' gestructureerde netwerken en de Angelsaksische dorpsmarkt in.*

#### *Transplantatie naar Nederland*

Overname van kenmerken uit Frankrijk en Zwitserland creëert grote problemen om culturele respectievelijk structurele redenen. Engelse voorbeelden zijn cultureel heel goed mogelijk en structureel haalbaar, maar getuige de vorige paragraaf uit overwegingen van innovativiteit meestal niet wenselijk. *Daarmee blijven alleen over transplantaties uit de Verenigde Staten en Duitsland, in het bijzonder uit de San Francisco Bay Area en Nordrhein-Westfalen. Beide systemen bevatten instituties die de Nederlandse afwegingspraktijk procedureel rationeler zouden kunnen maken. Transplantaties hieruit*

hebben kans van slagen en zijn zelfs wenselijk, maar ook weer niet zonder risico's. De neiging zal bestaan in de Bay Area flexibel gehanteerde constructies in het Nederlandse rechtssysteem te juridificeren en daar zijn ze vaak niet geschikt voor. Het zal even moeilijk zijn de strakke *gründliche* Duitse wetgeving loyaal te volgen, maar dat is wel nodig voor gunstige resultaten. Bij ad hoc, opportunistisch en selectief gebruik van de regels valt het systeem in het water.

De wijze waarop de vermenging tot stand komt is cruciaal voor de functionaliteit en produktiviteit van institutionele systemen. Bij vervlechting en wederzijdse aanvulling van kenmerken kan meerwaarde ontstaan. Wanneer bijvoorbeeld in besluitvormingsfasen waarin problemen en oplossingsvarianten moeten worden geïnventariseerd flexibele instituties van het Angelsaksische type prevaleren en in implementatiefases waar bereikte overeenstemming moet worden geconsolideerd en in concrete daden omgezet, Rijnlandse instituties en in die logische volgorde, dan is de vermenging van brede oriëntatie en loyale uitvoering gunstig. Het beste van beide werelden wordt dan gecombineerd. Maar een structuur waarin loyaliteit en hang naar consensus tijdens inventarisatie van ideeën domineren, gevolgd door een uitvoeringsfase waar opportunisme, creativiteit en vrijblijvendheid de boventoon voeren, werpt minder vruchten af.

De analyse in dit boek wijst uit dat de vermenging van invloeden uit verschillende landenfamilies in de ruimtelijke besluitvorming in Nederland niet geheel op gewenste wijze is verlopen. Hybriditeit kan een gedeelte van het probleem vormen, maar dat hoeft niet. Het veelbejubelde sociaal-economische 'poldermodel', voor zover het een model mag heten, gedijt ook als geslaagde tussenvorm tussen Rijnlandse en Angelsaksische krachten. Institutionele mengvormen in Nederland heten echter niet zonder meer 'poldermodel'. Karakteristiek voor het sociaal-economische poldermodel is dat belangenbehartiging strak corporatistisch is georganiseerd. Dat is bij de ruimtelijke besluitvorming in Nederland zeker niet het geval.

Bij bestuurlijke hervorming worden vaak veelbelovende arrangementen uit andere landen overgenomen. Modes en trends spelen daarbij een belangrijke rol. Soms kan overneming van buitenlandse voorbeelden goed uitpakken, zelfs als geen rekening wordt gehouden met de gevolgen voor het innovatief vermogen en wettelijke en culturele consequenties niet zijn onderkend. Heel vaak ook niet. In het kielzog van het toenemende aantal internationale contacten en de globalisering van politiek en bestuur, is het waarschijnlijk dat buitenlandse institutionele, organisatorische en managementstijlen en concepten van toenemend belang zullen worden. Soms lijkt het alsof ze zich verspreiden als besmettelijke virussen die publieke en private organisaties argeloos ondergaan. Dat hoeft niet. Het is beter greep op ze te krijgen voordat ze ons in de greep krijgen. Institutionele transplantatie is een methode om deze overneming bewust te laten gebeuren.



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### About the author

Martin de Jong was born in Vlaardingen, the Netherlands, 2 May 1970. He went to secondary school at the Groen van Prinsterer Lyceum in Vlaardingen and graduated in June 1988. He then went to the Erasmus University of Rotterdam to study Public Administration and finished it in August 1993 with a specialisation in the political economy of physical and environmental planning. In 1991 he also spent half a year at the Université Catholique de Louvain (UCL) in Louvain-la-Neuve (Belgium) for an education programme. He wrote his final thesis for the *Rijksplanologische Dienst* (Dutch Department of Physical Planning) about the impact of strict environmental standards to prevent acidification on the municipal physical plans (*bestemmingsplannen*) which have more global and flexible character. He graduated under the supervision of professor Ernst ten Heuvelhof, who also became the promotor for his dissertation.

In September 1993, he was engaged by Delft University of Technology, Faculty of Technology, Policy and Management, to make an international comparison of decision-making for transport infrastructures in six countries, for which he held many interviews abroad and attended national and international conferences on infrastructure decision-making, funding and intermodal transport. As this research project was funded extensively by the *Ministerie van Verkeer en Waterstaat* (Dutch Ministry of Transport, Public Works and Water management), he spent more than two years at the Ministry and was acquainted with the practice of transport policy-making.

Currently, he is employed as an assistant professor at the same faculty where he publishes and lectures on organisational analysis, decision-making about transport infrastructures, international comparison and intercultural management.

## Endnotes

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<sup>1</sup> The oligopoly theory enables us to offer a tightly formulated example of this. This market form is typified by a few market players for whom it is theoretically impossible to make a rational calculation of price and quantity which would deliver maximum profits because the price and quantity of the competition are included as a variable in their utility function. Nonetheless they still have to make a decision. Apart from government regulations on trust formation and minimum and maximum prices, decision rules which partly fill in this price and quantity are, for instance, the purchase price of production players and a surplus. But these formal rules still do not offer businessmen enough security and need to be more precisely defined in order to avoid price wars. This explains why oligopolists who enter informal agreements to divide up the market may not change their strategy too often and certainly can never push through sudden and unagreed policy changes. The infinite number of possible equilibria that the official oligopoly theory allows without institutions is therefore structurally and culturally contained. Ultimately, within the institutional context, the actual centre of gravity is fairly clear. The phenomenon of the 'kinked demand curve', which shows how rigidity arises in prices, quantity ratios and market divisions can be easily explained by a need for certainty (Koutsoyiannis 1975). Players run enormous risks if they break the existing balance.

<sup>2</sup> Although the existence of universal design principles is generally denied, Rip, Westerheijden and Van Vught (1993) do offer a number of aids:

*Framing*: the deliberate generation of different perspectives of a problem situation can lead to fresh insight and design problems can be addressed through alternative approaches.

*Naming*: other descriptions and images can enable other sources of knowledge to be tapped and other parallels to be drawn which might open up new avenues.

*Virtual worlds*: simulations created with the aid of sketches, laboratory settings, computer models, etc. can provide an idea of the operations of virtual designs without risk of accident.

*Garning with the situation*: in other cases action and reaction with the actual situation is used precisely to uncover step by step the course which needs to be taken. It is not the testing of the theory that counts here but the realisation of the desired situation.

*Requirements analysis*: to improve the chance of acceptance and realisation, the implementation problems must be explicitly addressed by means of e.g. 'backward mapping' which maps out all the obstacles that have been overcome from the perspective of the desired, achieved situation. It also shows which players control the necessary resources and how the whole design process is organized via interaction and participation.

<sup>3</sup> This changed in May 1997 when IBM's Deep Blue proved too powerful for the Russian master who lost by 3.5 - 2.5. In addition, insiders agreed that the relationship was undermined by the fact that IBM was Kasparov's sponsor as well as the developer of the computer program. Kasparov's colleagues also felt that he was too keyed up at the time.

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<sup>4</sup> Rip *et al.* 1993 based these terms on the work of Levy-Strauss (1966). The *esprit d'ingenieur* refers to the mathematical-deductive approach of the French engineer while the *esprit de bricolage* refers to the trial-and-error approach or the employment of 'policy windows' (Kingdon 1984) whereby the designer picks up whatever takes his fancy or grasps opportunities that arise by chance.

<sup>5</sup> Arthur's observation that lock-ins eventually result in a new local equilibrium and a reversal to the original situation is impossible is borne out by oligopoly theory. The oligopolistic market comprises 'multiple equilibria' one of which is chosen in accordance with the historical development of the institutional structure and the specific choices of the players. The stability of a new equilibrium is explained by the care taken by the players to break it: every step by an player to change the price or quantity would degenerate into a new struggle, which would be generally unwelcome. This explains the existence of 'kinked demand curves'. The fewer the rivals, the better they know each other and the better their understanding of the code of the kinked curve. And the better the understanding of this code, the longer will be the lifespan of a 'collusive equilibrium'. No-one will ever know whether alternative equilibria would have been preferable or better; the process is irreversible (Fellner 1949, Sylos-Labini 1969, Shepherd 1985, Friedman 1977, 1983).

<sup>6</sup> The original version of Arthur's theory of increasing returns is as follows: when two or more rival technologies are developed in parallel they are hardly ever ready at the same time. The first one to appear is not necessarily the best but it is still the first to be distributed among the customers, the first to enter the distribution channels and the first to be marketed. There is a high chance that this will develop into the standard or will attract the resources for further development. The initial choice paves the way, as it were, for future choices which channel all or the most accessible resources to the follow-up trajectory of this first technology. Arthur refers to this process of self-reinforcement as 'increasing returns'. The tighter the grip of the developer of the first technology upon the distribution channels, the more he will reach agreements with the relevant players and the greater will be his power in the market. There comes a point when so many resources have been committed to this project that there is no way back: the first technology is 'locked-in' and can increasingly determine the conditions under which latecomers have to operate. Even though these latecomers may be able to offer more adequate, better thought-out or more inventive products they have still missed the boat in the maelstrom of path-dependent choices. Like a cuckoo, the disseminator of the first technology tries to push the others out of the nest. This approach is particularly entrenched in technologies with a 'network character' such as infrastructure for transport, telecommunications and energy.

<sup>7</sup>Hodgson (1994:40) proposes the terms 'ontogeny' and 'phylogeny' to differentiate between these two concepts. An ontogenetic analysis of evolution studies the development between various species and assumes that all examples have the same genetic blueprint. This enables us to trace the natural selection processes shaped by the environment, but not the developments within the species. A phlogenetic analysis problematises precisely the diversity in the genetic structure within a species which causes developments in the gene pool through sexual recombination. A

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blend of genetic recombinations and selection from the natural environment explains the occurrence of certain 'genetic drifts' and provides an overall picture of the evolution within the species.

<sup>8</sup> In order to arrive at a responsible methodology for determining families, ideal types need to be defined and the deviations of the remaining members must fall within a set margin.

<sup>9</sup> Hodgson (1994) is fascinated by this discussion, characterising Campbell's blind variation as Darwinian and Simon's adaptation as neo-Lamarckian, after the two giants of 19th-century biology who headed the debate on the principles underlying evolution. He writes:

'without variety there would be no evolution. Furthermore, for selection to work there must be rejection, and the process must thus involve a ceaseless error-making as well. In a Darwinian evolutionary process, error is more than a stochastic perturbation, it is the very source of evolutionary change. In contrast, in Lamarckian evolution it is the processes of perfection and learning, rather than error-making, that are given the central role' (Hodgson 1994: 94-95).

<sup>10</sup> The federalisation of the country has made such a jumble of the government system that the future of regulations, financing and organisation of infrastructure projects is uncertain. Only when the new state structure has taken on a set form will institutional facilities for infrastructure policy again receive attention. Another consequence of federalisation is that the regions of Flanders, Brussels and Wallonia are going in their own directions. The study of 'Belgium' is a large and complicated matter, because Belgium no longer 'exists'. To give an example, the roads, ports, most of the airports and waterways have been placed in the hands of the regional entities, but the international airport of Zaventem and the Belgian Rail (NMBS) have not.

<sup>11</sup> The American type of federalism gives a specific dimension to the division of roles in the levels of government. Federal, state, regional and local infrastructure are consciously separated, and the financial input of lower government is considerably greater than in many European countries. Moreover, the flexibility with which government bodies are set up and disbanded for simply functional reasons is amazing. Individual involvement is very real due to a combination of factors such as referenda, elected mayors, an open attitude of government to the outside, the ethos of the participation of individual voters in decisions and the strong legal claims submitted by citizens. Participation has not been introduced by separate procedural legislation, rather is a part of legal demands made of any government action which regards citizens. The involvement of voters in the electoral process is a sensible matter. Although this involvement is generally *ad hoc*, it is an instructive contribution to the European discussion, which has become rather rigid.

<sup>12</sup> A specific structure for the concept of supply has to do with the geographic equalisation of the cantons. Even though stronger connections between the central cities of the country (the axes of Geneva-Bern-Zurich-St. Gallen and Basel-Bern-Lugano) would be much more profitable, it has been decided to seek more or less similar gains in time for all regions of the country.

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<sup>13</sup> There are three types of referenda in Switzerland. The official referendum is automatically called by the federal, cantonal or local government for projects of substantial financial consequence. A second form of referendum comes from the people. If at least 100,000 signatures are gathered, groups of citizens or special interest groups can force a vote on the topic they introduce, which has a binding character for the country. It may also concern proposed alternative legislation than that put forth by the Federal Executive Council (cabinet) and the Federal Assembly (parliament). The initiative concerning the total prohibition of road transit freight between Italy and Germany across the Swiss Alps is an example of this. A third variant, the corrective referendum, is the request by a group of citizens for a referendum concerning legislation already approved by the federal government.

Such arrangements also exist on the cantonal and local level and have a lower number of required signatures. Theoretically, local referenda may not rescind federal plans, but people's decisions to portions of the federal package can thwart federal policy in certain ways. Moreover, referenda in Switzerland cannot lead to changes in legislation but only in the constitution. As a result, pronouncements on matters not related to the form of government, such as a traffic concept, are included in the constitution. In addition to referenda and federal ballots, the cantonal interests are included by means of what are called 'cantonal ballots'. According to the federal constitution, partial modifications of the constitution are only possible if both a majority of the voters and a majority of the cantons agree to the modification. Cantons along the traffic routes can foil a project if a majority of the cantons are opposed, even if the majority of the population is for the project. In such a case, the referendum was all for naught.

<sup>14</sup> The *Bundesverkehrswegeplan* is a strategic planning document with a comparable status to that of the French SDIT and the Dutch SVV; just as the SD it includes concrete projects and just as the SVV, it is based on an explicit detailed vision. In contrast to the SVV, the BVWP is a brief document and includes no concrete quantified objectives. In addition to a total transport concept, economic scenario studies were used as the basis for assumptions on which the SB was elaborated. Other scenarios that were used included one that centred on continuing individualisation, one that concentrated on green or ecological issues and one that focused on the mid-range (conservative growth). The mid-range scenario directed the assumptions behind SB.

<sup>15</sup> The German five-year plan resembles long range plans in the Netherlands, the UK and France. The similarity with French long-range plans is real because in France too agreements are made between central government and regions which are coupled to annual parliamentary approval. The Parliament approves the total programme for five years. The similarity with the long range estimates in the Netherlands and England is an optical illusion because their programmes are established unilaterally by the central government. There is no equality between national and local government, nor are the programmes binding; moreover, they can be modified by the authorities when required by political expediency.

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<sup>16</sup> The federal government has approved 'acceleration legislation' for the execution of its projects, which limits the influence of urban planning and environmental protection by restricting the *Linienbestimmung* to the Minister of Transport and by abbreviating the decision periods in the *Planfeststellung*. The new German states were the first to adopt a *Beschleunigungsgesetz* (Acceleration Act), since modernisation of their infrastructure demanded primary attention. Since then, a similar law has been passed for the planning procedures of West German states, the *Planvereinfachungsgesetz* (Simplified Planning Act). This legislation reduces the use of instruments to reconsider or delay federal projects in a similar way. The *Planfeststellung* can be placed under pressure by the federal government by means of special instructions. However, serious pressure is not exercised by the federal government. What is striking in this legislation is that when the federal government is of the opinion that there will be no large effects on the living environment as a result of the project, *Planfeststellung* may be replaced by *Plan genehmigung* (Plan Approval). This abbreviated procedure shortens the deliberation period considerably; environmental groups may not voice their opinion because they do not have any ownership interest in projects. Legal specialists have indicated that this may be in conflict with European regulations which insist upon the right of citizens to voice their opinion about new infrastructure that is to be built. To demonstrate that the federal government is in conflict with these higher regulations, a number of legal test cases are currently being tried. The most severe example of limitation of legal proceedings, however, is the *Investitions massnahmegesetz* (Investment Measures Act) which has shortened the planning time for a group of main transport axes to the new states to a maximum of 2 to 3 years by suspending normal legal protection. Application of this was not an unmitigated success and such legislation will no longer be adopted in the future.

<sup>17</sup> *NRC Handelsblad*: The Roman Empire still casts its shadow over Europe, 25 February 1995.

<sup>18</sup> Coordinated General Traffic Prognoses are used to estimate future traffic development, in which regional, national and international networks are coupled. For this, prognoses of demographic developments in Germany and its neighbouring countries are made leading to prognoses of passenger and freight transport and including regional differentiations. They are worked out in greater detail into individual routes in combination with the evaluation of investment plans. The transport prognoses are not used as rigid starting points but as variable proposals resulting from multiple suppositions depending on various trends within a certain range. It is a matter of policy analysis support to decision-making and is intended to show the possible effects that infrastructural interventions may have.

<sup>19</sup> PIOV and SPW mentioned in 1.1 are examples of these methods, but they are not the only ones. Although their relationship to the core planning decisions is indirect at best, they do meet a number of the objectives named in them. PIOV is appropriate for both local and interlocal public transport. It can be used both at the global level and for the prioritising of all selected projects. The method consists of a 'hard' cost-benefit component (maintenance, travel time-costs and

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travel costs, comparison of public transport users and private transport users) and a multicriteria analysis component. The final decision is based on:

1. Cost-benefit outcome
2. Effects on traffic safety
3. Environmental effects
4. Quality and comfort of public transport
5. Relationship to physical planning policy
6. Relationship to other policy objectives of the Ministry of Transport, Public Works and Water management

The objectives given in the investment plans of *Rail 21* and *Rail 21-Cargo* set the tone for the evaluation of railways. The transfer of passengers between airlines and trains plays a role in the High Speed Railway Line. A set of background project analyses can be developed for the PIOV after regular use.

<sup>20</sup> There is a (low) maximum placed on the taxes municipalities may levy so as to prevent inequality in the tax situation between various municipalities. Provinces do not levy their own taxes. The funds from municipal and provincial coffers are divided up according to a fixed formula based on the number of inhabitants, area, and other criteria. Other means that lower governments receive from the national government for various objectives such as for infrastructure from the Ministry of Transport, Public Works and Water Management belong to what are known as 'specific distributions'. The share of this in the income of lower governments is traditionally very large in the Netherlands, particularly in the realm of transport infrastructure.

<sup>21</sup> The *Raad van State* (Council of State) in the Netherlands has various functions, one of which is advising the government about draft legislation and decrees (including core planning decisions); European regulations have turned it into a legal body which rules on appeals from citizens concerning government decisions.

<sup>22</sup> The Society for the Netherlands 'Distribution Land' is an exceptionally influential lobby group, consisting of all the important companies for freight transport, such as the Dutch railways, various road transport companies, Schiphol Airport, airlines, the municipal port of Rotterdam and shipping companies. This group lobbies for a considerable increase in the expenditures on transport infrastructure to allow the Netherlands to catch up with surrounding countries, give it a leading position and make it the hub of Europe. The lobby has succeeded in getting the motto '*Nederland - distributieland*' accepted as government policy.

<sup>23</sup> 'Nature construction' as compensation for cutting through sensitive areas only takes place when a serious interest requires a connection and there are no alternatives. In such cases, there should be no net loss and the same type of nature should return, in the same region and having the same surface area. The compensation principle was pioneered with the construction of the



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A50 motorway (Eindhoven-Oss). The plan included a number of bridges, 28 km of wildlife fencing and wildlife tunnels. The Directorate-General for Public Works and Water Management also constructed a 281 hectare nature area. The total plan was estimated at 33.5 million guilders. The specific details of the compensation principle are a typical example of Dutch practical thinking; not just culture, but nature, too, can be constructed.

<sup>24</sup> Spokesmen for the Ministry of Transport report that it is impossible for an evaluation to take into account the bias of project information because to a certain extent all parties manipulate matters to their own advantage. It is difficult to get a comprehensive view of a great deal of bias. Personal preferences of the evaluators also play a role. When there are excessive deviations from expectations it is clear that supervision is needed.

<sup>25</sup> Although the Fourth Policy Report on Physical Planning expenditures represent a relatively limited amount for the Ministry of Transport, Public Works & Water Management, this Ministry is a much greater contributor (with 6.9 billion) than the Directorate-General for Housing (public housing, 1.0) and the Directorate-General for Environmental Protection (soil decontamination, 0.4) of the Ministry of Housing, Physical Planning & the Environment. The Ministry of Transport, Public Works & Water management has allowed itself to be led astray because of the notion of the Ministry of Housing, Physical Planning and the Environment of the 'compact city' is the ideal manner to realise the objectives of the Traffic & Transport Structure Plan. The future costs in the MIT consist of a fictitious cash rhythm, expectations about the flow of financial responsibilities of an average project (low in the beginning, which accelerates, crescendoes and drops again slowly to zero). The same holds true for Fourth Policy Report on Physical Planning projects in the MIT as for other projects: even if they have been mentioned, they can always be removed again. The annoying consequences of this for package financing can easily be imagined.

<sup>26</sup> In addition to infrastructure for local and regional public transport, there are the expenditures for the large projects of the Betuwe route and the High Speed Rail Line.

<sup>27</sup> Here again, increased costs were partially the result of integration measures. It was assumed in *Rail 21* that railway lines would be placed at ground level but the city of Rijswijk disagreed and insisted on a tunnel. To prevent this decision from becoming a precedent, the city had to contribute two-thirds of the costs of this urban development *tour de force*, but the costs became higher once again.

<sup>28</sup> The TU variant is named after the Technical University of Delft, where this alternative was developed. The (1st) Bos variant, which was very seriously considered in Parliament, was developed by Willem Bos in his spare time, an employee of the Ministry of Education and Sciences. At a later stage, he developed the less well known 2nd BOS variant in which he argued putting the existing line along Ypenburg to the exclusive use of high speed traffic and to use the money for new regional connections with VINEX locations (*NRC Handelsblad* 11 Oct 1996). This

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creative proposal was evaluated a few days later in the same newspaper and found wanting by the well-respected retired university professor Maurits van Witsen (*NRC Handelsblad* 16 Oct 1996).

<sup>29</sup> Hemmans is a member of the People's Party for Freedom and democracy (*VVD*) which opposes construction. He himself was only convinced of his final position shortly before publication of his report.

<sup>30</sup> In May 1998, the Foundation for Nature and the Environment published a brochure entitled 'Investment in change, a sustainable alternative to government investment'. It makes proposals for a total of 31.7 billion extra guilders of government investment through to the year 2010, attuned to sustainable development demands (*IPP* 1998).

<sup>31</sup> B/C ratios are not used for investments in railway infrastructure, rather a required return which is set at the discount percentage (8%). Alongside of the alternative of construction, an extrapolation is supposed to be made of the alternative of doing nothing, a minimum alternative and a few others. The alternative with the highest Net Present Value is the one finally chosen. The financial-economic orientation, is nonetheless, a strong point in the evaluation of railway projects.

<sup>32</sup> Districts in the countryside are generally still officially called parishes; urban districts are called boroughs.

<sup>33</sup> Branches of four departments are found in the Government Offices (Transport, Environment, Trade & Industry and Employment) whose intention is to provide greater policy integration at the regional level. They advise the Secretary of State about such things as the construction of infrastructure in their planning region.

<sup>34</sup> Earlier, route decisions were regulated by private bill. Each railway project was dealt with separately by Parliament without public consultation. This became too laborious for members of Parliament, however; the Channel Tunnel Rail link was the last railway line to be dealt with extensively in this fashion.

<sup>35</sup> Railtrack is eligible for loans from the National Loans Fund and for government subsidies for the construction of 'socially desirable infrastructure'.

<sup>36</sup> European financing of this project is striking for two reasons. First of all, this WCML is located completely on British soil and is not in any sense close to a border area. Secondly, it is not a matter of new construction, rather the improvement of existing infrastructure (*ECIS* 1996).

<sup>37</sup> Only the Jubilee Line, a 10 kilometre long connection for the London Underground, was constructed by the central government. All proposals to improve the Tube have been rejected for

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reasons of cost. Elsewhere in the country energetic, enterprising local groups with a good lobby have succeeded in developing light rail systems. The Greater Manchester Planning and Transport Executive (GMPTE) constructed the Manchester Metro Link using funds from London and private risk-bearing capital.

<sup>38</sup> The relative importance of the Government Offices varies per region. The Government Offices for the South East has not been able to shake itself loose from the central bases and cannot make pledges independently.

<sup>39</sup> Sixty-four delegates take part in the package bid negotiations in the South East. Twelve counties send three representatives apiece, and each of the twelve counties also sends a representative for the municipalities in their territory. There are also sixteen participating delegates from London.  $(12 \times 3) + (12 \times 1) + 16 = 64$ .

<sup>40</sup> The ideas in ISTEA sound relatively progressive, and for America that is certainly the case. Consequently, ISTEA ('ice tea') is interpreted by the highway and automobile lobby and by conservative states as a new abominable initiative of a bunch of busybodies which is served up as 'hot tea'. Opponents have suggested a set of proposals to completely eliminate the federal role in infrastructure policy. Monies from gasoline taxes would go directly to the states without the intervention of the DoT. This attempt failed.

<sup>41</sup> Non-attainment areas are demarcated areas where the norms of carbon monoxide and ozone are often surpassed. This is a matter of air pollution on the regional scale.

<sup>42</sup> Previously, roads that were paid for by the federal coffers were divided into four categories: interstate, primary, secondary and urban roads. All were evaluated in Washington. The money for the last three categories is now transferred to the states to be used at their discretion.

<sup>43</sup> The usability and promise of this federal initiative is generally recognised. One of the reports concerning the very congested area of Chicago suggested that the problem could be partially alleviated by putting in more ferries on Lake Michigan to take passengers to the other side. This suggestion was received on all sides as very promising.

<sup>44</sup> The MTC and the Association of Bay Area Governments (ABAG) operate on the same level and have the same board; but they have remained separate. ABAG is not a state-codified agency; it has remained a service organization for the local members (9 counties and 100 districts). The MTC is responsible for infrastructure planning, and ABAG for area planning. Since ABAG has realized that the area planning of municipalities is guided for the most part by money for infrastructure, it has become an advisor to the MTC in that area. ABAG does geographic research, consults with districts about desired use of space and with the 'congestion management agencies' on the county level about identified bottlenecks. It submits a bid to the MTC in

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consultation with the other agencies. Another advisory role ABAG played for the MTC was that of co-founder of the area planning criteria in the intermodal deliberation method. The separate functioning of the MTC and ABAG is a special construction, as we see if we compare it to Sacramento where SACOG provides both functions just as most other MPOs and RTPAs that came into being later than the MTC. Originally, the MTC was instituted only for transport issues and not for area planning ones. There has been frequent pressure to integrate the MTC and ABAG, but local councillors have defended their position and have not 'tightened up' the situation as it has evolved.

<sup>45</sup> The general federal budget in contrast is struggling with the largest budget deficit in American history, and a number of forces on Capitol Hill are trying to break open the Trust Fund to lighten the general financial need. Given that the fund is made up of separate targeted taxes, such attempts are effectively thwarted by the road sector.

<sup>46</sup> Not only the DoT but also the Environmental Protection Agency (EPA) made available a budget of \$6 billion during the first ISTEA (1991-1997) to reduce congestion and improve air quality. We also see territorial distribution formulas here again. Cities receive funds according to their pollution effect and must spend money on measures to contain the negative external effects of mobility. If they have no non-attainment areas, they may consider the money to be a regular STP contribution and use it as they wish.

<sup>47</sup> The Office of the Management Budget (OMB) is a subdepartment of the Treasury and has the White House as a customer, as the Congressional Budget Office (CBO) has the Congress.

<sup>48</sup> In cities where public passenger transport is developed in the face of market forces, as in liberal bastions such as Sacramento and San Francisco, the enterprising spirit is combined with transport objectives that more resemble European ones. Customer desires are catalogued by means of surveys and translated into service norms; cost covering levels are calculated on a network scale. On the other hand, important secondary income streams are generated by various means: participating in the development of fibreglass cables for data communication; and working together with the private sector (at the expense of the Federal Defense Fund for Transit) on high-level technologies for the tracing of vehicles, as well as the sale of this knowledge.

<sup>49</sup> The railway infrastructure outside of the cities is in the hands of private railway companies which may use the lines for the long distance transport of freight. Whether in the future there will be new public infrastructure for public transport is uncertain. There has been talk for some time about high speed trains or magnetic suspension trains between San Francisco and Los Angeles, but studies indicate that the construction of these has little chance for the moment. The only chance for high speed trains is if the congestion at airports reaches the same proportions as that

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of the roads around Los Angeles and there is no possibility of expansion. Roads and airports are heavily subsidized by Washington and Sacramento, and no fast train can compete with them.

<sup>50</sup> The progressive camp does not think public backing of private financing is a good idea. Thus, roads are constructed partly from public funds, yet no consideration is given to broader social interests. There is also the pressing question of why private financiers have so much difficulty finding funds if these are "profitable projects". Roads must be seen increasingly as commodities subject to the profit principle but there is only a half-hearted support to the application of this principle. This leads to a worst of both worlds situation.

<sup>51</sup> The regions also receive money from Washington, for example from the FTA.

<sup>52</sup> The loose structure in which regions function cannot be compared with that of public bodies in Europe. They offer the possibility of support for specific projects from opportunistic coalitions of parties. This can lead to lengthy stalemates if there is insufficient support for an MPO from those involved, as is the case in Washington. There, of the financial participants in the Washington Transport Authority, the federal government is closing off the flow of money ever further, the state of Virginia with its impoverished public transport is looking the other way, and private bus companies in the area believe they see their chance. Such relationships lead to a situation in which all sides draw up optimistic wish lists which officials approve for the sake of good form without making a serious commitment. 'Being free as a bird' assures that the feelings of distrust between parties are perpetuated because they see one another show the same type of fickle behaviour.

<sup>53</sup> The MTC cannot curb the fondness of Californian senators for road projects with its intermodal criteria, but the criteria are worthwhile for what little discretionary space there is. In the Bay Area, nothing has changed in the past years concerning the distribution of funds among modes (30% public transport, 65% highways and the rest for bike paths, foot paths and freight transport). Nonetheless, the total character of the expenditures was more intermodal, and the quality was seen by parties as higher. There were better interconnections for bike paths, highways and public transport stops.

<sup>54</sup> The Bay Area has many public transport operators who are all kept going by the argument that there are no advantages to be gained from increased scale. Customers must be satisfied with transport companies that determine themselves when coordination is desirable. In fact, coordination of services is high on the MTC agenda. The belief in 'coordination without hierarchy' is not by any means generally held. Moreover, if there is no directed coordination, other parties will move into the policy vacuum, i.e. the state and counties, who once again will divide up the budget on the basis of territorial interest, and coordination will be impossible. The MTC is very much aware of the tension between transport efficiency and territorial equity. Extensive criteria for intermodal transport systems have been actively developed to minimize

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the chance of sub-allocations of budgets based on territorial divisions. Other MPOs which have not established their own deliberation processes and have not anticipated the power of established public bodies have been rendered helpless by mandatory distribution formulas for sub-regions imposed by state laws.

<sup>55</sup> The boundary areas of districts, counties, agencies and authorities often tend to overlap haphazardly. Cities can be larger than counties, although generally the opposite is the case. It can also happen that a large population only comes under a county and not at all under a district. The City of Sacramento has 400,000 inhabitants; the other 800,000 live outside the city and not in other cities which means they only come under the county of Sacramento. This outmoded government system rendered out-of-date by suburban sprawl can lead to very high service costs, confusion about jurisdictions and lack of clarity for the citizens. That is why there are 57 Local Agency Formation Commissions (LAPCOs) in California, one for each county. These commissions make proposals for the adjustment of boundaries between local public agencies. They carry out studies on the need for reorganization, simplification and streamlining of the institutional structure and also look at the spheres of influence of cities and counties. They do not have much power, however.

<sup>56</sup> Motorways (*autoroutes*) are limited access public roads or tollways; major roads (*grandes liaisons*) are roads with direct level access.

<sup>57</sup> Below we give an idea of the criteria that are named in the deliberation models. The multi-criteria analysis in the road sector has ten indicators (INRETS/GRRT 1995):

1. Effects on the local and regional economy and on physical planning
2. Safety
3. Advantages for the traveller
4. Environment and living environment quality
5. Exceptionally adverse exit situation (for inaccessible locations)
6. Effects on other modes
7. Effects on employment
8. Energy use and costs in foreign currencies
9. Financial balance sheet for public agencies and privatized enterprise
10. Benefit/cost balance sheet that can be monetarised

These ten indicators are reviewed; in so doing it is recognized that they overlap somewhat and do not in themselves lead to unambivalent choices. The Bastard Memorandum (BCI 1995) sets forth the calculation components for the navigable waterways of France (VNF). The intention is to *monetarize* as many matters as possible:

1. Actual investment costs (construction costs and maintenance costs)

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2. Direct benefits (decreased transport costs, improved traffic safety, advantages of shared use of infrastructure, measured in terms of time and energy, lower damage through regulation of tides, use of the waterway as reservoir).
  3. Indirect benefits (resulting from port activities, effects on tourism, effects on employment, effects on the environment, monetary effects on other traffic modes).

A decision is made based on the relationship between costs, benefits and political considerations.

<sup>58</sup> SNCF is the national railway company of France, VNF is the waterways board. The SEMs (*Sociétés d'Economie Mixte*) are private organizations that arrange construction and maintenance. They provide financial means from their own capital or from equalisation between various projects. But they also take out loans from the capital market or the national motorways fund. This commission determines the amount of loans and the amount of tolls. The fund is filled from the national budget, regional contributions for projects, and loans from banks and investors (Sweets 1993: 16). The construction is less private than it might appear in other words. Shares of State companies in France are also held by the State regional governments and other State companies. SEMs are able to construct roads more quickly than the State because they provide continuity to the flow of expenditures for commercial reasons. State budgets are subject to considerations of political expediency, which may result in projects being interrupted for years.

<sup>59</sup> The fact that the monies in the FITTVN (*Fonds d'Investissements des Transports Terrestres et des Voies Navigables*) are kept outside of the general budget provides the only chance of survival for smaller waterways projects, such as the Seine-Nord Channel in Picardy. This de-budgeting makes it possible for users of the waterways to pay for the improvement of the waterways network themselves, a chance that would be minimum from the FII. FF 276 million were reserved in the FITTVN for waterways in 1996; since the amount estimated to be needed for the canal is FF 11 to 15 billion, this sum does not provide very much hope. The inland waterways captains cough up about FF 950 million for this fund a year, which means that they contribute, on balance, to investments for their competitors the railways. The above-mentioned project is full of promise; many northern French and Belgian captains would use the waterways and relieve the pressure on the roads (the estimated profitability is 9%). It is a bitter pill that this project has been pushed aside by the Rhine-Rhone canal which is promoted by an influential lobbyist (former prime minister Raymond Barre).

<sup>60</sup> This report calculates all immaterial matters and has uprated the value of a human life from FF 1.5 to FF 3 million. This figure can be used politically to move investments in the direction of safety. However, the model forgot the depreciation of privately owned automobiles. If that had been taken into account, the return on roads would be reduced by one percent, according to an informant from the Department of Roads. The authors themselves remark that a human life in Sweden is valued much higher than a human life in France. In an interview with the *Bulletin des*

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*Transports de la Logistique* (23 January 1995), Boiteux gives an example of what the use of figures for basic conceptions can show in current calculations for return on infrastructure projects; the 'marginal dead' on public transport as a result of an accident is counted ten times higher than one on the road because people are afraid of mass accidents. In reality, roads are much more unsafe than railways. How much safer would automobile traffic be if the norms for the railways would be applied to them? Such insight indicates very clearly the fragility of monetarization. Others reject the ten categories in the multi-criteria analysis of the Department of Roads because it makes all of these criteria equally important visually and puts the components that are not monetarized at a disadvantage. Choices are ultimately made only on the basis of hard evidence. Thus, it would be better to turn soft considerations into hard ones as well.

<sup>61</sup> According to recent data, the planned expensive new connections including the TGV-Est have been postponed indefinitely. France has enough difficulty at the moment meeting the financial norms required for entry into the European Monetary Union and consequently is setting aside less money for infrastructure at the moment. Fast *pendolino* trains on existing tracks may provide sufficient improvement.

<sup>62</sup> In a letter to Premier Alain Juppé in June 1995, he maintains that 'technostructures' use inadmissible methods to place at risk political decisions that have already been taken, with which he refers to the Rhine-Rhone canal. However, it is more likely that 'technostructures' in France, which Barre himself belongs to, can normally get their way. The fact that they do not succeed in breaking down the scientific and social resistance to this exceptional case must be seen as an indication of the deplorable quality of the project.

<sup>63</sup> Dupuy (1998) describes how the system functions on the basis of extreme lack of participation and of severe restriction of access. He sees it as a scrupulous filtering-out process.

<sup>64</sup> This approach of expertise and second opinions has (1995) three functions according to Fourniau:

1. *Arbitration*: a value judgement is made about the tenability of argument and presuppositions of the railway company.
2. *Criteria*: the members of the board establish criteria from the point of view of various sciences/disciplines that are applicable to the project.
3. *Recognition of values*: the political pole sets the criteria in sequence according to its political priorities/values and attributes figures/weights to them.

<sup>65</sup> The only two cases where the mode does not give a clue about the score in an institutional dimension are the integralism and corporatism indices for the Bay Area (HIGH 4, MID 2 and LOW 4 and HIGH 4, MID 4 and LOW 2 respectively). As the Bay Area has an American structure with strong European (cooperative) influences, this comes as no surprise. Formally



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speaking, the outcome should be called 'MIX' instead of 'MID'. To give 'the case SFBA' still some meaning and to discern it from the USA as a whole, it will be treated as 'MID' in the next chapters.

<sup>66</sup> See footnote before.

<sup>67</sup> This appears for instance in the large share of specific grants and financing of local and regional big money projects in The Netherlands and England, while elsewhere the tax-base and the generic financial arrangements dominate (Wilmer 1993). In his draft PhD thesis, Wilmer (non-published) correctly points out that in all metropolitan areas he investigated (Brussels, Cologne, Lille and Amsterdam) regional associations have been created that independently organise local and regional transport, with the exception of Amsterdam. His findings confirm the fact that neither The Netherlands nor England succeed in establishing strong regional authorities. Possibly this is a consequence of the unitarian nature of both countries.

<sup>68</sup> Closer inspection of the country scores on various characteristics within a dimension also point out that the scores of The Netherlands and France are least stable. Both countries score MID on HOL and COR. There are, however, a large number of characteristics where they score both HIGH and LOW; MID is scored in about half the cases. This points to institutional changeability: some characteristics are highly formal, others informal. The Netherlands and France both have a large gap between formal structure and informal practice.

<sup>69</sup> Explaining infrastructural revenue by institutional structures is only one of the options. One could also explore the divergent geography, welfare, preferred modes of transport or the level of infrastructural expenditure when trying to find the reasons for the differences between the countries. But more of these studies have been carried out in the past than studies relating to institutional structures. Comparisons between institutions also offer more opportunities for improving the decision-making processes.

<sup>70</sup> TNO-INRO (1991) concluded about the Dutch public transport situation that a rather large number of individual studies are conducted in order to get insight in aspects such as comfort, changes in the amount of passenger kilometres, travel time, travel time evaluation, costs of tickets, investment costs, exploitation costs, noise, use of space, environmental aspects, and safety. Since then an integral policy evaluation for collective transport has developed, but this is not (yet) generally accepted or applied.

<sup>71</sup> The others are the socialist, the Far-East, the Islamic and the Hindu law families. David and Jauffret-Spinosi place all Civil law states (Germanic, Roman and Nordic) into one category.

<sup>72</sup> Often Scandinavian countries are considered as a separate group, which bears many similarities with and has been influenced by Continental families, but did not continue so much in the direction

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of standardisation, codification and power distribution. The legal systems of Denmark, Sweden, Norway and Finland are generally considered pragmatic.

<sup>73</sup> Hampden-Turner & Trompenaars also present a ranking of countries with respect to the long-term orientation of enterprises. This is based on data collected by the European Management Forum (1989). Germany is most future oriented, followed by Switzerland, the Netherlands, France, the USA and England.

<sup>74</sup> There are no data on the LTO-scale for Roman countries. In light of the characteristics for LTO, it appears that Roman countries are more focused on the short term. The German countries, The Netherlands and Scandinavia are focused on the long term. Hampden-Turner & Trompenaars also present data that show that more than anywhere else, Dutch managers believe that policymaking has more to do with goal achievement than with using power. From my own research findings it appears, for instance, that the interest for long-term planning is largest in the Netherlands, Germany and Switzerland.

<sup>75</sup> Of the six countries investigated The Netherlands may represent the only mix, but outside this set there are some others like Finland and Israel. Contrary to what Castles *et al.* (1993) suggest, Belgium is not a hybrid form, but a full member of the Roman family. Thus, actually, there is no Low Countries 'group'. Whether Flanders will become part of that group remains to be seen.

<sup>76</sup> The nicest example of a synchronised conception of time we can see in the transport concept *Bahn 2000* in Switzerland, where the adage 'as quickly as necessary' was translated into very detailed time connections between the various connections at each transfer point. Although Germany and France also adopted 'synchronised elements' in their transport schedules, the fact that Switzerland is missing makes it difficult to present conclusions about the relations between this cultural characteristic and infrastructure policy.

<sup>77</sup> The 'history-rational order' characteristic could not be placed in this figure.

<sup>78</sup> From a thorough analysis of Hofstede's figures, it appears that the Netherlands occupies a middle position with respect to insecurity avoidance, so that it really fits in between the well-oiled machine and the village market.

<sup>79</sup> The upper right corners differ between Hofstede and Hampden-Turner & Trompenaars; they have partially investigated different countries. This is however of minor importance for the clustering of German, Anglo-Saxon and Roman countries.

<sup>80</sup> Exact data on the railways is not available, but congestion maps (ECIS 1996) and punctuality statistics (V&W 1996) indicate that the infrastructural capacity is insufficient in the UK and somewhat tight in the Netherlands and Switzerland. This is attributable in the first case to low

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investment and in the second to the philosophy that the infrastructural capacity must exactly match the required services. This makes the network highly susceptible to bottlenecks and tailbacks. In Germany traffic problems are concentrated around Berlin, the Ruhr area and Frankfurt. France and Belgium hardly ever suffer from capacity-related problems. Even though we are dealing here with a different mode, the pattern is nonetheless identical.

<sup>81</sup>The levels LOW, MEDIUM and HIGH are determined as follows:

LOW: 0+1 hour > 95%

MEDIUM: 90% < 0+1 uur < 95%

HIGH: 0+1 hour < 90%

<sup>82</sup> Recent studies (*ECIS* 1996 and *KUB&TNO-INRO* 1997) show that Flanders and Wallonia have charted their own course since federalisation. In Flanders attempts are currently underway to structure appraisal using a Flemish Infrastructural Plan and Fund. Pronouncements on how this will affect decision-making and the question of whether Flanders 'will start to resemble the Netherlands' are not (yet) justified.

<sup>83</sup> Their willingness to speak frankly and openly about their government failures is clearly an aspect of their 'belgitude'. Overwrought and pedantic Dutchmen could learn a lot from Belgians in this respect.

<sup>84</sup> We could also have formulated expectations regarding corporatism in Austria, unitarism in Ireland and New Zealand, federalism in Canada and Australia and possible similarities between Spain, Portugal and the countries of South America.

<sup>85</sup> The absence of data on Scandinavia is a considerable handicap here. The affinity at consitutional, and more importantly, institutional level would probably have been very high and would have ensured worthwhile transplants. But international comparisons involve practical complications.

<sup>86</sup> With 3 of these 4 countries the interests of subnational governments are dealt with in a House of Representatives (Bundesrat, Senate) and the fourth case operates through intensive informal communication that in terms of intensity and intertwinement is almost the same as the other three.

