

Insight from the Inside: An Auto-Ethnographic Account of Design Synthesis in Landscape Architecture

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Abstract

This article investigates how moments of synthesis occur in a design process, since “synthesis” is a suggestive, yet ambiguous term. Due to this ambiguity, we require further investigation. The case study is the development of an integral landscape architecture vision for a municipality in Dutch Southern Limburg. The method used is auto-ethnography, or the description of design activities from a first-person viewpoint, which provides as it were “insight from the inside” by the designing mind. This method has the advantage that design thinking moves can be directly documented by the researcher-designer. Three specific drawings have been selected for analysis, as the processes of making them highlight how synthetic activities play out in the design process and how they influence thinking. This article identifies three moments of synthesis and highlights the contributing factors for each of them. One finding is that synthesis may be framed as the dynamic adaptation among design elements rather than an act of unification or assembly. The concluding section also critically reflects on the value of auto-ethnography for such processes and suggests further avenues of research.

Keywords

Landscape Architecture, Design Thinking, Auto-Ethnography, Design Sketching.

Introduction

Models of design processes are usually intended to clarify how ideas develop. They trace how inputs lead to outputs, how contents are structured and how we may distinguish between various process stages. They often introduce a phase that eludes precise modelling: the way in which ideas come together. For example, in the design model of the Stanford D. School (Doorley et al., 2018), this moment is framed as the *ideation* phase. The implication is that inputs that have been gathered transform into something qualitatively different. A different version of the same thought has long been used in design theory and goes by the term *synthesis* (Pressman, 2019). The act of synthesizing is framed as a qualitative leap by which disparate elements and ideas cohere into a meaningful whole. This notion surfaced quite early on in the formulation of analysis-synthesis models. The first generation of design theorists framed synthesis as part of a design-theoretic process (Eastman, 1969; Newell, 1979). The general idea was that heuristic thinking produced variations, while synthesis narrowed down the range of ideas in order to progress to the next phase in the process (Rittel, 1970; Rowe, 1987; Goel, 1992). At least until the 1990s, this idea can be found in the literature, although by the early 2000s (Lawson, 1979; 2005), the reliance on analysis-synthesis models was critically questioned (Bamford, 2002).

More recently, the RIBA double-diamond model uses the term *develop* to convey the idea that out of various contents, an integrally designed whole must be developed (Taylor, 2021). Also recently, data-driven design approaches have made the seamless synthesis of new forms their staple: out of a bulk of data, many options can be parametrically synthesized.

Design thinking succeeds in bringing widely diverging ideas and notions together – a theme conveyed by the original double diamond model that focuses on alternating episodes of convergence and divergence (Banathy, 1996). This can even be viewed as one of its defining characteristics. The definitional disadvantage is that terms like *ideation*, *synthesis*, *development* and the like obfuscate as much as they explain. They are appealing because they catch something of the integrative potential of design thinking; yet, they tell little about the precise dynamics of this process.

First, what in many models is depicted as a phase or moment is in reality a distributed process. Many design models compress the process too much, and confine *synthesis* to a single moment.

Second, the term *synthesis* itself is ambiguous. In different contexts, it might mean different things, for instance, *integration*, *recombination* or *assembling*. While two different models may use the same word, the actual intended meaning may be quite different. Also, is there even a single type of synthesis, or are we speaking about multiple syntheses?

This article aims to explore the *moments of synthesis* in design processes via the method of auto-ethnography. This methodology is explained in the next section.

Methodology

During the past decades, there has been a gradual turn towards ethnography and auto-ethnography in design studies (Chang, 2016; Munro, 2011; Siegenthaler, 2013; Schouwenburg & Kaethler, 2021). The ethnographic method allows for observing design activities as a cultural practice or cultural technique (Farias, 2013; Gethmann & Hauser, 2009). Ethnography frames designing as a process that can be mapped and interpreted from either a first-person or third-person perspective. From an ethnographic viewpoint, artistic as well as design cultures can be investigated as *thinking collectives* (Fleck, 1981; Siegenthaler, 2013) or as *epistemic cultures* (Knorr-Cetina, 1999). Such cultures provide a relatively stable working environment that can be observed. Auto-ethnography is the first-person reflection on design processes. This procedure has the advantage that the researcher does not need to interpret the subtleties of the process from a third-person, external perspective.

Borrowing a concept from the philosophy of mind, researchers have a degree of *privileged access* to their cognitive states (Davidson, 1987; Heil, 1988). Although researchers must interpret certain choices and connections, at least they have a degree of direct acquaintance towards their mind. Auto-ethnography opens up the road to interpretations that cannot be made by those who do not belong to a certain *epistemic culture* (Forsyth & Copes, 2014). This is significant when it comes to studying the notion of synthesis in design processes, as the cognitive processes involved in designing are partially mental and partially belong to a *design culture*. Put more concisely:

Rather than deny or separate the researcher from the research and the personal from the relational, cultural, and political, qualitative researchers embraced methods that recognized and used personal-cultural entanglements. After all, as researchers, we are interested in exploring and understanding the experiences that have salience in our lives, whether these experiences thrill, surprise, intrigue, sadden, or enrage us (Adams et al., 2015).

In architectural theory, the auto-ethnographic method has been already used for quite some time, although the label *auto-ethnography* has never been applied to it. Yet, a significant amount of theory that we possess derives from documenting personal experiences, guidelines, experiences and lessons learned, and not from targeted studies or systematic reviews. For example, the writings of Le Corbusier, Louis Kahn, Peter Zumthor or Juhani Pallasmaa are highly personal and idiosyncratic, and they have immense value as a source of information on design methods. Moreover, the drawings, models and ideas that designers produce are *artefacts*, forming the material output of an epistemic culture centered on architectural design (Chang, 2016). While much research in architectural design theory has been focused on *reading meanings* into artefacts, the process of analyzing them from a first-person perspective has been studied less systematically. If it was studied at all, it was often in the form of protocol studies, in which designers verbalized their thoughts, as researchers took notes (Goldschmidt, 1991; 1992; 2017). However, using so-called *anthropological language* makes it possible to approach designed artefacts in a more personal, immersive manner (de Certeau, 1988; Paans & Pasel, 2020).

One important reason to value the first-person perspective is that designing is an inherently embodied activity. It involves rational thought, affect, gesture, and imagination. All these modes of thought shape design thinking (Hanna & Paans, 2021). It follows that materials documenting these various modes provide a rich source of information that is layered, connective and multi-modal. This has the advantage that moments of design synthesis can be explored in-depth and are not oversimplified or reduced to overtly abstract models.

Right away, the objection can be made that this method is inherently subjective and may therefore lead to outcomes that are either biased, and/or formulated in terms that are difficult to interpret. To this twofold objection, we can respond as follows:

a. As has been extensively established in the sociology of science, every investigative process contains elements of subjectivity (Latour & Woolgar, 1986). This is not problematic, as long as this is recognized, and efforts are made to report as unbiased and clearly as possible. Indeed, for design thinking, subjective situatedness may even help to orient oneself towards a problem (Buchanan, 1992). For example, subjective elements in design processes include decisions on which spatial concepts to develop; what materials to consider; or which functional layout to select. All these decisions are not only made on the basis of data or even rational thinking. Emotion, preference, previous experience and intuition are part and parcel of them. Moreover, in the case of designing, it is the designer's body and mind that are committed to the task. At least part of the design activities can only be experienced from a first-person viewpoint. Even in cases where design researchers have engaged in protocol studies while test subjects verbalized their thoughts, researchers had only access to the thoughts and ideas that test subjects could put into words. This excludes hunches, vague intuitions, non-conceptual contents, sudden episodes of insight or inspirational moments.

Above all, the first-person form is not strictly autobiographical:

The I is less biographical than it is instrumental. It detects and selects: differences, and semblances. It is shaped by the environments from which it unfolds and to which it responds. It affects. It is affected (Roberts, 2019).

The *first-person viewpoint* is the perceptual lens through which we apprehend the world. We use our perception to select and discern; as such, it makes methodological sense to examine this process from as closely by as possible.

b. Regarding, we can respond as follows. In all communication, care should be taken to engage with existing theory and to strive for maximum clarity. The minimum target for reporting experiences should be to foster understanding, to enable engagement in *discursive pragmatics* (Girard & Stark, 2002) or to enable *epistemic dissonance* (Farias, 2013). Findings and ideas must be framed in such a way that a reasoned, collective process of discussion always remains possible and generalizations can be straightforwardly drawn. The very idea of a *thinking collective* or *epistemic culture* critically hinges on the idea that findings are shared and discussed among a group of individuals who share broadly similar backgrounds, outlooks and frames of reference. An epistemic culture involves not only human actors but also materials, methods and norms of evaluation. Together, they form a *culture of practice* (Munro, 2011). Critical reflection is thus possible because auto-ethnography *seeks to form an explicit connection between the personal and the cultural, achieved by providing an honest account of the sense-making processes that underpin cultural practices* (McLaughlan & Garduño Freeman, 2020).

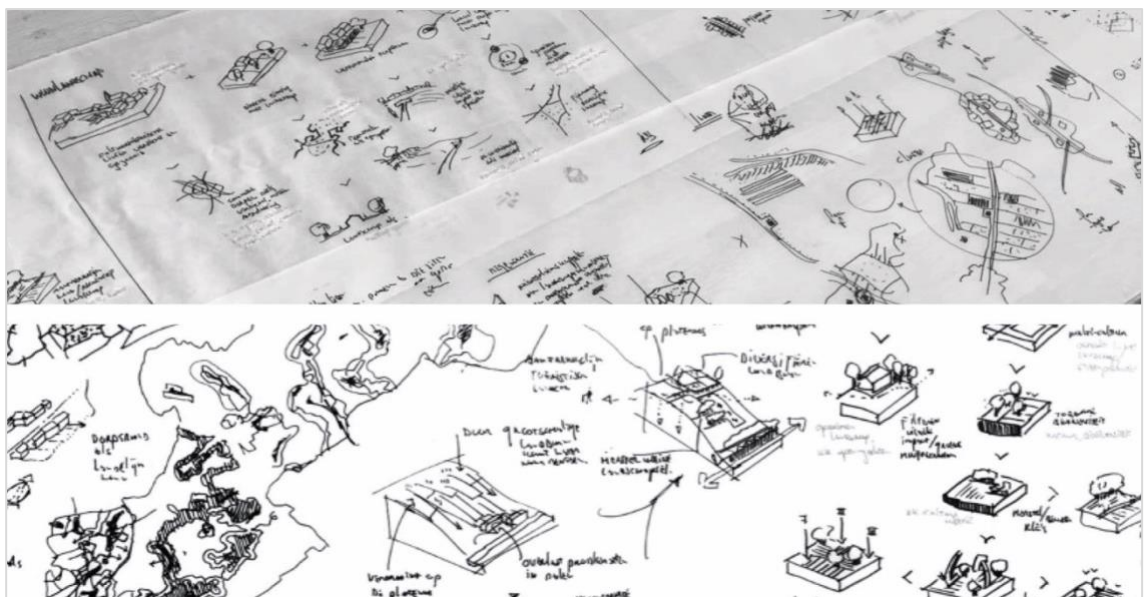


Figure 1: Selection of sketches and drawings of the design process.

This article presents the analysis of a series of sketches and digital visuals that were made during an 18-month design process at a landscape architecture office (Figure 1). The entire collection numbers over 250 sketches and over 150 digital drawings, of which a selection is discussed here. Through auto-ethnographical reflection (that is, descriptive reflection from a first-person viewpoint), I analyze these sketches as an author, researcher, and landscape designer. I attempt to highlight the different ways in which design thinking synthesizes ideas. Instead of creating yet another new design model, I'd like to shed light on the notion of *synthesis*. When we routinely use this term, what does it mean? Or, more speculatively, what could it mean – in the sense that it provides us with new and effective ways to conceptualize design thinking?

In particular, how does auto-ethnography enable us to understand the transformations that occur in landscape design processes? Of course, we should keep in mind that *what makes auto-ethnography ethnographic is its intent of gaining a cultural understanding* (Chang, 2016).

In this case, it means that we aim for understanding the inner workings of the epistemic culture of design. This auto-ethnographic analysis introduces three types of synthesis that I encountered during the design process. Each type is discussed through a first-person, auto-ethnographic description and is followed by a methodical discussion that aims to generalize and interpret the insights obtained from the first-person viewpoint (Figure 2).

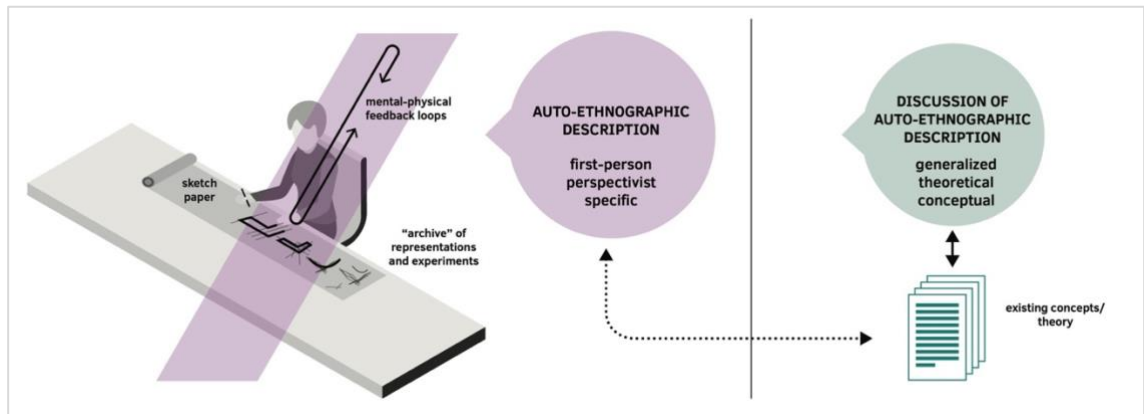


Figure 2: Relation between sketches, auto-ethnographic description and discussion.

In this manner, we avoid the objection that personal insights are not sufficiently generalizable, but we can still benefit from *insight from the inside*. It should be remarked that there may be more possible types of synthesis, so this article makes no claim of completeness.

Case Description

The municipality of Beekdaelen is one of the 16 municipalities of Dutch Southern Limburg. The region has a unique landscape: it is characterized by hills and is an exception in a country known for its open, flat landscapes. The landscape features are legally protected, and the entire area is a National Landscape. Beekdaelen municipality has only been formed recently by merging three smaller municipalities (Figure 3). Due to this unification, it is now the largest rural municipality in southern Limburg. Moreover, the unification of three formerly separate territories means that it encapsulates various so-called *landscape typologies* (plateaus, slopes and valleys).

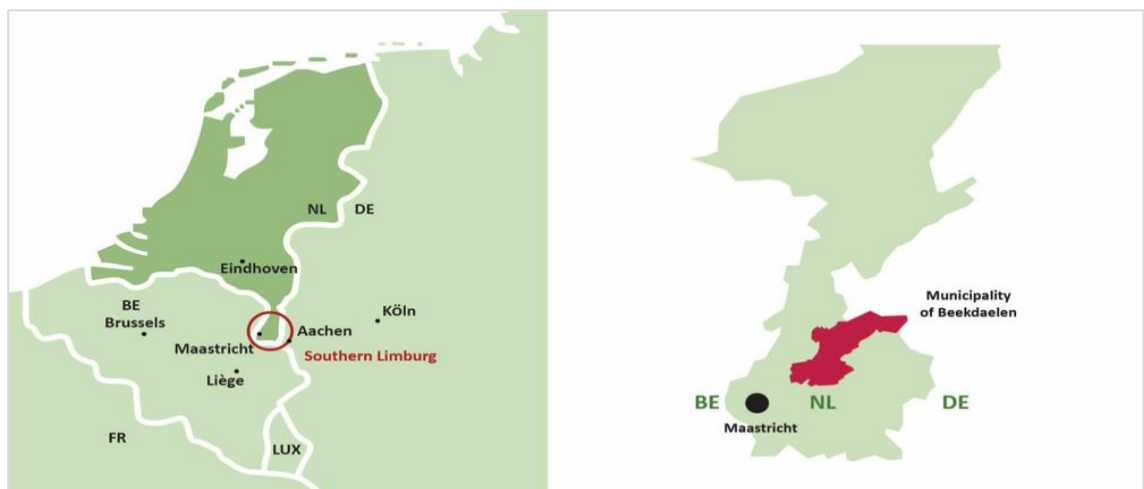


Figure 3: Location of Southern Limburg and the municipality of Beekdaelen.

Insight from the Inside:

This trilogy is the foundation for understanding the landscape (Figure 4). Currently, climate change, consequences of prolonged drought and flooding, pressure from tourism, natural habitat fragmentation, the agricultural transition, the nitrogen emission crisis, eutrophication and the move towards renewable energy production all exert pressure on the integral biophysical landscape system and the typical spatial appearance (Figure 5). Taken together, this complex of issues forms a classical *wicked problem* (Rittel & Webber, 1973; Simon, 1973). There is no single viewpoint to approach any solution; nor is it always desirable to have one. However, the agents who are responsible for solving these issues are also causing them (Levin et al., 2012).

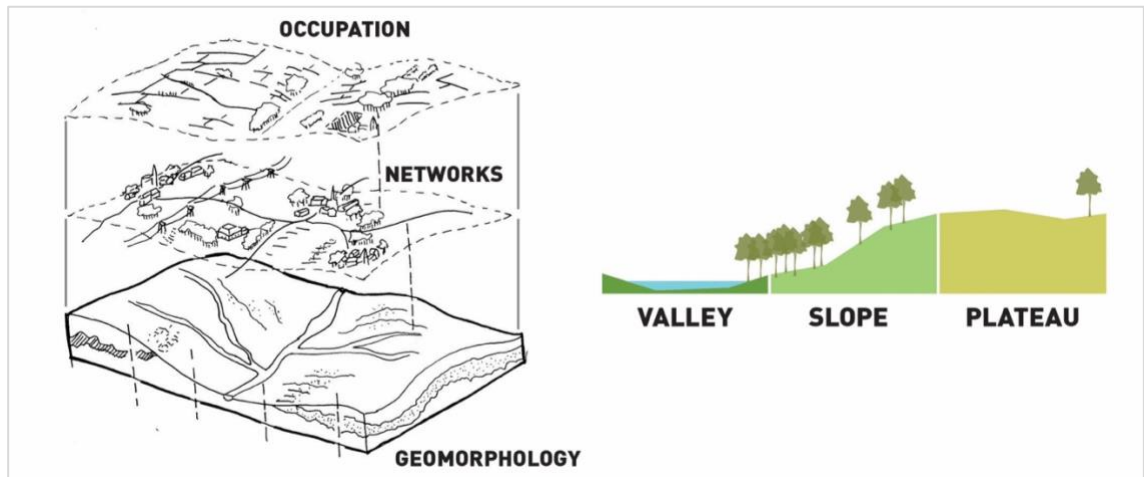


Figure 4: Layered structure of geomorphology, networks and occupation (left) and the three landscape typologies (right).

Due to a new law (*omgevingswet* or *environment law*), every municipality and province is required to formalize its future goals in various areas (agriculture, tourism, housing, water management...) in an integral vision document. These documents are often preceded by a more general *landscape vision* which does not define binding goals but determines developmental directions and tendencies. For example, regarding the agricultural transition towards more sustainable business models, a landscape vision may suggest new agricultural practices and may also suggest – based on landscape features – where such initiatives could be implemented. If this measure is accepted, the environmental vision determines precise locations where such practices are implemented.



Figure 5: Typical view of the landscape in Southern Limburg.

Insight from the Inside:

During these processes of formulating a *landscape vision* for the municipality of Beekdaelen, civil servants from different departments and stakeholders provided their (expert) inputs and expectations. In multiple collaborative sessions, the scope of the vision was clarified. Starting with an analysis of the existing spatial framework, a new vision was developed and presented to civil servants and policymakers. This vision was influenced by issues that arise because of:

- a. How the landscape is currently structured in terms of functionality and use.
- b. Ambitions and upcoming transitions that have been identified in new policies.

Examples of upcoming transitions are the implementation of renewable sources of energy (wind turbines or PV panels), and new developments leading to circular or nature-inclusive agriculture (Figure 6).

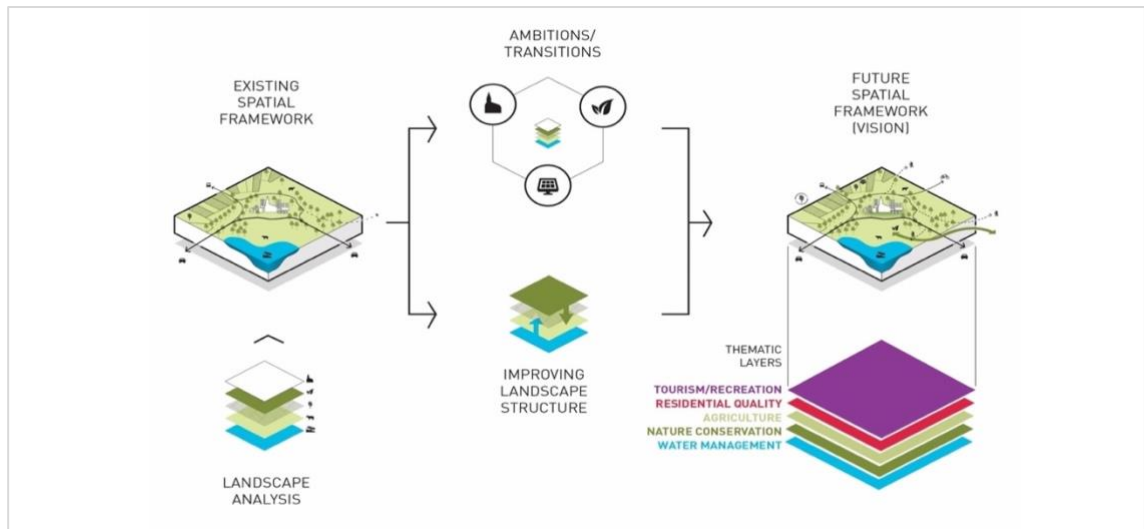


Figure 6: Structure of the landscape vision and themes.

The vision is thematically ordered into five themes:

1. Water management,
2. Nature conservation
3. Agriculture
4. Housing/residential quality
5. Tourism.

Importantly, these five themes are integrated into the overall vision. There are multiple cross-links between the theme. For instance, measures to improve the landscape’s water-retaining capacity affect agriculture and nature conservation. Our goals were to propose effective measures to generate positive effects across theme. Of course, some measures were theme-specific. For example, highlighting and upgrading a new bicycle route is a measure that is only concerned with tourism and recreation. The final draft of the document integrated all individual themes and served as input for the environmental vision.

An Auto-Ethnographic Analysis of the Design Process

This section investigates three moments of synthesis, described by using the auto-ethnographic method (sections 1.1, 2.1, 3.1), which are each followed by a general discussion and contextualization (sections 1.2, 2.2, 3.2).

1. 1. Neither Diagram nor Design: Auto-Ethnographic Description

I realized only halfway through my work that this drawing synthesized not ideas, but structures, patterns, spatial scales (i.e., village edge), parcellation patterns, and settlement structures. Moreover, I outlined some slopes as well as some main traffic arteries. My approach was to spontaneously *map out the playing field* to see what emerged, and what possibilities presented themselves.

Insight from the Inside:

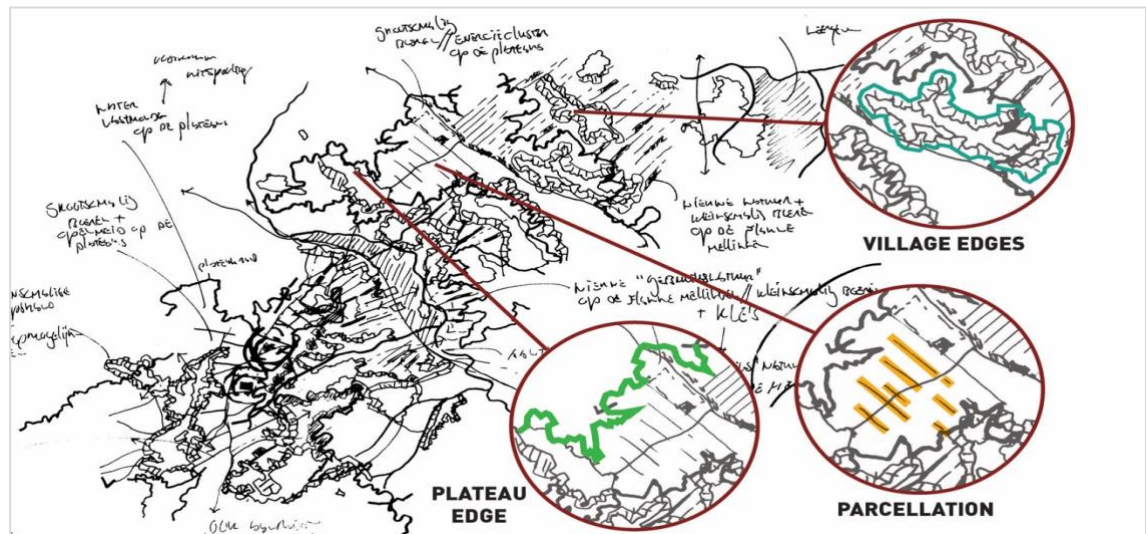


Figure 7: Sketch in-between experiment, design and diagram.

I did not even proceed very systematically, allowing for possibilities as well as limitations and synergies to emerge. The rough idea of the scale of different structures helped to loosely inspire design possibilities (Figure 7). I never intended to finish each structure, but gradually wanted to create a map in which various structures and scale levels were all equally present. The various markers that I used helped the thinking process. A medium-size 0.5 liner allowed me to trace out the meandering contour lines of a plateau in all detail. Thinner 0.1 liners accentuated the detailed and small-scale edges of villages. Even finer 0.05 marker lines depict the parcellation of the landscape and provide even indications of the elevations and the lay of the land. The character of the marker allows for thinking in a fine-grained or structural manner. What the marker allows for, the mind can follow.

The texts provide loose ideas that suggested themselves while sketching or that could be fitted into the structures while I traced them out. I linked ideas that seemed to fit the assignment to spatial features in a way that was not random, but certainly non-linear. I deliberately postponed any discussion of how and exactly where they could be implemented, as the act of drawing enabled me to spontaneously synthesize ideas. Such ideas exist as possibilities, and as making the decision was not yet necessary, I allowed multiple ideas to accumulate on a single sketch. This drawing was the basis for much subsequent thought on individual themes. When I finished the main structures, I started to classify the depicted structures in an attempt to work out what the drawing could be used for. Surprisingly, a coherence between spatial characteristics developed while doing this. To make this drawing was by turns frustrating and rewarding: on one hand, every element was open-ended and incomplete; on the other, the large number of ideas finally acquired a degree of structure. Looking back, I realized that the drawing initiated an open-thinking process. Its incompleteness and openness helped to make sense of a very complex design assignment.

1. 2. Discussion

During design discussions and the thinking process, this drawing stimulated lateral thinking and free association. The exact moment of synthesis resides in the visual juxtaposition of elements and landscape structures. The map is not strictly analytical, but synthetic in the sense that it plays off the spatial characteristics of large structures against one another. By layering different types of information, a new pattern emerges. This provides handholds for formulating precise design proposals.

This drawing is neither a diagram, nor is it a design proposal in the strict sense. It is most productively approached as a *play of affordances* that unfolds by involving many different structures. This map enables a transformation of how the design problem is understood. Drawing maps like these has little to do with solutions, but with coming to terms with a problem. Such visual representations are cognitive instruments that actively transform understanding.

Insight from the Inside:

2. 1. Synergy of Structures: Auto-Ethnographic Description

Structures come in many shapes, and interact also in many ways. One of the challenges was to balance the space claims of traffic demands, built settlements, agriculture, large natural structures, as well as connections to larger urban conglomerates. This drawing connects a few features and investigates where such structures touch and visually and demonstrates what interactions occur at their interfaces (Figure 8).

I never finished this drawing once I realized why it was effective: by drawing structures partially out I could see where they interfaced and how they gave rise to both synergy and conflict. By using different visual means (hatches, thick and thin lines, coloring), I highlighted certain structures to make the contrast between two or three structures as vivid as possible. Especially the hatching was a versatile tool, as the direction of the lines could be used to *follow* the slopes in the landscape, acquiring a mimetic awareness of high and low as well as steep and shallow features (Paans, 2024).

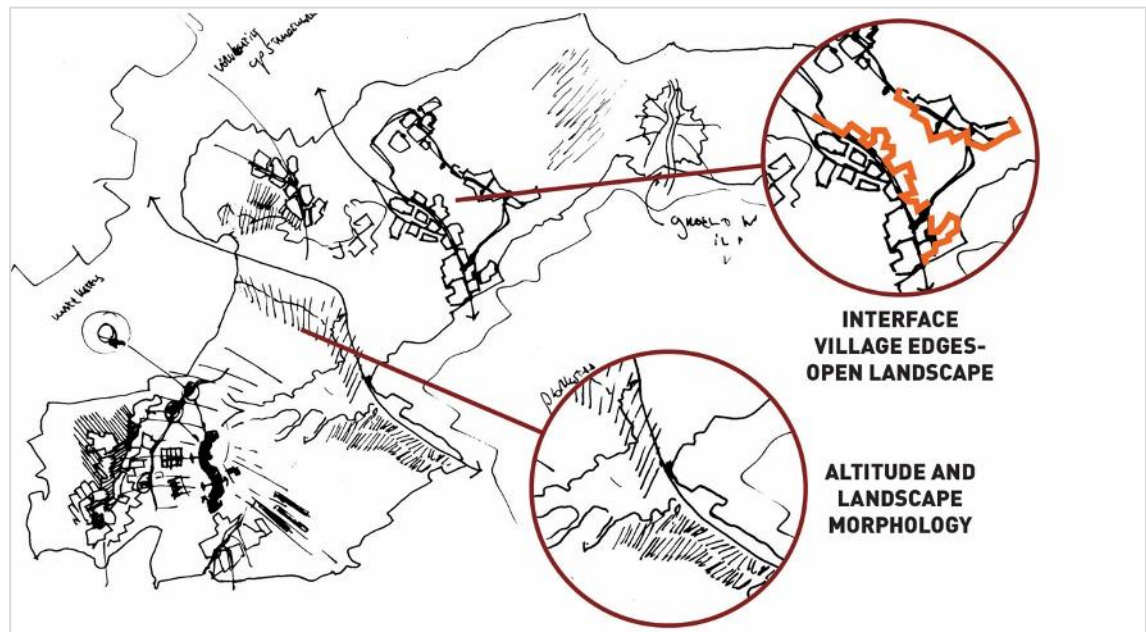


Figure 8: Sketch of interacting structures and features.

With very simple means, the drawing became for me truly three-dimensional, in the sense that I could easily immerse myself in the geomorphology. It became a space to inhabit rather than a map to look at. Once this insight developed, I could easily imagine future possibilities in a truly spatial sense. Again, the shock came when I realized what I understood – but this moment occurred only afterwards. While drawing, one has the feeling of being *on to something* without being able to state what that *something* exactly is.

2. 2. Discussion

As discussed, synthesis is not a single process step to arrive at a final design proposition. Rather, it seems like a quick way of heuristically testing out how different elements of a design work together or clash. The possibility of working rapidly was especially valuable for this design process. After all, with so many themes and issues in play, not each option can be worked out in full detail. First, this would take far too much time.

Second, it leads to a *combinatorial explosion*: the exponential proliferation of options and ideas. As architectural knowing is networked and non-hierarchical, one requires a degree of structure to bring all themes together (de Bruyn & Reuter, 2011). However, such structures are more like guiding lines or orientation points than fixed rules or rigid concepts.

Partial synthesis functions well because it limits the number of factors that are being considered. For example, the relation of planted village edges, main thoroughfares and existing green structures can be quickly mapped and analyzed in a simple sketch. As this synthesis only involves three elements, the limitations of human cognition can be taken into account, as it has been established proved that we can maximally think of five items at the same time. By deliberately limiting the scope of exploration, the relationships between design elements can be explored in relative isolation. One should not imagine that a design problem can or should be completely decomposed into its constituent sub-problems. Instead, the relation between partial synthesis and the overall narrative is one of productive and epistemic reciprocity (Paans, 2022). At each moment, one could invoke more elements or attempt to trace a partial solution back to a larger (municipal or regional) issue.

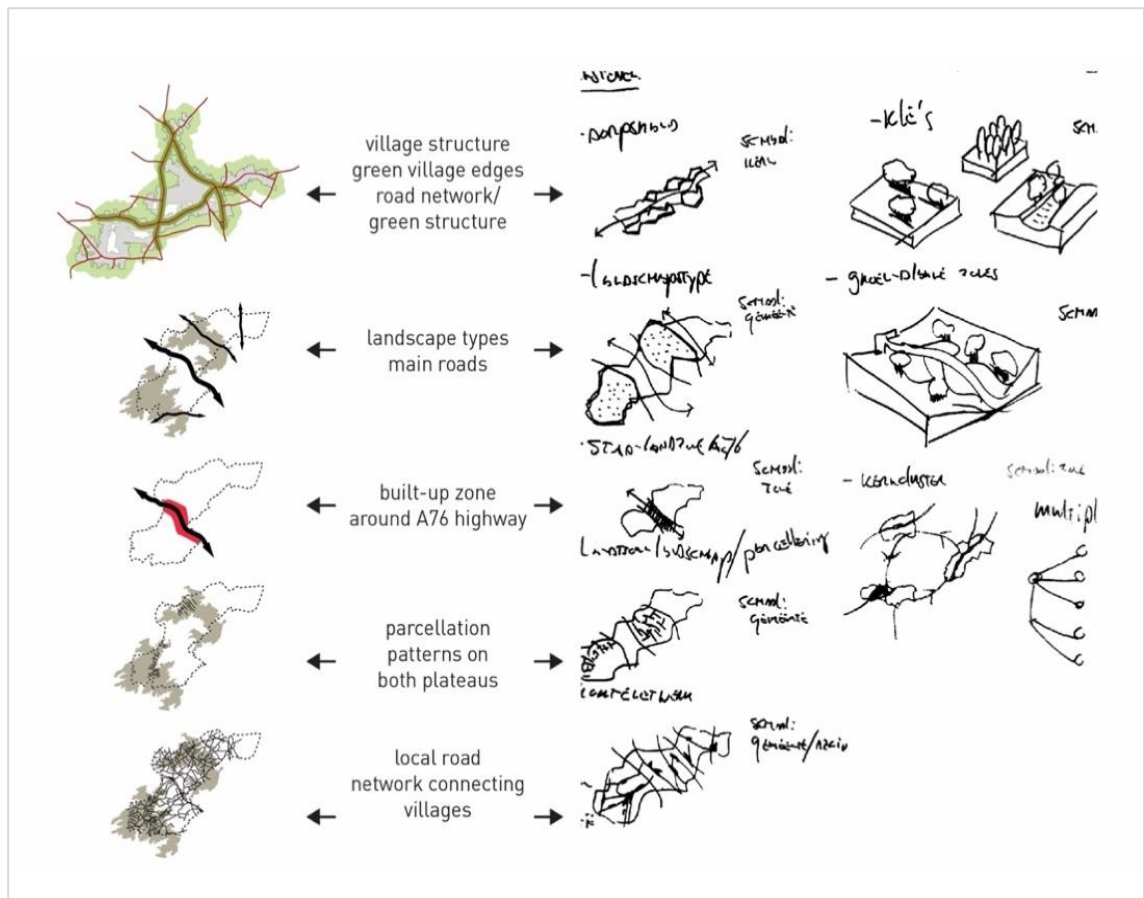


Figure 9: The various elements that play a role in the vision. The figures on the left are "illustrations" of the sketches on the right.

By representing the layers, the components that have to interact as logical puzzle pieces are all aligned (Figure 9). The map is not leading, but the influence of different structures determines what is important in each layer. So, there are no specifics (yet), but mostly large imperatives and challenges. The relative lack of detail helps to focus on the *big issues* of the overall design concept and the components of the story. Drawings of this type shift the conversations and thinking away from specific situations to structural issues. Often, from this synoptic point of view, it is possible to zoom in on concrete situations.

It is helpful to invoke John Wood's notion of *Metadesign* here (Wood, 2016). Wood's idea is that the world consists of different poorly attuned systems so that a kind of Metadesign helps to harmonize and conjoin them. Especially in landscape architecture, such Metadesign is required – but we should not forget that there must always be a connection *to the ground* as it were, as the systemic view offers a vantage point that is useful, but not complete.

3. 1. From Plan to Perspective: Auto-Ethnographic Description

The little, sketchy perspectives that I drew in between the maps served as visual experiments to understand how the landscape appears from a first-person perspective, and how different spaces (open, enclosed, hollow roads, hilltops, infrastructural connections, church towers) form a scenographic unity. This perspectival switch united all information that appears abstractly on maps into quick atmospheric sketches. These sketches were like little excursions, in the sense that they allowed for a sudden changes of perspective (Figure 10). But this perceptual shift also caused a shift in thinking. Instead of structures and arrows, details become important. Heights, widths, and subtle spatial relationships that cannot appear on a map come to the fore. By thinking through a different set of visual parameters, my relation to the design proposal shifted from observer to immersed spectator. The structures that appeared on maps as surfaces, lines or areas appeared here as discrete spatial elements with depth, meaning and architectural value. A church tower is no longer a symbol, but a point of orientation or a visible cultural-historical landmark. The abstract structures depicted on maps were now considered elements in my perspectival perception of the space. The change from the top view of the map shifts to a first-person perspective from ground level, or an isometric viewpoint. These images allow for thinking from positions that are immersive rather than analytical. The church tower of a village, the trees lining the hollow roads, the high skies above the flat plateaus...these are the things I experience and that I work with. They are the architectural ingredients that cannot be grasped via the map, but that I must bodily relate to while occupying a point in space.

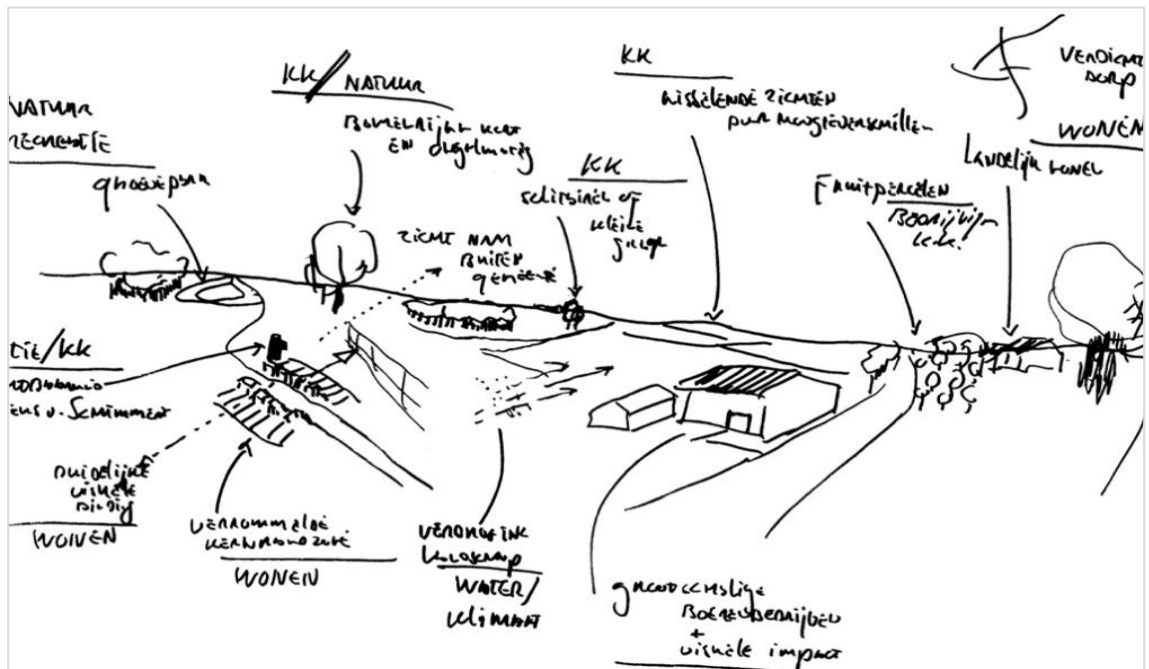


Figure 10: Perspectival sketch to visualize the abstract structures of a map in a different format.

3. 2. Discussion

In architectural design, the so-called *inhibitive imagination* (Emmons, 2019) can be exercised in various ways in perspectives or isometric representations. The perspective allows for imagining how various structures and spatial interventions can be scenographically related, as it allows for depicting scenes right after another or side by side. The isometric view, by contrast, allows for inhabiting an intermediate position between map and perspective, as it involves three dimensions, but no vanishing point. Drawings like these shape and open up thought processes centered around possible narratives that relate space to functions and users. As these drawings are more easily readable, they can be used to weave a story that will be presented to the client. As such, they serve also as a *litmus test* for the presentation, if only to check whether it is possible to conjoin disparate themes into a single coherent storyline.

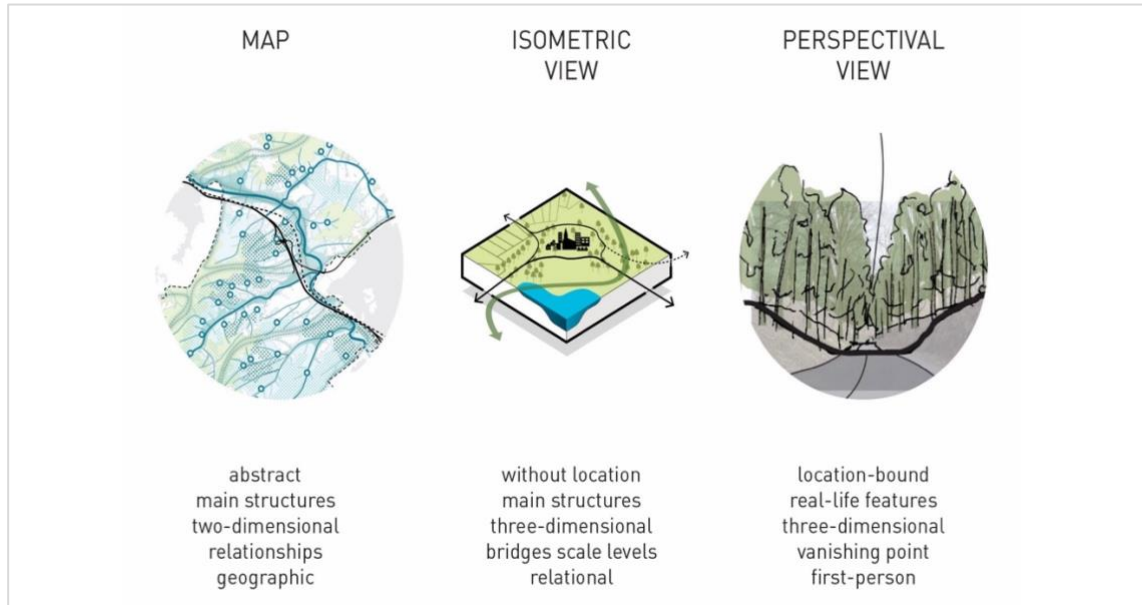


Figure 11: The contrast between three forms of representation: map, isometric view and perspective.

Additionally, the resulting design can be inhabited from different user perspectives: what features will appeal to the farmer as opposed to the tourist or resident? By inhabiting the viewpoints of various users, the proposed measures can be evaluated from various viewpoints, each with a different emphasis. These drawings allowed me to switch from large challenges to the experiential and atmospheric quality and appearance of the spaces that come into being. Large issues are best approached via the abstract representation that maps afford, but once I wished to investigate their spatial consequences, I represented them either isometrically or via perspectives (Figure 11). This allowed me to approach them not as large developments or abstract information, but as spatial phenomena that exert a real-life impact on a given location.

Conclusions

From the above auto-ethnographic descriptions and discussions, we can conclude the following;

First, auto-ethnography as a descriptive instrument requires rigorous self-observation. One must pay attention to the smallest of details that determine one's design thinking processes. Often, when uncertain about which information to include, it is useful to critically ask *Did this detail influence my thinking?* If the answer is *yes*, then it can safely be included, as it indicates a deep impact on the design thinking process. An example is the difference between markers: as each marker has a different *feel* while drawing, it provides certain possibilities, for instance, detailed hatching or tracing a very detailed line. The gestural connection between the brain and hand influences thought processes and thereby influences decision-making.

Second, I discussed three moments of design synthesis: the visual juxtaposition of elements and landscape structures (1.1); partial synthesis limits the number of factors that are considered (2.1); visually combining architectural ingredients that cannot be grasped via maps, but that one bodily relates to while occupying a space (3.1). What experientially occurs in these instances is quite different. In all cases, however, we deal with adapting the elements of an overall design assignment relative to one another. This process does not unfold sequentially but proceeds non-linearly. This suggests that when we use the term *synthesis*, we refer to a process of *adaptation among elements*. However, a more precise and elaborate taxonomy of such operations is required to fully uncover what the term *synthesis* includes. More importantly, all this suggests that drawing has little to do with visual representation *sensu stricto*. The drawing is like the creation of a thought environment in which design cognition can freely operate.

Through such embodied, gestural and visual navigation of relevant issues, the understanding of the problem is transformed through drawing. The drawing surface becomes as it were a habitat for thinking, while the resulting sketches jointly form a transcript of that thinking process.

Third, the practice of auto-ethnography could play a positive role in design education. By having students systematically engage in self-observation, they might acquire more control over the processes that shape their thoughts, as well as insight into what inspires their design choices, or what impedes effective design thinking. By occasionally dissociating from the design process, it can be evaluated as a whole, and serve as a means of critical reflection and self-evaluation.

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