

Critical transcalarity

TU Delft Department of Architecture

AY 2023/24 January 7, 2024

MSc4 Borders & Territories graduation studio

Transient Liquidities along the New Silk Road

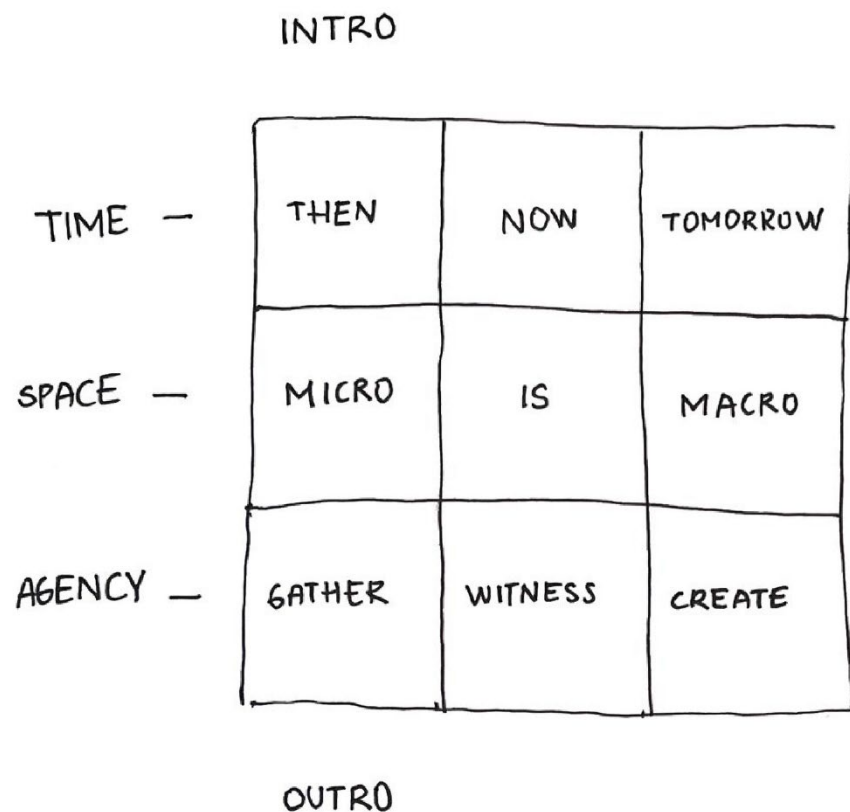
Theory paper by Augusta Fiseryte

Oscar Rommens

Negar Sanaan Bensi

Marc Schoonderbeek

Stefano Milani



¹
Figure 1 Transcalarity grid

¹ Drawn by the author

Contents

Intro	3
Time	
Then	4
Now	5
Tomorrow	6
Space	
Micro	7
Is	8
Macro	9
Agency	
Gather	10
Witness	11
Create	12
Outro	13
Bibliography	14

Intro

The paper explores a multiscalar methodology to investigate the material and the aftermath of the material in a series and scales of events. This method employs the matters of time, space, and agency and places them into a grid of the most suitable order. The grid becomes a reference for how to layout analysis to make the method more explicit and straightforward. The grid becomes an anchor point for the start and the finish.

Time, space, and agency are three fundamentals that are considered in the analysis and are sliced into three other main phases. Each phase is responsible for a certain cluster of scales.

Time is divided into “Then”- as it unfolds the history of the event, “Now” is a current state/ norm, or it informs about the past, and “Tomorrow” is the intention, planning for the upcoming/new.

Space is divided into “Micro”- as the study of the material through a microscopic lens, “Meso” is seen as a naturalistic exploration without specialized equipment or tools, and “Macro” is explored as a collection of data through a satellite lens and national or international database of the landscape.

Agency measurement explores how human agency intervenes through matters of time and space by “Collecting” data, “Witnessing” data, and creating new proposed data.

The paper aims to discuss each of the cases of the multiscalar analysis and will explore the morphological (dis)order of tree debris in the Gatun Lake area in Panama. As scientist Ashley Carse discusses the history of the Panama Canal Zone, she highlights the overseen endeavors hidden in the Gatun Lake. Buried layers of life, civilizations, and nature that flourished in the area before remained only a memory that is sometimes difficult to believe in. "Ironically, many newcomers—even natural scientists—were prone to perceive the Zone's engineered landscapes as pristine nature"².

The multi-scalar approach will include a set of situations that in some cases may overlap and in some not. It may actualize a certain consequence of events under the scope of identical or distinct governing bodies. It may also criticize the hierarchical relationship between the matters of time, space, and agency.

² Carse, A., Keiner, C., Henson, P.M., Carse, A., Lasso, M., Sutter, P.S., Raby, M., Scott, B. and Keiner, C. (2016). Panama Canal Forum: From the Conquest of Nature to the Construction of New Ecologies. *Environmental History*, 21(2), pp.231–239. doi:<https://doi.org/10.1093/envhis/emv165>.

Time

Then

Low Gatun water level in the past year unfolded tree trunk debris that emerged from the water's surface, informing about the past forest existence. Waterlogged timber becomes the witness object of the past, which is absorbed and preserved in the water body that was flooded over a hundred years ago. In this case, as Carse revisits Panama Canal's environmental history at Gatun Lake, I would be keen to revisit the matters of time and scale of events that affected the pressure and change of waterlogged timber that is sunk in the lake, as well as the surrounding environment that is inevitably entangled in the ecosystem of Panama Canal and the surrounding nature. The view of the Lake creates a sense of sublime and simultaneously undresses the fragility of the past that existed before the current body of water. The emergence of a gigantic creature of mankind, the Panama Canal, changed the morphology of the place, overlooking the outskirts. "Why did Panama's transit zone, a region with a long human history, appear more natural to many visitors and recent settlers during and after canal construction?"³

The history of the Panama Canal Zone is suggested to be divided into two measures of time: Geology - as a formation of the soil; Archeology - a study of human activity based on material remains. If we continue discussing the Anthropocene as a driving factor, we can sense a little comfort with a relative sense of control in our hands. However, Gaia's hypothesis would not represent humanity's favor and would suggest Earth's independence from human beings as a perfectly realistic case.⁴

History and memory become powerful tools of communication and propaganda to learn and assess past practices as right or wrong. Gatun Lake in this case becomes a challenging and ambiguous landscape of nature. "As the lake rose from fifteen feet above the sea level in 1911 to its full operating level of eighty-five feet in 1914, two processes - one environmental and one governmental - conspired to conceal markers of past human activity in Chagres River valley, making the region appear more natural than it had only a few years before."⁵

³ Carse, A., Keiner, C., Henson, P.M., Carse, A., Lasso, M., Sutter, P.S., Raby, M., Scott, B. and Keiner, C. (2016). Panama Canal Forum: From the Conquest of Nature to the Construction of New Ecologies. *Environmental History*, 21(2), pp.231–239. doi:<https://doi.org/10.1093/envhis/emv165>

⁴ Dillard-Wright, D.B. (2019). Gaia Theory and the Anthropocene: Radical Contingency in the Posthuman Future. *Sanglap: Journal of Literary and Cultural Inquiry*, 05(02), pp.19–29. doi:<https://doi.org/10.35684/jlci.2019.5203>.

⁵ Carse, A

Now

The matter of now becomes significant to a current generation of human beings that take a lead and agency of the presence.

We can understand presence as the existence of the whole universe, which can be called quantum physics. We can also talk about the present time as the everyday processes that occur in Gatun Lake, counting how many ships will pass through and whether will it match the everyday schedule. Measuring the present economic benefits that the Lake and the Canal bring to the country and the rest of the stakeholders. Panama Canal can be assessed to what extent and matter of time it was planned to serve the trades. Only looking at the existence of the Canal, we can see major changes in the size of the ships, which urged the development of new and greater locks to the Oceans.⁶

Now can also be understood as a more static and wide span. Such as the lake as a whole, which holds weight onto the land. Soil, gravel, timber, fish, and leaves become a whole assemblage of materialities that intertwine and coexist. Now is also broadened when it talks about the atmosphere, climate, and weather. Deborah R. Coen in “Climate in Motion” argues that understanding and measuring the past in different scales helps us learn about the present. It specifically discusses our understanding of the climate crisis and the diverse array of potential responses that we are capable of addressing.⁷ Climatology and Geography bring us to the present conditions that we are capable of exploring in the current given time. Scientists become witnesses of what they are capable of telling about the current state of events, entanglements, and behaviors.

⁶ Sabonge, R. (2014). The Panama Canal expansion: A driver of change for global trade flows. Documentos de Proyectos.

⁷ Coen, D.R. (2018). Climate in Motion. University of Chicago Press.

Tomorrow

When we start to discuss the time and the scale of it in the future, we can, again, take a different lens to see how much we are capable of changing during our lifespan and what impact we can create in the longer term, over a few generations. Donna Haraway, for instance, suggests shifting our mindsets a little further to think beyond humanity and understand the earth and the universe as a whole and to at least attempt to visualize a reality without a human being. The idea that that humanity might not be treated as a long-existing phenomenon but it might end at some point and the ecosystem will be capable of continuing.⁸

Timothy Morthnon, in this case, signifies the idea, that we, humans are “in a whole new geological period, one marked by humans becoming a geophysical force on a planetary scale.”⁹ He also argues the definition of time that connects presence and the future and that massive extinctions are “spread out over time so that while they are happening it would be very hard to discern them.”¹⁰ Therefore, the understanding of the future in ecological terms becomes more vague and challenging to grasp.

Having these aspects of time in mind, human-made structures that have been created in the world become slightly more unambiguous, yet, possibly misleading, in a way. Coming back to Carse’s point of view, “Gatun Lake waterscape was neither a simple replica of engineers’ blueprints nor an elevated version of the flooded bottomlands. It was a new ecology that appeared old - at least to some.”¹¹

In the Anthropocene age, we can explore constant new attempts to regenerate the space. Within the current capabilities of infrastructure, there are new attempts to reuse currently buried timber in the lake. Waterlogged timber from the lake, through history, grew value and strength. Thanks to the historic cycle of flood, rotting, and conservation of water, the material becomes attractive and necessary for a new life and new use. The excavation of the Waterlogged timber poses a question about our future behavior. How do we treat already man-modified landscapes? Do we accept it as a new natural norm and give space and freedom for current biodiversity to live and nurture, or do we allow constant changes in erosion and adopt new environments over and over again?

⁸ Lecture at Nieuwe Instituut, An Evening With: Donna Haraway, Bruno Clarke and Rosi Braidotti

⁹ Morton, T. (2021). *All art is ecological*. London: Penguin Books.

¹⁰ Ibid.

¹¹ Carse, A., Keiner, C., Henson, P.M., Carse, A., Lasso, M., Sutter, P.S., Raby, M., Scott, B. and Keiner, C. (2016). Panama Canal Forum: From the Conquest of Nature to the Construction of New Ecologies. *Environmental History*, 21(2), pp.231–239. doi:<https://doi.org/10.1093/envhis/emv165>

Space

Micro

Microscopic scale becomes significantly important to particular sciences that help to learn about our nature and biology. It can help us to see what objects are made of, we can learn to treat ourselves and our environment better just by paying more attention to details that are not visible to us in the first attempt. As we can state Microworld is an inverted world, and we can explore to what extent human behavior disturbs the arrangement and living of fabrics, molecules, and cells.

Dead tree trunks, soil, and outskirts - a cluster of objects, holding weight and perpetual pressure that comes from a dammed Chagres River and regular transit of cargoships through the canal. Weight can also be explored in the waterlogged timber meaning that all the pore spaces, including capillaries and micro capillaries, are filled with water¹². Saying this, we can see that the pressure that originates from the Panama Canal construction can be seen and explored in Microscale.

The matter of Decay. Cell wall polymers, primarily hemicellulose, are food for fungi. The decomposition of cell wall content ultimately leads to the decay of wood. This is the main cause for concern in the biological decomposition of wood. The breakdown of the cellular walls reduces the structural integrity of the material. Keeping the material dry, typically within a building assembly, can mitigate the breakdown process.¹³

Density is the ratio of a material's mass to its unit volume, In wood, a hygroscopic material, both the mass and volume are moisture-dependent. For standardization purposes, the industry measures the density at different moisture contents but oven-dry wood, that is wood with all moisture removed. On a microscopic level, the anatomy, differences in cell size, and cell wall thickness, across species provide for a significant range of possible densities.¹⁴

¹² Broda, M. and Hill, C.A.S. (2021). Conservation of Waterlogged Wood—Past, Present and Future Perspectives. *Forests*, 12(9), p.1193. doi:<https://doi.org/10.3390/f12091193>.

¹³ Ibáñez, D., Jane Elizabeth Hutton and Moe, K. (2019). *Wood urbanism : from the molecular to the territorial*. New York ; Barcelona: Actar Publishers.

¹⁴ www.macguffinmagazine.com. (n.d.). MacGuffin | The Life of Things. [online] Available at: <https://www.macguffinmagazine.com> [Accessed 3 Jan. 2024].

Is

One of the ways to understand such scale and its qualities could be discussed through our intersection of everyday life, ethics, and our relationship with the world, as Jane Bennett suggests in her book “The Enchantment of Modern Life”¹⁵. She would argue that the material world would maintain a sense of agency and vitality, which would lead us to further observations of the atmosphere and our experience in it.

This kind of methodology of observation would involve using the unaided human senses such as vision, touch, smell, and sound - to perceive and understand objects, and environments in their ‘natural’ state and scale. It's the kind of observation we engage in normally without specialized equipment or tools.

Such an approach would rather be used in psychology, biology, ecology, anthropology, environmental science, and art. Irene Kopelman, an artist known for her exploration of natural phenomena and scientific research through art, often delves into the idea of presenting objects without a defined context or reference point. Her work frequently involves drawing and representing elements from nature without specific scales or contextual clues, emphasizing the importance of the observer's point of reference in understanding the object or phenomenon. “Drawing inevitably prompts one to think about its different functions and forms: drawing as a medium, as a representation, as means of observation; as a way of relating landscape, to things, to knowledge.”¹⁶

While sketching tree objects from the Barro Colorado Island, located in Lake Gatun, Kopelman highlights the powerfulness of drawing as a method to research and analyze the object and the state of objectification. Such methodologies may vary between different specialists simply because they might have different points of interest that they aim to explore in the same piece of object. “Drawing can be a means to train the eye, to see - but not objectively per se. That’s what distinguishes the artist from a scientific draftsman.”¹⁷

¹⁵ Bennett, J. (2001). *The Enchantment of Modern Life Attachments, Crossings, and Ethics*. Princeton University Press.

¹⁶ Kopelman, I. (2015). *Entanglement*. Amsterdam] Roma Publications.

¹⁷ Ibid.

Macro

In Macro, we can come back to the expansive scale, beyond the capacity of the human body. One of the most comprehensible ones is the satellite data that helps us to zoom out the view and see where we all live - Earth. It can sometimes help us to zoom out to witness processes that are difficult to grasp in our everyday lives.

Satellite view. Kurgan explores how advancements in technology, particularly in mapping tools and geographical information systems (GIS), have transformed our ability to visualize and comprehend spatial data. She examines how these technologies influence our perception of space, place, and boundaries.¹⁸

Geopolitics - Surveillance and Power: 'Close Up at a Distance' book addresses the implications of mapping technologies on surveillance and power dynamics. Kurgan helps to critically examine how mapping tools are used by governments, corporations, and institutions for purposes of control, governance, and even manipulation of public perception. Therefore, Kurgan raises questions about the subjectivity of databases and the relationship between representation and reality in mapping.¹⁹ She highlights how maps are not merely neutral representations but are often influenced by the biases, interests, and intentions of those who create them, shaping our understanding of the world accordingly. She explores issues of privacy, consent, and the responsible use of mapping technologies, particularly in contexts where data collection intersects with sensitive social or political issues.²⁰

This is where it becomes slightly complicated. We must acknowledge our capabilities to access certain data and be able to treat it and use it in a way that does not create a subjective view. Transcendence, in this case, can help us to attempt to objectify certain processes or compare with reality checks, to see how close or distant certain databases can be.

¹⁸ Kurgan, L. (2013). Close Up at a Distance. MIT Press.

¹⁹ Ibid.

²⁰ Ibid.

Agency

Gather

One of the aims of multi-scalar methodology is to find persistent care and scrutiny in gathering things. This implies the careful gathering of the past or sincere experiencing of the present but with the notion of scale, which defines how deep it delves into the contextual matter. In Astrida Neimanis' "Bodies of Water: Posthuman Feminist Phenomenology,"²¹ sensitivity is a crucial aspect linked to her exploration of the entanglements between bodies, water, and the environment through a posthuman feminist lens. Neimanis reiterates the sensitivity by emphasizing the interconnectedness and interdependence between human and non-human entities. Therefore, the overlay of the past and present, micro, meso, and macro can help us create a more considerable and critical gathering of details that later informs and leads us to our present and future agency.

²¹ Astrida Neimanis (2017). Bodies of water. Posthuman feminist phenomenology. London: Bloomsbury Academic.

Witness

Interconnectedness - the significance lies in comprehending the profound impact of seemingly minor actions. For instance, when we analyze environmental changes at a microscopic scale, such as the molecular alterations caused by human-made materials, it offers insights into how these alterations cascade into larger ecological effects. Understanding these molecular changes can provide clues about future environmental trajectories, informing us about potential risks and implications of ecology.

Witnessing change is something we can explore during our existence, seasons, day and night, vegetation, weather, humidity, etc. We can also explore things that are static and things that are moving. Some conditions can inform us about past events, such as traces, artifacts, or fossils.

We can also trace it and give value to things. All the materials become ever-changing variables and their values change over time because of certain dynamics in society, limitedness, or demand, new energy sources, or functions. These aspects later also impose on the waterlogged wood that I keep bringing back as a case study. Who benefits from what, Panama Canal authorities, Panama as a country, foreign mining companies, customers, or buyers?

Create

Overlaying scales and matters of time we can learn to be more critical, and evaluate our existing value or nonvalue that we contribute to the space.

What Carse contributes with her article to this Forum is to create an “effort to rethink the environmental history of the Panama Canal by redirecting attention from the element at the center of most construction narratives - excavated earth - to manage water and growing forests in the Canal Zone.”²²

In some cases, we can find our own as human beings position in the whole scenery and we can define to what extent we aim to influence smaller or bigger worlds. We can find ourselves in the constant multiplicity and ever-changing matter of events that we dear to shift, change, and conquer. Or we can choose and train our minds to explore the world and figure out our nature in it and what boundaries we create in that. A Bruno Latour suggests that we should reconsider our agency toward Earth as a whole, not global, or not national. But one of the things we might understand is our limitations but also our capability of what we can and should change and how we mediate in the multiscalar of the events.²³

Waterlogged timber in this case becomes a material for our use, for space, structure, beauty, and trade. It becomes an example of a long-processed substance that is taken by humans and modified into new forms of life. Maybe long-lasting, high-quality furniture in this case is all we need.²⁴

²² Carse, A., Keiner, C., Henson, P.M., Carse, A., Lasso, M., Sutter, P.S., Raby, M., Scott, B. and Keiner, C. (2016). Panama Canal Forum: From the Conquest of Nature to the Construction of New Ecologies. *Environmental History*, 21(2), pp.231–239.

²³ Latour, B. (2018). *Down to earth: politics in the new climatic regime*. Translated by C. Porter. Cambridge, UK ; Medford, Ma: Polity Press.

²⁴ Eco Timber Panama. (n.d.). PRODUCTS. [online] Available at: <https://en.ecotimberpa.com/productos> [Accessed 8 Jan. 2024].

Outro

To what extent do our built environment actions affect the environment and why do we have to care about it? Microscopical scale can tell us how materiality is being affected in a molecular sense and molecular sense can also explain immense future changes.

Multiscalar continuity. The concept of multiscalar continuity delves into the interconnectedness of various scales within our environment, exploring how changes at different levels - from micro to macro - interact and influence one another. Charles and Ray Eames famously identified ten scales of design, ranging from the cosmic to the atomic, highlighting the significance of considering multiple scales in design and planning.²⁵

In this introspective journey, the outro invites us to explore the extent of the built environment's impact and the necessity of mindfulness while delving into it. From the microscopic to the cosmic, the thread of multiscalar continuity underscores the intricate dance of scales, urging us to harmonize our actions with the diverse dimensions of our world. As we navigate this paradigm, the call to reconsider our agency toward Earth echoes, urging a recalibration of our boundaries and capacities in the mosaic of events.

A multiscalar methodology grid rather helps to facilitate the aspects that are commonly discussed in a more organized compass of directions. It acknowledges aspects of Time, Space, and Agency by separating them into boxes, though, on the other hand, it shows its inevitable interconnectedness. One could not exist without another. Nevertheless, it can help to compare and locate things in the scale, and finally, mediate our agency and responsibility in it.

²⁵ Koenig, G. and GösselP. (2005). Charles & Ray Eames : 1907-1978, 1912-1988. Köln ; London: Taschen.

Bibliography

1. Carse, A., Keiner, C., Henson, P.M., Carse, A., Lasso, M., Sutter, P.S., Raby, M., Scott, B. and Keiner, C. (2016). Panama Canal Forum: From the Conquest of Nature to the Construction of New Ecologies. *Environmental History*, 21(2), pp.231–239. doi:<https://doi.org/10.1093/envhis/emv165>.
2. Dillard-Wright, D.B. (2019). Gaia Theory and the Anthropocene: Radical Contingency in the Posthuman Future. *Sanglap: Journal of Literary and Cultural Inquiry*, 05(02), pp.19–29. doi:<https://doi.org/10.35684/jlci.2019.5203>.
3. Sabonge, R. (2014). The Panama Canal expansion: A driver of change for global trade flows. *Documentos de Proyectos*.
4. Coen, D.R. (2018). *Climate in Motion*. University of Chicago Press.
5. Lecture at Nieuwe Instituut, An Evening With: Donna Haraway, Bruno Clarke and Rosi Braidotti
6. Morton, T. (2021). *All art is ecological*. London: Penguin Books.
7. Broda, M. and Hill, C.A.S. (2021). Conservation of Waterlogged Wood—Past, Present and Future Perspectives. *Forests*, 12(9), p.1193. doi:<https://doi.org/10.3390/f12091193>.
8. Ibáñez, D., Jane Elizabeth Hutton and Moe, K. (2019). *Wood urbanism : from the molecular to the territorial*. New York ; Barcelona: Actar Publishers.
9. www.macguffinmagazine.com. (n.d.). MacGuffin | The Life of Things. [online] Available at: <https://www.macguffinmagazine.com> [Accessed 3 Jan. 2024].
10. Bennett, J. (2001). *The Enchantment of Modern Life Attachments, Crossings, and Ethics*. Princeton University Press.
11. Kopelman, I. (2015). *Entanglement*. Amsterdam] Roma Publications.
12. Kurgan, L. (2013). *Close Up at a Distance*. MIT Press.
13. Astrida Neimanis (2017). *Bodies of water. Posthuman feminist phenomenology*. London: Bloomsbury Academic.
14. Latour, B. (2018). *Down to earth: politics in the new climatic regime*. Translated by C. Porter. Cambridge, Uk ; Medford, Ma: Polity Press.
15. Eco Timber Panama. (n.d.). PRODUCTS. [online] Available at: <https://en.ecotimberpa.com/productos> [Accessed 3 Jan. 2024].
16. Morton, T. (2016). *Dark ecology : for a logic of future coexistence*. New York: Columbia University Press.
17. Latour, B. (2020). *Critical Zones*. Mit Press.
18. Demos, T.J. (2020). *RADICAL FUTURISMS : ecologies of collapse*.
19. Cesare Leonardi, Franca Stagi and Danford, N. (2019). *The architecture of trees*. Hudson, New York: Princeton Architectural Press.
20. Goethe, V. and Miller, G.L. (2009). *The metamorphosis of plants*. Cambridge, Mass.: Mit Press.
21. Tambassi, T. (2021). *The Philosophy of Geo-Ontologies*. Springer Nature.