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Scaling the Imagination:
The Creation of the Subject-Object Divide in
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Introduction

Vision is easy to take for granted: seeing, as they say, is believing. Visual perception, however, has not always had such a privileged place in our understanding of the world. Visual perception has changed over time in conjunction with the social and cultural shifts around ideas of truth and the accessibility of nature to the human observer. The development of empiricism coincided with the development of the idea that the human observer is trustworthy enough to study the natural world, and that the human observer is not, somehow, so different as to be excluded from its essence. This suggests shifting ideas about where the experience of observation occurs – whether it occurs in the human subject, or if the qualities of the thing observed occur in the object itself. The separation of the subject and object in the act of perception has implications for the study of landscape and architecture because of the abstraction of seeing that distances human observers from the built and natural world. This paper aims to outline the edges of human experience as brought about in the change in Western visual paradigms, through a broad survey of the literature. Using metaphors from critical theory to explore the locus of the generation of meaning, this paper will suggest that the chasm between subject and object helped drive a wedge between people and natural or urban landscapes, but that this distance can be bridged through architectural interventions that frame/re-frame landscapes to close the gap.

1. Shifts in Seeing

Seeing is a social activity, mediated by developments in technology, that influences the way we imagine landscapes through the attached notions of what it means to be a body in space. Through the Renaissance, and especially in influential Italian painting of the time, “seeing” accurately—that is, painting with geometric perspective—was a contrived exercise in relating the narrative desired by the depicter. During the Enlightenment, however, new forms of seeing began to emerge and become visible, such as in the more descriptive Dutch painting. This mode of seeing, described by art historian Svetlana Alpers as “the Optical,” emerged in conjunction with studies of optics and the mechanics of vision occurring as empiricism took root. This resulted in a corresponding shift in ideas of perception. Instead of an understanding of visual perception as occurring because of a viewer’s action, the natural world was “out there,” indifferent to its human perceiver. This had noteworthy implications for understandings of landscape that will be outlined below.

At the turn of the seventeenth century, the Dutch seemed to be at the centre of a major transition in artistic representation that paralleled transitions in our conception of the world. While the art schools in Italy taught perspective and a kind of narrative painting meant to create a lifelike “substitute world” of gods and historical figures,¹ the Dutch were busy painting just what they saw. This culture of descriptive painting, working toward being a kind of hyper-accurate, camera-like vision, was part of a view that human artifice and ability to observe the world went hand-in-hand: “It was a particular assumption of the seventeenth century [in Holland] that finding and making, our discovery of the world and our crafting of it, are presumed to be as one.”² A keen eye, for the Dutch, begat deft hands—no surprise when considering the Dutch proclivity for controlling natural landscapes with dykes and canals. This shift, Alpers writes, represents the addition of the “optical” to the development of perspective in painting, where accuracy through measured observation grew in importance alongside developments in the study of optics and considerations of the camera obscura, the fifteenth-century ancestor of photography. This new emphasis on accuracy in Dutch painting was part of a dialogue between that medium and the camera obscura, considered to be akin to the human eye. While landscapes had before been painted purely to play a supporting role in a larger narrative, natural backgrounds grew in importance as an indifferent context for scenes painted “as-is.”

The growing importance of optical modes of seeing over those contrived narrative traditions did not simply grow in conjunction with enthusiasm for the camera obscura. As Jonathan Crary writes in his *Techniques of the Observer*, the traditional conception that the camera obscura is simply an ancestor of film and photography in a line of historical continuation is not the entire picture. Instead, he suggests, the device marks larger changes in what constituted vision and what “observers” were in the first place: the camera obscura “stood as a model ... of how observation leads to truthful inferences about the world; at the same time the physical incarnation of that model was a widely used means of observing the visible world, an instrument of popular entertainment, of scientific inquiry, and of artistic practice.”³ As a key element in the unfolding of empiricism, the device both developed because of a cultural readiness to accept this mode of seeing, and helped institute that readiness and emphasis on observation. The camera obscura, here, is a cultural artifact bookmarking the period wherein a new kind of observer emerged: an observer like Isaac Newton, who, in the use of seeing instruments, is “less the observer than the organizer”⁴ of information out there in the world, for the human to interpret. This represents a crucial novelty in the history of seeing, where the human observer and the natural world are no longer a unified fabric but represent an arms-length relationship.

Raphael, *The Marriage of the Virgin*, 1504.

Vermeer, *The Geographer*, 1668-1669.

Vermeer's *Geographer* contrasted with Raphael's *Marriage of the Virgin*, showing the shift in selected, largely invented perspective to a more descriptive Dutch style. The subject of the painting on the right adds weight to the argument that top Dutch experts in seeing (i.e. painters) were concerned with the activity of accurately representing nature, akin to the Dutch tradition of mapping.

Top left: The camera obscura. Author unknown.

Top right: Descartes likened the optics of the eye to those of a camera obscura.

Above: The image created by a camera obscura by Alebardo Morell.

2. Objects and Subjects

The separation of the subject from the object in the history of perception resulted in the internalization of the experience of seeing. Rather than a process by which the human participates in a fabric of meaning – a uniform field of subjects—seeing became a process of recording and of internal generation of meaning. Walter Benjamin’s writing touches on the topic and its implications for space in his *One Way Street*. Benjamin is highly critical of modern life, focusing on technology, politics, advertising, bourgeois culture, and their effects on perception. He muses on the interactions between subject, object, and society, seamlessly moving between talking about narrative and reality. Like Benjamin, this paper considers the meaning in narrative with equal weight to that understood through visual perception. For Benjamin, perception is in the eye of the perceiver: one sees one’s loved one in the pages of every book and story, when one’s mind is preoccupied with that person.⁵ Less esoterically, he uses the example of seeing a place for the first time from afar, and of later becoming familiar with it: “The thing that makes the very first sight of a village or town in the landscape so incomparable and so irretrievable is that its remoteness reverberates in its closest association with proximity. Habit has not yet done its work. ... Once we have begun to feel right in a place, the original image can never be reconstituted.”⁶ In Benjamin we see an acknowledgment of the mechanisms at work through the separation of the subject from the object, where the meaning of an object is constructed in the observer him/herself and is dependent on a context. The observed object is both other, and intimately interior.

We see a solidification of this separation in Roland Barthes’ discussion of photography, in his *Camera Lucida*. Despite the sixty or more years that separate his writing from Benjamin’s, Barthes is still exploring the implications of the subject-object divide. The photograph, he writes, turns the referent object into something more durable, albeit artificial. The photograph itself (that is, the paper or, more recently, the screen device) is invisible without deeper reflection, but carries its referent along with it and through it. This mechanism is so strong that even the individualized human subject, when photographed, becomes a frozen referent who transcends death and escapes their interior experience—an especially strange thing if the person is photographed without their knowledge.⁷

The interiorized subject does not pull the meaning experienced in an object from thin air, but from the experiential space conjured up by narrative – a space of interest in considering the boundaries of what is possible to perceive in this paradigm of seeing. These mechanics of meaning discussed in Susan Stewart’s *On Longing* bring a valuable discussion from critical theory to this topic. For Stewart, the interiorized subject must be able to encapsulate perception inside a realm of imagination that might be likened to a box. The imagination’s capacity to imagine exists within the confines of a box of understanding, constituted of lived experiences. The narrative world created in stories has to “work” for us, and feel real, in order to make sense. If the world we are trying to describe is beyond traditional description – if it is too complex, too terrifying, too large, too strange, etc., to describe without losing access to that place where meaning lives – then it is only partly understandable. “By means of its conventions of depiction, temporality, and, ultimately, closure, narrative here seeks to ‘realize’ a certain formulation of the world. ... a world which ‘works’.”⁸ In other words, stories are always attempts to create another world, but a world that functions like ours. They must be believable somehow, and the act of making them work like ours is how they become so. Whatever is occurring, in the construction of our world within ourselves, is also at work in the construction of narrative. Studying narrative, and that miniaturization or gigantification of the world in a story, is therefore to study the way we perceive the world.

The complexity of the world means it can never be fully held in the imagination. Jonathan Crary, writing about Benjamin, states that this subjective, modern perception creates a kind of confusion: “Perception for [him] was acutely temporal and kinetic; he makes clear how modernity subverts even the possibility of a contemplative beholder. There is never a pure access to a single object; vision is always multiple, adjacent to and overlapping with other objects, desires, and vectors.”⁹ The idea that perception takes place and that meaning is constructed in the observer risks removing it entirely from the shared experience of culture, representing a further break from the kind of vision that Alpers describes (above). Instead, this shift solidifies the experience of the individual and places authority in the realm of private experience, drawing the discussion of perception away from one in which objective truths can be shared: “Once vision became located in the empirical immediacy of the observer’s body, it belonged to time, to flux, to death. The guarantees of authority, identity, and universality supplied by the camera obscura are of another epoch.”¹⁰ While the vision of empiricism co-evolved with a deeper understanding of the mechanics and biological understanding of seeing, it also contributed to the separation of the human subject from the exterior world, and to the individualization and interiorization of experience discussed by Stewart. As the world became more trustworthy, it simultaneously became more distant.

3. Scale and Perception

If the interiorization of the subject created distance from an all-knowable world, then the development of the concept of the region and the rise of aerial photography toward the end of the industrial revolution is noteworthy. The camera and powered flight made possible a new kind of conception of the world, and a major jump in scale. As Sonja Dümpekmann writes in her book, *Flights of the Imagination*, there was, for hundreds of years preceding, a search for “total knowledge about ... towns,” and a desire to be able to represent them accurately and with context in order to celebrate their place and power.¹¹ The example of Jacopo de Barbari’s famous woodcut of Venice, circa 1500, illustrates this well. The enormous image was produced pseudo-planometrically, working from well-documented surveys on the ground of the plan of Venice and extrapolating upwards. The well-simulated oblique aerial view, achieved well before balloon flight in Europe, was filled in with an insertion of imagination and observation of buildings. As photography, balloon flight and, later, powered flight made it possible to accurately photo-map entire regions, an expansion of the idea of landscape occurred, but one in which the distinction between the human subject and the landscape object grew.

In becoming more familiar with views from above, and from ever more extreme altitudes, designers and mapmakers began to experience the Earth as more and more of a map: a two-dimensional, or at least a relief, representation of the world. This development did not escape Benjamin’s keen eye:

“The force exerted by the country lane varies according to whether one walks along it or flies over it in an aeroplane. ... The person in the aeroplane sees only how the lane moves through the landscape, unwinding in conformity with the laws of the surrounding terrain. Only someone walking along the lane will experience its dominion and see how, from the selfsame countryside as for the flyer is simply the unfolding plain, at every turn it summons up distances, views, clearings, and outlooks.”¹²

Jacopo de' Barbari's bird's eye view of Venice (detail).

Here, Benjamin is getting at the perceptual action that takes place when engaging closely with the landscape object. The action takes place in the observer, not in the landscape or the text: by engaging fully, slowly, the person moves themselves into a state of understanding. Meanwhile, the aerial view's distancing from the experience of landscape makes the Earth seem more "conquerable ... Even from a shaky balloon still largely at the mercy of nature's forces, the landscape and its nature no longer appeared as a threatening wilderness. On the contrary, the conquest of the air made the conquest of the land seem more possible."¹³ In effect, the miniaturization of the landscape both breaks the distinction by making it intelligible and distances the observer further still. How could a vertical point of view – a view with no perspective or human experiential component – be considered a truthful or objective way to view landscapes and cities? This assumes some kind of a godly view, or a view from nowhere, that surpasses the human eye in its ability to perceive the truth, the reality. By providing distance between subject and object, the aerial view allowed the conceptualization of entire neighbourhoods within an image, and the collage techniques that visualized huge developments in urban and landscape areas. These were the visualization and proposal of very large constructions, but also were the imagination of construction within context. The aerial view "acknowledged that a design was always part of a larger landscape,"¹⁴ supporting a new epistemology not just based on facts and observation but on the recognition that they held a relationship to propositions. In other words, that "truth" in landscapes requires a subject in addition to the landscape object.

The separation of the subject and object and its parallel separation of human from landscape enabled its growth as an object of unintelligible gigantism. By being made gigantic, it hides in plain sight, unintelligible. Stewart writes that the gigantic was historically a mythical thing invented to expand what is possible in the imagination – to expand the box of imagination discussed earlier. Historically, giants moved rocks that would otherwise have no explanation for their appearance, or giants ate the unfathomable leftovers on feast days. The gigantic is a means of symbolizing and is a manifestation of the boundaries of the imagination. However, in the advent of mechanical reproduction (modernity) the gigantic plays a new role, where its “mode of being concrete is precisely [its] abstraction.”¹⁵ This cryptic argument can be illustrated by the parade, for instance, whose power derives from the observer’s distance from the display, as staying by the sidelines and never seeing the beginning or end of officially-sanctioned symbols. More recently this abstract gigantic moves into the realm of the commodity, where the mechanisms of history (i.e. the goings-on that produce society, materials, and culture) are entirely removed from lived experience, resulting in the magicalization of the gigantic and the “masking” of the entire “apparatus” of class relations.¹⁶ The major social, industrial, political systems of the modern world are so enormous and complex as to be understandable only if abstracted into symbols, and understood as giants.

A 1940 aerial mosaic of Southern Florida from the United States Geological Survey.

Attempts to access the gigantism of landscape and metropolis reflect a bridging between subject and distant object that has resulted in a number of significant moments in the history of landscape and urban design. The Outlook Tower designed by Patrick Geddes in Edinburgh, Scotland, reflects an acknowledgment of the dawning gigantism made possible by aerial photography and the new paradigm of seeing. The tower was a processional journey through scales, taking visitors with a journey through scales not unlike Kees Boeke's 1968 film *Powers of Ten*. Topped with a camera obscura, the tower showed visitors a miniaturized moving image of the city, before bringing them down through levels with exhibits on Scotland, Europe, and the World, ending in a return to street level and to the familiar scale of human experience.¹⁷

Edward Burtynsky, *Coal Mine #1*, North Rhine, Westphalia, Germany (detail), 2015. Edward Burtynsky's photographs attempt to bridge the gap between the gigantic and the imagination by immersing viewers in the scale of huge, global industrial and environmental artifacts, with the goal of spurring discussions around environmental degradation. This photograph of a strip mine in Germany pushes the boundaries of the human imagination, priming discussion of issues of enormous scale.

Other struggles to reconcile the scale of gigantic (metropolitan) landscapes with human experience resulted in the development of Holism and landscape ecology, and enabled the large-scale analytic thinking required for systems of huge complexity that change over time, such as forestry and geology.¹⁸ Indeed, the distance between subject and object landscape is, in some cases, surmountable, and must be in order to make the largest systems intelligible to landscape and urban designers. Stewart writes that although gigantic monuments might tap into the boundaries of the intelligible, a privileged understanding is granted if one is given the chance to climb inside them—i.e., the Eiffel Tower, the Statue of Liberty.¹⁹ The work of contemporary landscape artists such as Edward Burtynsky straddles this space, attempting to provide access to it by immersing the viewer in gigantic systems and global-scale phenomena with large format aerial photography.²⁰ If one can climb inside the mechanisms of today's largest systems and be granted a vista, it is possible that they might be given glimpses of what is otherwise invisible.

Charles and Ray Eames' 1977 film *Powers of Ten* takes the viewer on a visual journey through scales. A square frame multiplies by orders of magnitude in what it contains, first zooming out from a picnic to the cosmos, then zooming in from the picnic to the subatomic particle.

Conclusion

The distance between the limits of the human imagination is not the same as the limits of human perception—but negotiating this difference is a fundamental consequence of the increasing complexity of our world and the expanding vastness of our systems. Modern giants (the economy, the government, science, climate change) occupy abstracted, distant places in our imaginations. They are unintelligible to most people. Because of the inaccessibility of experience of the gigantic, it is possible to perceive it as a lie: “The gigantic envelops us, but is inaccessible to lived experience.”²¹ Those systems occupy physical space that is equally abstracted, distant, forbidden, or too fragmented to be visited and experienced. To climb inside spaces of the gigantic is to offer insight into those systems, and to offer opportunity to learn their mechanisms.

This paper suggests opportunities may exist to inhabit modern giants through an architectural intervention that acts with understanding of the history and mechanisms of our culturally constructed distance between subject and object. Built as an educational apparatus or as a means of shifting perception in a similar way to Geddes’ outlook tower, such an intervention might serve to form connections to the modern giant. Working toward such a design, the author mapped the perception of areas around the port of Rotterdam in the Netherlands in September 2019 (following pages). The map measures the relative size of an oil refinery flue gas stack as seen from a distance and studies the relative dimensions and shapes of built forms in the field of foreground and middle grounds, as well as the shape and size of very large forms at a distance. It suggests a disconnect between the universal visibility of very large infrastructure and its relatively inaccessible nature. The oil infrastructure that is the focus here is as pervasive as the horizon, and yet recedes infinitely, an abstracted monument whose function is hidden.

Patrick Geddes’ Lookout Tower, Edinburgh. The tower was a processional journey through scales, leading visitors on a journey through scales from the scale of the city, through the region, nation, and the world, ending in a return to street level and the familiar human scale.

Distances from the gigantic today offer myriad challenges in their separation from everyday human experience, becoming abstracted to the point of being unnoticeable backgrounds. But understanding scales may be as important for non-experts as it is for those who trade in scale, such as regional planners and infrastructure engineers. Although they are usually dismissed as giants and mythologized, understanding large systems is an important part of the experience of being in the world today, and is crucial in order to take hold of the existential issues we face in the near and distant future such as climate change, resource scarcity, and a globalized economy. Future research and design proposals might investigate the role architecture can play in framing scales and establishing a more intimate connection with change in large infrastructural systems.

Visibility of a 213-metre flue gas stack.
(Legend on the following page)

①

②

③

④

⑤

⑥

Foreground, middle ground, background or field/edge/horizon.

Map by the author (preceding page) showing the visual size of a 213-metre flue gas stack in the Pernis area of Rotterdam, Netherlands. The stack is visible as far as 5km away, translating to approximately 15 minutes' ride by bicycle. With only other very large objects close by to compare to for scale, the stack's scale, and the scale of this industrial landscape by extension, are difficult to understand. An intervention like the Geddes Outlook Tower on the site might allow understanding of this infrastructure and its relationship to nearby Rotterdam and the European hinterland beyond.

Endnotes

- 1 Svetlana Alpers, *The Art of Describing* (Chicago: University of Chicago Press, 1983), xi.
- 2 Alpers, *The Art of Describing*, 27.
- 3 Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, Massachusetts: MIT Press, 1990), 29.
- 4 Crary, *Techniques of the Observer*, 40.
- 5 Walter Benjamin, *One Way Street and Other Writings*, trans J.A. Underwood (London: Penguin, 2009), 81-2.
- 6 Benjamin, *One Way Street*, 84.
- 7 Roland Barthes, *Camera Lucida*, trans. Richard Howard (New York: Hill and Wang, 1981), 9-15.
- 8 Stewart xi-xii
- 9 Crary, 20.
- 10 Ibid, 24.
- 11 DümpeImann, 88.
- 12 Benjamin, *One Way Street*, 52.
- 13 DümpeImann, 82.
- 14 Ibid, 92-99.
- 15 Stewart, 84.
- 16 Ibid, 85
- 17 DümpeImann, 109.
- 18 Ibid, 105-6.
- 19 Stewart, 90.
- 20 Edward Burtynsky, "Life in the Anthropocene," in *Anthropocene*, by Burtynsky, Baihwal, and de Pencier (Göttingen: Steidl, 2018).
- 21 Stewart, 102.

Image Credits

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