

**HOW DID M.C. ESCHER COMPOSE IMPOSSIBLE REALITIES
BY MEANS OF REALISTIC COMPONENTS?
FOLLOWING THE PROCESS BEHIND THE CREATION OF MINDSCAPES**

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ABSTRACT

Tracing M. C. Escher's creations chronologically, one can see how the observational sketches of Italian cities and landscapes that he made in his youth became the basis and reference for most of the works he created later in life. Escher used those images he memorised and sketched out to create his so-called *mindscapes*, which are the dreamlike and unreal realities. In my thesis I would like to address how these *mindscapes* are shaped through the use of real elements. I find very interesting the relationship between tangible components, such as buildings or cities and the compositions they create, which suddenly lose their plausibility and present something that has no right to exist. Throughout this paper I will focus on what has most fascinated me in the artist's œuvre - how did he graphically synthesise his observations and then transposed them in such a way as to create something impossible and inexistent. For that purpose, I will conduct a thorough analysis of the artistic process behind the creation of *mindscapes*.

KEYWORDS

M. C. Escher, printmaking, graphic art, mindscape, observation, synthesis, reference, visual perception, geometry

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INTRODUCTION

Maurits Cornelis Escher, a Dutch graphic artist born in 1898, is one of the most important and best-known representatives of printmaking and probably the most recognisable artist in the world of science and mathematics. By means of his experiments with influencing the perception of the observer and exploring the possibilities of the two-dimensional representation of reality in a way that no one had done before, he has revealed a completely new dimension of art. Escher was very well aware that every representation of reality is de facto fictitious, but he consciously used this phenomenon to present his very own vision of the world and to draw attention to elements that others often overlook. Despite the fact that he had no scientific education, his fascination focused on geometry and mathematical principles ruling the world. In his works he emphasised these very relationships - he synthesised observed objects using the simplest geometric forms, operated with the contrast of planes, played with perspective, tried to capture infinity... What he did was on the borderline between science and art. Today, thanks to his play with convention and multidisciplinary approach, M. C. Escher is considered to be truly one of a kind and became a great inspiration for many subsequent generations of artists.

The majority of Escher's works portray the so-called *mindscapes*, which are visions of non-existent realities. The universes created in his pieces are very unique - the artist presented his worlds in an incredibly realistic and detailed way, but even so, his compositions did not possess the attributes of reality. His art was based on paradox and unreality, but he was also far from the approach of surrealists or abstractionists. Escher did not belong to any trend or artistic school - you could say that his art was a one-man movement in which he resisted two extreme positions - absolute realism on the one hand and abstraction on the other.

In this paper I will analyse how the printmaker came to achieve unreality, which he constructed from representational elements. Therefore, the ultimate goal for the thesis will be answering the main research question: *how did M. C. Escher compose impossible realities by means of realistic components?* I will focus on analysing the process behind the creation of *mindscapes* and follow consequent steps the artist had to undertake in order to develop his creative method.

In order to analyse Escher's works in a credible way, it is essential to trace the evolution of his artistic output. The printmaker's path as an artist was linear and consequential - successive works were the result of previous thoughts and experiments. Therefore, this thesis will be divided into chapters that will describe in turn the phases of Escher's work and will consecutively lead to an understanding of the authorial method he has developed.

The paper will begin with his stay in Italy, where he, quite traditionally, drew urban landscapes from nature. I will then examine the period of his stay in Belgium and Switzerland, where nostalgia for his former life forced him to produce his first *mindscapes*, graphics created from memories and sketches. Finally, I will look at the last phase of the artist's work, where the creation of *mindscapes* was no longer just a sentimental endeavour, but a conscious creation of illusion and play with the viewer by noticing the possibilities offered by the translation of the three-dimensional world into the two-dimensional medium. In the last part of this thesis, I will examine the artistic process that Escher has followed while inventing his famous *mindscapes*.

Every chapter will contain a short biographical description, contextualising Escher's current approach to art. Then, each part will be supplemented with an analysis of the artist's works. The prints have been selected in such a way that the evolution of his works can be traced by means of a comparative method. In chapter 1, I have chosen a woodcut depicting an Italian landscape, very typical of that period of his life, and an accompanying photographic and sketch study. In the next part, I will focus on finding sources of inspiration for works from the Italian period in prints created in Belgium and Switzerland. For this purpose, I have selected the artist's first *mindscape* and the work that was its realistic prototype. The final part of the work will concentrate on finding characteristic references -

here again I have chosen to use abstract works from the late stage of the artist's career and the lithograph that inspired them. Every chapter will be then concluded with an analysis of his creative method, which will be based on both the contextual background and a thorough examination of his exemplary works from each period of his life. In the conclusion of the thesis I will summarise all the findings made in previous chapters and return to the initial research question. The results of the analysis will be presented with the aim of discerning the uniqueness of Escher's approach and in order to provide valuable insights into his creative process, which might prove useful for everyone fascinated with artist's œuvre and eager to learn about the method of *mindscapes*.

Regarding the methodology of working on this thesis, I have begun my analysis of Escher's work by visiting the museum Escher in Het Paleis in Den Haag multiple times, in order to study the constructed *mindscapes* in his graphics. Then, I have supported my observations by reading primarily his own texts - lectures, letters, articles etc¹. I have also used analytical publications and sources about the artist, such as *M. C. Escher: Adventures in Perception*, *The World of M. C. Escher* or *Gödel, Escher, Bach: An Eternal Golden Braid*. In addition, materials about both the mechanisms of human perception and the process behind different methods of printmaking proved very informative in understanding of M. C. Escher's works.

¹ most of them are to be found in the publication *Escher on Escher: Exploring the Infinite*, edited by J. W. Vermeulen. This book is a collection of MC Escher's original publications, personal letters, speeches and lectures. Most of them have never been published before or present a barely known material, only available in niche magazines beforehand.

CHAPTER 1. OBSERVATION

“[The universe] is written in mathematical language, and its characters are triangles, circles, and other geometric figures, without which it is impossible to humanly understand a world.”²

² Galilei, G. (2017). Il Saggiatore. CreateSpace Independent Publishing Platform.

Escher had never been an outstanding student at school - naturally he liked drawing the most out of all the subjects, but he did poorly with the others. Nevertheless, coming from a prosperous and well-educated family, his parents enrolled him in a highly respected course of higher education immediately after high school, to ensure a secure and successful future for their son. In 1922 he started studying at the Haarlem School of Architecture and Decorative Arts in order to be trained as an architect. However, shortly thereafter he found out that another field interested him much more than architecture and urbanism. He was encouraged to pursue a different path by his favourite teacher and himself a very well-known graphic artist, Samuel Jessurun de Mesquita³, who already at that time recognised his young student's great potential and talent for printmaking. After seeing the very first linocuts that Escher had made while still in secondary school, he asked him *"wouldn't you rather be a graphic artist instead of an architect?"*⁴ - to which the young student immediately agreed.

After graduating from school, young Maurits did not envisage any further future in the Netherlands. Heartbroken, because of the rejected love and bitter, because he was misunderstood by some of his teachers and fellow students, he decided to leave the country. In 1922, after completing his training as a printmaker, he moved to Italy, which had already mesmerised him a few years earlier during a holiday trip with his parents. This time, however, he stayed there for more than 13 years.

Italian landscapes and architecture, especially those of the southern regions of the country, absolutely fascinated the artist. In a letter to a friend from that time, he wrote: *"I should have to stay here for months or years to understand the passionate rolling hills and rich vegetation, those extravagant palazzos and churches, mosaics and frescoes. I'm indulging it all so greedily, that I feel that my stomach cannot take it"*.⁵ As a result of this interest, M. C. Escher developed a habit of taking annual spring walks in the mountain areas of Southern Italy, preferably in the most inhospitable of places - he used those solitary hikes as a source of inspiration for the following months. The villages and mountainous terrains not only fascinated him with vernacular and natural landscapes, but also with spatial relationships based on depth, perspective and vantage points.

In Italy, Escher no longer suffered from creative inertia and did not complain about lack of inspiration, as had happened at earlier stages of his life. On the contrary, he found himself urged to constantly record what he observed around him and to preserve it from oblivion for at least some time to come. He claimed himself to be afraid that his mind would not be able to process *"a new atmosphere he now lives in, the unexpected surprises and unrivalled moods that this blessed place presented with every day"* ⁶ - so he became absorbed in drawing, sketching, making woodcuts, and writing one letter to family and friends after another.

In order to understand how the artist interpreted his observations at this early stage of his career, it is worth following his process of documenting the findings and synthesising the thoughts in a graphic form. This will be done based on the example of a series of images from one of his spring excursions. All selected works are depicting the same place, but were created using three different techniques - photography (fig. 1), pencil sketch (fig. 2) and woodcut (fig. 3). By comparing these three different pieces together, one can trace which elements of the composition were considered to be crucial for the perception of space by the artist and which means he utilised to bring them out. The aim of the analysis carried out in this chapter is the search for answers to questions about the method of observation and the graphical reinterpretation of the recorded findings.

³ de Mesquita, S. J. Dutch graphic artist, craftsman and painter of Jewish descent. Known above all for his "sensitivist" drawings, especially caricatural representations. For years a great friend of M.C. Escher. In 1944 deported to Auschwitz, where he was murdered by the Nazis.

⁴ M.C. Escher Documentary (by CINEMEDIA-NPS-RNTV) [1999]. (2013, February 22). [Video]. YouTube. <https://www.youtube.com/watch?v=g4VAXilTRGs>

⁵ Ibid.

⁶ Ibid.



fig. 1.
title: Morano, Calabria
medium: photography
date: 1930

The series commences with this photograph, taken on the 23th of May 1930. During one of his hikes, Escher captured a panoramic view over the small town of Morano Calabro in the region of Calabria. The day was particularly hazy and foggy, with a light mist over the picturesque valley. The picture focuses mainly on the hillsides, on which the village is spread out. In the background one can see a mountainous landscape, which is faded by the means of atmospheric perspective. The photo well represents the characteristics of the local building and urban planning tradition, where low and dense buildings create a maze of narrow streets and passageways. The hilltop is crowned by a landmark in the form of a small church. From there one can overlook the series of other mountains, spreading all the way to the horizon.



fig. 2
 title: Morano, Calabria
 medium: pencil drawing
 date: 1930

Of the same spot from which he had previously taken a photograph, Escher also created a sketch reflecting the character of the town of Morano and its relation with the surroundings. The main element of the composition is, of course, the hill, on which the artist precisely illustrated the dense tissue of dwellings. He drew the town in a very precise and detailed manner, letting go only of the fragments at the very edge of the page. In contrast to the dense drawing of the hill, Escher left out the other elements of the landscape (the valley, the sky, other mountains) in order to bring out Morano's meticulousness even more and, at the same time, to emphasise the depth of the mountainous landscape.



fig. 3
title: Morano, Calabria
medium: woodcut
size: 23.9 x 31.9 cm
date: 1930

In October 1930, after coming back from his trip, Escher has added a woodcut print to his Morano collection of works. The focal component in the composition of the woodcut 'Morano, Calabria' is again the hill with the village. Escher has brought out this part of the picture mainly through the use of a significant amount of white in the depiction of the buildings and the detailed representation of their layout. Based on the observations depicted in both the pencil sketch (*fig. 2*) and the photograph (*fig. 3*), he was able to convey his very personal perception of this remarkable place. Even though he was once again very precise in the detailing and faithful reproduction of all visual aspects, it cannot be said that the woodcut is a fully realistic depiction of a given space.

The obvious limitation of realistic representation is largely due to the choice of technique used by Escher, which itself imposes a certain convention. In this woodcut, the colour spectrum is limited to black and white, making the illustration rely on strong contrasts. The artist decided not to use grey colour - all half-tones are achieved by means of extremely precise linear drawing. It is worth noticing, for instance, the way in which he has reflected the mist of the valley - the white horizontal lines densifying towards the top of the composition suggest an atmospheric perspective and add to the impression of the depth of the landscape.

While interpreting Escher's works with a focus on his creative process, several characteristics of his authorial approach can be discerned, even at the stage of those rather observational works.

Firstly, he was an attentive observer, as his art shows. Many of his works from this period appear very true to life. This can be seen, for example, in the maze-like topography of the town in the woodcut (fig. 3) or the carefully mapped geometry of the mountainous landscape in the pencil sketch (fig. 2). However, it is worth noting that *although Escher clearly had an eye for detail, he did not force it upon us. Nor did he allow detail to dominate. We only see it when we pay attention.*⁷ For the artist, the detail and faithful representation of reality have never been objectives in themselves. Rather, he focused on the effect his work would have on the viewer's perception. The accuracy of his works was therefore not a theme, but more a medium he used to make his story resonate.

Moreover, even with Escher's extraordinary attention to detail, *his every print prompts us to wonder whether it really does depict things as they actually were*⁸. As an example, it is noteworthy to look again at a woodcut (fig. 3) depicting the Italian town of Morano. An interesting nuance, unnoticeable when we see the print without reference to the photograph or the sketch, is the fact that the landscape is portrayed in a mirror image. This kind of effect could be regarded as an error, if it were considered to have resulted only from a silly mistake in the woodcut-making process. However, Escher was already a very experienced artist who planned his works down to the smallest detail, so it is known that he would not have made such a beginner's mistake. This work is a record of a specific moment and the associated feelings. The artist's aim was, again, not to faithfully reproduce reality, but to share his experience with the viewer. By using a mirror reflection, Escher played tricks on the observer and, already at this early stage of his career, questioned what is actually real. Although he cherished the value of careful observation of the world, he resisted the unreflective pursuit of creating a perfect figurative copy. In creating this work, it was much more important to him that the viewer understands how a young man raised on the flat lands of the Netherlands might feel in this new-to him, fascinating landscape of the Calabrian mountains.

Another characteristic of Escher's approach was that from an early age the artist looked at the world in a way that was very peculiar to him. It was not the romantic and mysterious aspect of nature that fascinated him the most, but on the contrary, its well-ordered character. For Escher, finding geometrical patterns was his tool for understanding the world. Therefore, when observing reality, he always looked for a logical, orderly structure. For instance, within the on-site sketch (fig. 2) different spatial relations of the mountainous terrain were his main point of interest. And even with such an unsophisticated technique as a linear pencil drawing, Escher was able to emphasise these very relationships. Since a sketch is much more able to reflect the author's intention than a photograph (fig. 1), in this work he has made a conscious choice of what he most wanted to communicate to the recipient of his work. The aforementioned contrast between elements full of detail and those completely abandoned, the multi-planarity of the composition, the bird's-eye perspective - these are the main elements responsible for the interpretation of the Italian landscape through Escher's eyes.

Finally, using as few means as possible to express an idea as clearly as possible is an ideal he would always cherish. Comparing the woodcut print (fig. 3) with the photograph (fig. 1), it can be seen the artist has performed a certain synthesis of the town, reflecting not so much the exact layout, but more its very idea. The drawing of the hill emphasises the principle on which the urban structure and architectural character of Morano are based - the buildings have been abstracted into a series of cuboid blocks with windows, while the chaotic arrangement of the streets has been turned into concentric bands flowing down the steep slope. Escher has deliberately synthesised elements of the landscape to show only what he felt was necessary to capture the spirit of the moment and the character of the little town with its surroundings.

⁷ Piller, M. (2021). Puddle. Escher in Het Paleis. Retrieved March 2022, from <https://www.escherinhetpaleis.nl/story-of-escher/puddle/?lang=en>

⁸ M.C. Escher Documentary (by CINEMEDIA-NPS-RNTV) [1999]. (2013, February 22). [Video]. YouTube. <https://www.youtube.com/watch?v=g4VAXilTRGs>

Consequently, the analysis leads to the conclusion that Escher's creative process was based, firstly, on attentive and conscious observation in order to grasp the geometric properties of a given space, and secondly, on a synthesis of compositional elements aimed at emphasising these properties.

"We adore chaos because we love to produce order"⁹, Escher stated, outlining his understanding of the relationship between nature and human perception. Numerous scientific studies have been undertaken to prove that what distinguishes humans from other non-human species is the ability to think abstractly, which leads to an understanding of fields such as mathematics, geometry or philosophy. Even *among primates, humans are unique in their sensitivity to the presence of geometric regularities such as right angles, parallelism, symmetry (...) and ability to develop formal symbolic systems that capture regularities in the external world*¹⁰. Despite possessing this distinctive ability, people predominantly use it in a subconscious manner. In Escher's case, however, the situation was different - the artist was aware of his ability to relate visual observations to the abstract principles of mathematics or geometry, even though never being educated in either field. He consciously used this realisation to see the world through such ideas as symmetry, pattern or perspective. This can be seen in the analysed series of works, whose main focus was, after all, neither nature nor architecture in the conventional understanding, but precisely the properties of perspective based on depth and infinity, and the relationship of the cuboid structure of buildings to the irregular line of a mountain landscape.

The first step of Escher's creative process was thus this unusual method of perceiving and understanding the world. The artist then brought his insights to life through the graphic medium, and for this purpose he relied on his ability to synthesise. According to American creativity theorist Alex Faickney Osborn¹¹, *creativity is the production of meaning by synthesis*¹². In other words, thanks to the synthetic thinking, here understood as *deductive reasoning*¹³, it is possible to give meaning to ideas and reach certain conclusions. In the case of Escher, Osborn's theory proved to be right - for it was through a synthetic representation of reality that the artist was able to reflect his thoughts.

In order to synthesise one's observations in a comprehensive way, it is important to understand what has to be shown and why. For Escher, the message has always stemmed from his fascination with mathematics and geometry. Therefore, it was these scientific spatial properties of the observed environment that he focused on the most and that he wanted to bring out in his works. His synthesis led him to simplifying geometric forms, finding rhythms and searching for appropriate proportions. The rest of the features he abandoned, as they would interfere with the pure message of his works.

It is further worth noting that Escher's conscious choice of employed technique also seems to be of great significance. The creation of a woodcut by its very nature must be based on a certain synthesis, not least because of the limited possibilities of using colour or the labour-intensive and tedious process. It seems to me, therefore, that becoming acquainted with this kind of artistic practice at an early age certainly must have had a great influence on the way the artist perceived and interpreted the world that surrounded him.

⁹ Escher, M. C., Ford, K., & Vermeulen, J. W. (1989). *Escher on Escher: Exploring the Infinite*. Harry N. Abrams.

¹⁰ Sablé-Meyer, M., Fagot, J., Caparos, S., van Kerkoerle, T., Amalric, M., & Dehaene, S. (2021). Sensitivity to geometric shape regularity in humans and baboons: A putative signature of human singularity. *Proceedings of the National Academy of Sciences*, 118(16). <https://doi.org/10.1073/pnas.2023123118>

¹¹ Osborn, A. F. American advertising executive, author of the creativity technique named *brainstorming*.

¹² Osborn, A. F. (2011). *Your Creative Power*. Myers Press.

¹³ synthesis. (n.d.). In Merriam-Webster. Retrieved March, 2022, from <https://www.merriam-webster.com/dictionary/synthesis>

CHAPTER 2. RECOLLECTION

“My drawings serve only as a diary – so that I can look back later and see what I saw here, and see better what I see”¹⁴

¹⁴ M.C. Escher Documentary (by CINEMEDIA-NPS-RNTV) [1999]. (2013, February 22). [Video]. YouTube. <https://www.youtube.com/watch?v=g4VAXilTRGs>

In the 1930s, Escher's idyllic life had undergone a series of changes. Living in Rome became extremely difficult, due to, among other things, his son's illness and the rising fascist spirit, which greatly disturbed the artist. Escher and his family moved to Switzerland and then to Ukkel, near Brussels. Unfortunately, these were not happy years for him. The cold and isolated environments did not fascinate him, and he was unable to find a source of inspiration in this completely different landscape. Escher greatly missed the Mediterranean climate of Italy, the mountain hikes, the small villages, the sun, the wild scenery. Nature, vernacular architecture and their perception were the main subjects of his numerous works, which - in spite of the author's reinterpretations - were always full of detail and possessed a high degree of verisimilitude. Since he was completely indifferent to his new surroundings, Escher was forced to look elsewhere for inspiration - so he turned to his own imagination. It was the very moment when the artist first redirected his fascination with *landscapes* towards the so-called *mindscapes* - imaginary landscapes, existing only in his head.

*Mindscape is the landscape in inner reality. Inner reality is constituted by consciousness or states of mind; for example, the experience or imagination of a tree and the associations it involves. Inner reality is subjective; it exists in the minds of subjects only. Mindscape is the landscape as people experience it and can be very personal in meaning. It is the landscape produced by experiences and meaning-giving processes. Mindscape is a system of essentially individual values, judgements, feelings and meanings that are related to the landscape.*¹⁵

While inventing the non-existent realms, Escher always had in the back of his mind the images he remembered from the joyous years spent in Italy. *"If he ever needed a landscape, a street or building for one of his later prints, he pulled out one of his sketches from this period. In this way, he was able to make use of his unrelenting nostalgia for his Italian years"*¹⁶. The artist had a wide selection to choose from, as works from this period of his artistic career constitute almost half of his entire oeuvre. For the rest of his life, he was particularly fond of them and saw them like a personal journal documenting his most cherished memories.

In this chapter, the analysis will focus on the analogies between the drawing made in Italy (fig. 4) and the woodcut made several years later which was inspired by it (fig. 5). Apart from describing how the original work was reinterpreted into an impossible reality, I will also outline the context in which the first *mindscapes* were created and try to answer the question about the artist's purpose and need to create non-existent worlds.

¹⁵ Jacobs, M. (2006). The Production of Mindscapes. A comprehensive theory of landscape experience (Dissertation Wageningen University). <https://edepot.wur.nl/40182>. p. 21

¹⁶ M.C. Escher Documentary (by CINEMEDIA-NPS-RNTV) [1999]. (2013, February 22). [Video]. YouTube. <https://www.youtube.com/watch?v=g4VAXilTRGs>



fig. 4
 title: *Vecchia Savona*
 medium: black and white pastel
 size: 31.5 x 23.9 cm
 date: 1936

During his summer trip in 1926, Escher visited the seaport city of Savona, located 40 km west of Genoa in an Italian region of Liguria. The artist drew much of his inspiration from observations of everyday life, which this on-site pastel drawing (fig. 4) is the best evidence of. In this work we can see an inner-city street from the viewpoint of a person sitting at a window on the 1st floor of a neighbouring building. The composition of the picture consists of two opposing frontages and a narrow passage between them, forming the central point of the illustration. The perspective is almost central and unidirectional, making the observer's gaze naturally turn towards the depth of the alley.

The illustration, like most of Escher's work from this period of his career, is black and white. In this sketch, the artist utilised a medium unusual for him - pastels, which allowed him to achieve a full spectrum of grey tones. The grainy texture of the pastels on thick paper can be seen on surfaces such as walls and the street, fitting well with the character of this somewhat decaying urban landscape. As a result, the picture is very vivid, and the nuances of chiaroscuro make it relatively realistic. An interesting aspect of this drawing is that, in contrast to the very detailed depiction of architecture and elements of the urban landscape, the human figures are drawn in a very schematic way.

The picture's theme is the everyday city life of Savona's inhabitants. Within the ground floors of the buildings, Escher has sketched numerous genre scenes suggestive of street activities. Details such as white laundry hanging on strings, open shutters and potted plants on the balcony also bring life to the illustration. The image of the city is in no way idealised, but presents it as it is - with all its faults and imperfections.



fig. 5
 title: *Still Life and Street*
 medium: woodcut
 size: 48.7 x 49 cm
 date: 1937

In the aforementioned context of the lingering nostalgia towards Italy, in 1937 he completed the first of his impossible *mindscapes*, entitled '*Still Life and Street*' (fig. 5). This woodcut is a commemoration of a moment that happened 11 years earlier - when Escher was sitting at the window looking out at a street in the town of Savona. This postcard-like picture tells the story of his emotions at the time, as well as his longing for a distant memory that is not necessarily realistic, but captures his feelings for the place so vividly remembered.

The artwork depicts a view already familiar from the sketch '*Vecchia Savona*' (fig. 4). One can see a narrow street filled with the everyday routines of its inhabitants. The recipient of the image can once again feel as if he or she were sitting and observing urban activities through the window - now even more so, because on the window sill in the foreground Escher has sketched some ordinary household objects - books, a pipe, playing cards, matches... Suddenly though, one notices that something in this agreeable picture does not quite add up. The 'window sill' seems to have no end, and its plane turns into the very plane of a street. In this work, Escher has drawn two completely separate realities, the domestic setting of a room and the outdoor world of a street, which come together in a very natural, yet impossible way. The foreground is closely linked to the background plans, even though the overall composition is devoid of sense and logic.

During one of his lectures in 1963 he said the following: *“It sometimes seems to me that we are afflicted by an urge, or possessed by a desire for the impossible. The reality around us, the three-dimensional world that surrounds us is too ordinary, too dull, too commonplace. We yearn for the supernatural, the impossible, the miracle.”*¹⁷ With the artwork ‘Still Life and Street’ (fig. 5) began his fascination with the impossible. The human perception and the illusion of spatiality became one of the leitmotifs of his works. Being familiar with his biography, one might wonder whether this mindset change was a form of escapism from the world he felt opposed to and which was changing in a way that he did not tolerate anymore. Or maybe it was just a further deepening of his earlier youthful fascination with perspective, reflections, optical illusion – a childish game he decided to pursue? Most likely both of these factors were responsible for this alteration in Escher’s way of approaching his artistic practice. Importantly, they contributed to the initiation of an entirely new chapter in Escher’s career – one that resulted in a one-man art movement unseen before or since by any other artist.

From that point, many of Escher’s drawings had their origin in paradox, illusion and double-meaning. For this reason, to this day he is frequently compared to representatives of the Surrealist movement, although true experts of the artist’s œuvre consider this comparison inadequate. The divergence of these two approaches was explained, for example, by Micky Piller¹⁸ from the Hague Museum devoted to Escher: *“At a time when abstract and surreal art was ruling the galleries, Escher fooled all of us by exploring such abstract ideas as eternity, infinity, and the impossible in apparently realistic prints that were amazingly well made. As the general public lost contact with the art world, Escher’s prints seemed simple and easy to understand.”*¹⁹ From this statement, it is worth drawing a general conclusion about the artist’s output at this stage: non-existent landscapes (and even such that would have no right to exist) have become the main motifs of his art, but they still feature elements that we know from the real world. Using the approach to architecture in the print depicting Savona (fig. 5) as an example – the urban scenery itself is neither strange nor unreal. The composition consists of a very faithful representation of the buildings and its elements, with many details and small nuances. Comparing the original sketch (fig. 4) with its later reinterpretation (fig. 5), it is clear that the artist still relied on his very detailed on-site observations.

Moreover, Escher is still fascinated by the same attributes of analysed space. He is passionate about abstract geometric ideas that order the world and help make it more comprehensible to him. However, his fascination with perspective and depth, which originated from observations of Italian landscapes, has now evolved into an obsession with imaginative tricks on human perception. *“Of course, one can still manufacture hypothetical world, in which Escherian events can happen... but in such world, the laws of biology, physics, mathematics, or even logic will be violated on one level, while still being obeyed on another, which makes them extremely weird worlds”*²⁰. What is real, what is fantasy? To me, what is unique about the artist’s creative process is his flawless and intuitive understanding of the mechanisms of human perception, which for a moment allows the viewer to experience an impossible situation as real. Thanks to a certain air of mystery²¹, which is not immediately apparent, the narrative is presented in such a way that the element of impossibility is obscured and a superficial observer could even not notice it. As Escher said himself during one of his lectures, *“if you want to draw attention to something impossible, you first have to try to fool yourself and then your audience (...)”*²² This is exactly what happens during the first encounter with the print ‘Still Life and Street’ (fig. 5), which gradually reveals to the viewer its subtleties, and thereby invites into this half-real, half-mythical world. I believe that this immersive experience is a very significant feature of Escher’s creations, which makes his works completely intuitively comprehensible.

¹⁷ Escher, M. C., Ford, K., & Vermeulen, J. W. (1989). *Escher on Escher: Exploring the Infinite*. Harry N. Abrams.

¹⁸ Piller, M. Curator of Escher in Het Paleis museum in The Hague. Art historian and professional writer about visual arts.

¹⁹ Sooke, A. (2015). MC Escher: An enigma behind an illusion. BBC Culture. Retrieved March 2022, from <https://www.bbc.com/culture/article/20150624-arts-most-famous-illusion>

²⁰ Hofstadter, D. R. (1999). *Gödel, Escher, Bach: An Eternal Golden Braid* (20th Anniversary ed.). Basic Books. p. 99

²¹ Escher, M. C., Ford, K., & Vermeulen, J. W. (1989). *Escher on Escher: Exploring the Infinite*. Harry N. Abrams.

²² Ibid.

CHAPTER 3. REFERENCE

“There is much more to a typical Escher drawing than just symmetry or pattern; there is often an underlying idea, realised in artistic form.”²³

²³ Hofstadter, D. R. (1999). Gödel, Escher, Bach: An Eternal Golden Braid (20th Anniversary ed.). Basic Books. p. 11

The last period of Escher's life were the years when his artistic output was finally appreciated by a wider audience. The artist could not complain about a lack of commissions, both for traditional prints and design products such as wallpapers, packaging designs, wrapping papers, and postage stamps. The press, including *Time* or *Life* magazines, published articles about him and his works, which brought him additional international fame. It is even said that in 1969 he was approached by Mick Jagger himself²⁴ to design the cover for his latest album - but he firmly refused.

During those years he also established many acquaintances with personalities from the world of science²⁵, who were themselves fascinated by Escher's unusual mathematical intuition. Many of them helped the artist to deepen his understanding of geometrical principles and even gave him ideas for further works. Especially the knowledge provided to him by crystallographers was influential, as it triggered his lifelong passion for creating tessellations²⁶.

At this stage, Escher had somewhat freed himself from nostalgic thoughts, but in turn had completely immersed himself in his work. Despite so many years of practice and constant exploration of the same themes, the artist was still - in fact increasingly - fascinated by those same abstract ideas. When asked *"Don't you do too much of the same thing?"*²⁷, he compellingly answered: *"Perhaps I do. But if something moves me, I have to draw it. I may even sell little, but I cannot sit still."*²⁸ Consequently he pursued his search for geometrical qualities in the surrounding world and kept creating impossible mindscapes.

This time, however, he implemented a new method of playing with the viewer by means of evoking various associations. In order to understand how his unique approach has been developed in this period, an analysis of three works depicting the same location, but made at different stages of his career, will be carried out. Tracing the chronology of this series of prints will allow for a better understanding of Escher's ultimate creative method.

²⁴ Kersten, E. (2021). Escher and The Rolling Stones. Escher in Het Paleis. Retrieved March 2022, from <https://www.escherinhetspaleis.nl/escher-today/escher-and-the-rolling-stones/?lang=en>

²⁵ Among them: Sir Roger Penrose, who inspired artist's search for impossible objects and contributed to the creation of *"Ascending and Descending"*; Donald Coxeter, who gave Escher a tip about depicting infinity and a system for the circle limit used in *"Circle Limit I"*, *"Circle Limit II"*, *"Circle Limit III"* and *"Circle Limit IV (Heaven and Hell)"*

²⁶ *A covering of an infinite geometric plane without gaps or overlaps by congruent plane figures of one type or a few types.* tessellation. (n.d.). In Merriam-Webster. Retrieved March 2022, from <https://www.merriam-webster.com/dictionary/tessellation>

²⁷ Exploring the Infinite. Harry N. Abrams.

²⁸ Exploring the Infinite. Harry N. Abrams.



fig. 6
 title: Atrani
 medium: lithograph
 size: 27.5 x 37.9 cm
 date: 1931

This lithograph is another view of Italian towns, one of very many. It was created in 1931, when the artist was still living in his beloved country. This time Escher has depicted a very small village called Atrani located on the cliffside of Amalfi in the Campania region. The image shows the very end of the town, just at the border with the Mediterranean Sea. The bird's-eye perspective suggests that the town is observed from above, from the cliff - which only reinforces the impression of great differences in altitude, so characteristic for this particular terrain.

The composition features very characteristic architectural elements, such as a tall tower or church cupolas. They constitute the dominant component of the picture, making it possible to recognise a specific place. Other urban elements are presented in a simplified, geometric way - as a series of cuboid blocks with rectangular windows. The perspective of the building masses is very close to the isometric view. Such a view takes away from the townscape's reality, making us see it also as a sequence of different volumes.

The whole image is based on a strong contrast - the white town is juxtaposed with the black surface of the water. The border between the two elements is very distinct and runs more or less through the diagonal of the illustration.

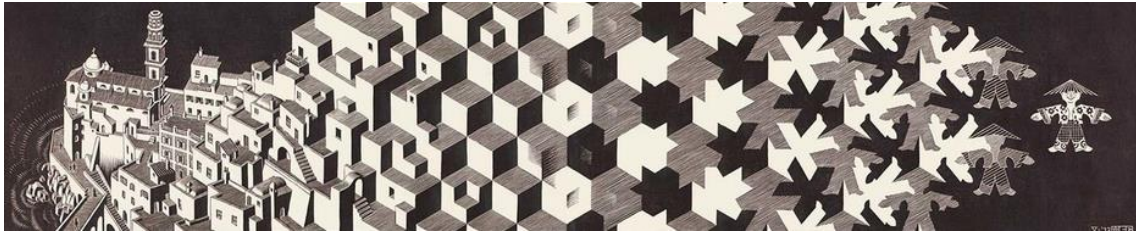


fig. 7
 title: *Metamorphosis I*
 medium: woodcut
 size: 19.5 x 90.8 cm
 date: 1937

A few years after creating the work 'Atrani' (fig. 6), Escher revisited this small coastal town in his thoughts. He decided to incorporate it into one of his large-scale works entitled '*Metamorphosis I*' (fig. 7). Clearly, the analysed fragment of this print is a geometrical reinterpretation of the observations made earlier, in 1931.

A piled up geometry of the building volumes is acting as a symbol of a town on a hill. The fragment depicting the headland of the town has a high degree of credibility and detail, but the further the composition moves away from the sea, the more abstract it becomes. In this work the artist has carried out a synthesis of architectural elements up to the simplest geometry. The stacked buildings are transformed into abstract cuboids, characterised by a strong contrast of shaded and illuminated surfaces. The isometric representation of architecture serves as a preparation for a leap into unreality.

The described fragment is only a part of the whole composition of '*Metamorphosis I*', which is an artwork devoted to geometric transformations. The whole sequence of scenes consists of (in order from the left of the composition): the town of Atrani - cuboid solids - two-dimensional tessellations - an Asian figure in a hat. This illustration can be seen as a study for subsequent works with the same titles.

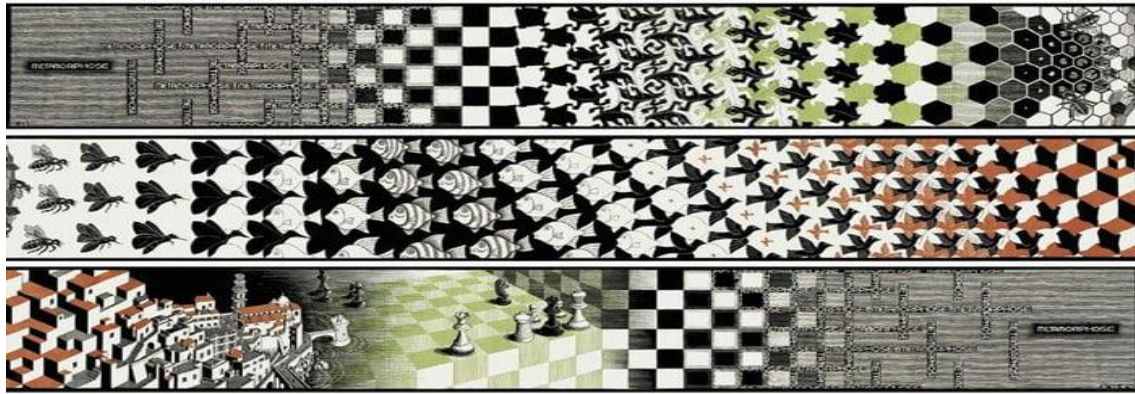


fig. 8
title: *Metamorphosis III*
medium: woodcut
size: 19 x 680 cm
date: 1967-68

Another iteration of Atrani's view is a fragment of '*Metamorphosis III*' (fig. 8), made in 1967-68. In this representation of the town, in addition to the geometrisation of the surroundings, the artist also introduced references to associations with everyday life. The most noticeable change is of course the introduction of chess figures in the fragment of the composition that once represented the sea. The greenish surface on the right side of the composition now has a dual function - that of a landscape element and that of a chessboard.

The selected extract is a fragment of one of the artist's largest works - measuring 680 cm in length. This time in addition to transformation, the themes were to be eternity and infinity. Therefore, the multi-element sequence of scenes was conceived in such a way that the beginning could merge with the end of the composition and create an infinite whole.²⁹

²⁹ Today, in the museum Escher in Het Paleis, this composition is exhibited in the form of a circular print, where there is no beginning and no end and the sequence of scenes loops indefinitely.

Analysis of these three works allows me to formulate the statement that most Escher pictures from his *mindscapes* collection rely heavily on a recognition of certain basic forms, which are then put together in non-standard ways. In his book “*Gödel, Escher, Bach: An Eternal Golden Braid*” Douglas Hofstadter³⁰ describes this kind of phenomenon as ‘*islands of certainty*’, which he later defines as follows: “[*They are*] elements upon which we base our interpretation of the overall picture. Having once identified them, we try to extend our understanding, by seeking to establish the relationship which they bear to one another.”³¹ Escher had created in his mind a certain ‘catalogue’ of elements, which he later used in many of his works to create non-existent compositions. The viewer instantly recognises them by means of associations and references.

The ‘*islands of certainty*’ in the artist’s œuvre are mainly elements borrowed from Italian landscapes – characteristic towers, bun-shaped roofs, domes, arcades, the urban layout of mountainous towns (...). Just as cities need their dominant elements to remain recognisable, images also need characteristic motifs to evoke certain associations. Taking both ‘*Metamorphosis*’ as examples, one can easily see what elements Escher used to evoke a sense of familiarity and reality of the portrayed landscape. Even though the building blocks are much more abstract than in the 1931’s prototype, the association with Atrani is inevitable. Therefore, the characteristic elements, such as the tower and cupolas, have not been retouched.

In ‘*Metamorphosis III*’ (fig. 8) the artist went even a step further, by conducting his *playful, childlike toying with imagery and thought associations*³². In this case, the characteristic building at the end of the headland is given a double identity, playing the role of both a compositional element of the town and a chess piece. Escher thus carries out a process in which he gives these ‘*islands of certainty*’ a double-meaning. Bearing in mind that this is a work about eternity and infinity, it becomes clear that this gesture was intended to maintain the circularity and fluidity of the successive motifs of the story.

In both *Metamorphosis*, the already mentioned synthesis, which leads to the geometrisation and abstraction of realistic elements, plays a major role. Here, however, instead of merely emphasising the mathematical properties of the observed landscape, it also contributes to creating the illusion of the titular metamorphosis and achieving the effect of continuity, and even infinity. By gradually abstracting Atrani’s buildings and moving from a detailed drawing of the tower to completely geometric cubes, Escher has created a sequence that, although based in the real world, becomes impossible and abstract.

Also in these works, one of his first to do so, Escher mixes two- and three-dimensional images alongside one another. Playing with perspective and depth not within the depicted object, but within the medium on which it is shown, was quite an innovative movement in printmaking and, generally, in art. The synthesis of three-dimensional solids to flat surfaces was therefore another step towards constructing an optical illusion and influencing the viewer’s perception.

³⁰ Hofstadter, D. R. American scholar of cognitive science, physics and comparative literature. His research includes concepts such as analogy-making, artistic creation, literary translation, discovery in mathematics and physics.

³¹ Hofstadter, D. R. (1999). *Gödel, Escher, Bach: An Eternal Golden Braid* (20th Anniversary ed.). Basic Books. p. 97

³² Escher, M. C., Ford, K., & Vermeulen, J. W. (1989). *Escher on Escher: Exploring the Infinite*. Harry N. Abrams.

CONCLUSION

*“After all, we feel connected to nature and the world around us first and foremost through our day-to-day observations and experiences. Nevertheless, the unapproachable is also a permanent subject of the work: the world of ideas and the dream world. After all, our abstract thinking ability also connects us to things that are not there. For example, we are able to think about the lives of people thousands of years ago on the basis of archaeological findings. We can, thanks to a certain mathematical understanding, imagine recursive dream worlds with eternally flowing waterfalls and infinite staircases.”*³³

As aforementioned in the introduction part of this paper, Escher was one of the first and most influential artists in the field of optical illusion, and an important figure for a completely new perception of art. In my subjective opinion, the way he created non-existent realities was a manifestation of his genius, which was primarily the result of his remarkable mathematical intuition and his very unique understanding of the world around him.

When creating *mindscapes*, Escher used elements from the real world, which he presented in an exquisitely realistic and detailed manner, relying on numerous study sketches, notes and photographs. Nevertheless, from the very beginning his observations were far from an objective vision of the world, but were rather based on an individualistic perception of the situation. For Escher, there was no objective tree or church tower - he drew all his depictions in relation to a specific moment in time and place and the accompanying emotions. On one day, the impression of the same element could have had a completely different expression than months later. Additionally, he filtered his experiences through the prism of mathematical and geometric rules, which made the very stage of observation additionally acquire a certain degree of abstraction.

Moreover, the understanding of human perception mechanisms was an essential feature of his practice. In order for the illusion to actually occur, the elements he used in his compositions had to be lifelike. It must have seemed to the viewer that the whole piece should work in a certain way, only to realise after a while that it did not and that he had been deceived. Without reference to reality, i.e. the *islands of certainty* mentioned in chapter 3., the audience would lose their point of reference. Furthermore, his references to memories and private experiences gave his works a personal and emotional character, which in turn established an invisible relation between the artist-storyteller and the viewers of his prints.

Thus, how did the artist create non-reality? Escher did this in various ways. The first one was noted when analysing ‘*Still Life and Street*’ (fig. 5). The artist used the laws of optics and geometry and his method was based on the distortion of just one of the principles of the physical space with the simultaneous functioning of all the other rules. In this particular example he used the merging of two parallel planes - which at first appeared to be perfectly natural, but after a while would turn out to be an illusion. The important point in this process is that the rest of the picture should look as normal and realistic as possible - and that is why the projected perspective of this woodcut is perfectly correct. The second method was used in *Metamorphosis*. Here, he applied a gradual synthesis of physical objects - in such a way that suddenly what is real has been transformed into a completely abstract geometry.

³³ Callahan, A. (2019, June 4). Escher was the original paper architect. Indesign Live: Interior Design and Architecture. <https://www.indesignlive.com/news/escher-original-paper-architect>.

“Even if we stick to the convention that a wall or a piece of paper is flat, it remains a curious thing that we conjure up illusions of three-dimensionality on flat surfaces and have done so since time immemorial, as if it were the most normal thing in the world. Isn't it really a bit absurd to draw a few lines and then say “This is a house?””³⁴

For me, Escher's exceptionalism also lies in the fact that he was very well aware of the limitations, but also the extraordinary possibilities, of the two-dimensional medium that is used to represent three-dimensional space. *„The human eye is so accustomed to seeing things in three dimensions on a drawn surface that we forget we are actually looking at a piece of paper”³⁵*. The process of creating *mindscapes* was based on the fact that the elements remained completely the same as in reality, but the optical and geometric rules were changed. The result was a reality that had no right to exist - but it was nevertheless present on paper. The worlds invented by Escher could thus only exist because they were depicted on a two-dimensional plane. For the artist, however, the question of reality and unreality was a fundamental question for any kind of art. After all, every representation of reality is, in fact, a fiction. Even the most realistic paintings are only paintings and carry the imprint of the author's reinterpretation. This philosophical realisation has led Escher to ask himself: why not explore this fictional realm to the limits of plausibility? Why - if what we are producing is not true anyway - must we follow the same rules that apply to us here in the real world?

The analysis of the *mindscape* creation process is an important lesson for creators who deal with exactly such a translation of three-dimensional reality in their conceptual work. The 2-dimensional representation of reality entails many potential pitfalls, but it also offers countless possibilities. In my understanding, the awareness of the relationship between what is on paper and what is real allows for a much more mature interpretation of the world around us.

„Which reality is actually more powerful: that of the present, instantly absorbed by our senses and discernible, or the memory of what we experienced previously? Is the present truly more real than the imagined past? I truly do not feel capable of answering this...”³⁶

I think the best summary of Escher's approach to *mindscape* creation and his understanding of reality would be the above entry from his journal. The question he raises is still open and seems to me fundamental not only from the point of view of art and graphic design, but also as an ontological issue which concerns each and every one of us.

³⁴ Ernst, B. (1994). *The Magic Mirror of M. C. Escher* (5th Printing ed.). Barnes & Noble Books.

³⁵ Escher, M. C., Ford, K., & Vermeulen, J. W. (1989). *Escher on Escher: Exploring the Infinite*. Harry N. Abrams.

³⁶ Ernst, B. (1994). *The Magic Mirror of M. C. Escher* (5th Printing ed.). Barnes & Noble Books.

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