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Sketching and Repetition - A fundamental base in the procedural theory mindset

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Introduction

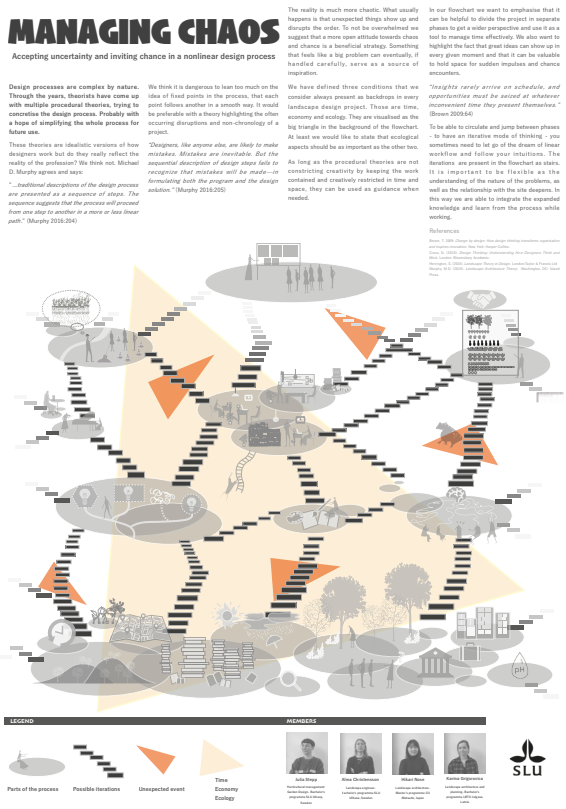
Procedural theory aims to describe and explain design processes. In this factsheet, the focus is on clarifying the individual sketching procedure and mental activity during the process. The transformation during the various phases may move from a broad context to detailed facts. According to Cross (2018), a frequent shift in attention or activity mood may influence the quality and overall result. This factsheet shows some examples of the design process, and focuses mainly on personal mental activities in relation to sketching and doodling for, e.g., long-term memory, and as a fundamental base for a successful process.

The course *Urban Landscape Design* (LK0400) is a bachelor's level course focusing on design of urban green spaces, offered at the Swedish University of Agricultural Sciences, and run by the Department of Landscape Architecture, Planning and Management (LTV faculty). The course is run as a stand-alone course for national and international students and as a programme course in the Landscape Engineer Programme at Uppsala and Alnarp, and in the Garden Design, Landscape Engineer Programme at Alnarp.

The course considers elements that, in various ways, affect the interaction between analysis and development of methods and concepts through studies of design theory, from sketching and doodling to the final design proposal. Landscape visualisation is an important theme throughout the course, and helps to increase the student's awareness of the interplay between contextual relations and concept development. The students are encouraged to apply experimental approaches, where analyses and evaluation are mixed with theoretical reasoning. The main aim of the course is to use different ways of working with design in the urban environment, and – supported by design theory and good examples – apply, document and present design processes, both individually and in group work.

This factsheet is the product of the students' work with *Procedural Theory* in the course Urban Landscape Design during the spring term of 2023. The aim of the assignment is to reflect on and communicate urban landscape design working processes, by studies of procedural theory. The assignment considers elements that, in various ways, affect the interaction between method development, analysis and conceptual statements, from sketching processes to the final design proposal.

The following abstracts and poster presentations present the students' thoughts and reflections through visualisations and descriptive text, and show an attempt to verbalise the sketching and doodling steps/phases and related mental activity during the design process. The assumptions made and described in this factsheet are based on literature studies of procedural theory, as well as on the students' previous experiences of the design process and through individual and group reflections and discussions.



Managing Chaos
Accepting uncertainty and inviting chance in a non-linear design process

By Alma Christensson, Katarina Grigorovica, Hikari Nose, Julia Stepp

As students of Landscape Architecture, Garden Design and Landscape Engineering we are discovering the immense complexity of the field we are about to enter professionally. Landscape architecture and, above all, design is a complicated field because it requires multiple skills, and it is important to learn not to be overwhelmed by the challenges.

Reading the texts about procedural theory has made us understand the creative design processes and encouraged us to reflect on the subject. In some of the texts we could sense there has been a dream, perhaps still lingering, to create a chronologically grasp-

able process consisting of easily definable steps leading smoothly from one phase to the next. How wonderful and comfortable that would have been for us when undertaking a design task! However, the theory often does not represent the true reality of a design process. It poses an ideal situation perhaps meant to inspire or to give the field academic approval and legibility. As long as the procedural theory does not constrict creativity by confining and restricting the work in time and space, it can be used as guidance when needed.

As a group we see the importance of gaining an insight about how different theorists have examined the nature of the processes involved when a landscape project is being imagined and visualised. The benefit of having basic knowledge of procedural theory is, as Herrington points out, acquiring awareness of methods we could apply in our creative processes, to take inspiration from, or use to find structure. The theory also provides a set of concepts creating a common language that can be shared between professionals. The linear flowchart of the design process could also be valuable when launching a project, to gain a sense of the time available and an overview of the project.
A potential danger with following the linear, theoretically perfect process is that inexperienced designers may get stuck or perplexed when they follow the process and sudden disruptions occur in a project. Hopefully, the designer is already trained in the professional flow of the process and already knows that iterations between the steps of the process are necessary. To overcome difficulties it could be helpful to be able to apply another attitude to the creative process, becoming part of a process that highlights the iterations and communication rather than the steps themselves. Communication is key in a creative process involving many stakeholders, and involving living entities such as humans, animals and plants, and also different fields of expertise, including construction professionals. These communication steps, as well as iterations, are essential to a project but rarely seen in a procedural design flowchart. In our scientific poster we show how a realistic design process can be visualised.

Supportive references: Brown, T. (2009); Cross, N. (2018); Herrington, S. (2016); Murphy, M.D. (2016).

Procedural Theory - A visual approach using doodling and sketching

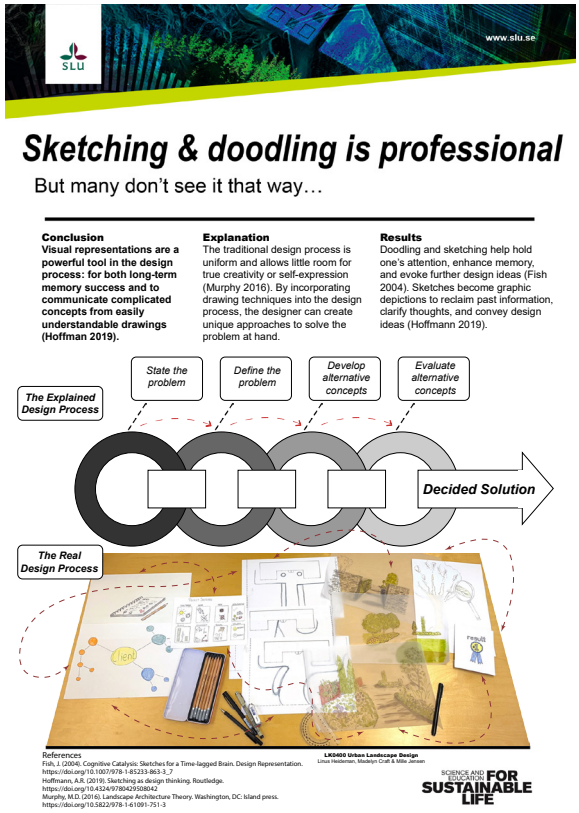
By Madelyn Craft, Mille Jensen & Linus Heideman

The design process is a creative process, starting with a problem statement that will drive the designer to the main goal, the best solution, and help solve the problem. A procedural theory is often set up with some kind of flowchart. The layout and steps may be different, depending on what kind of task helps in the process. Many writers try to explain the design process in different ways using various theories, but the conclusions on the topic have the same outcome. It is a process that is complicated to describe, because it is personal and performed in the individual's mind. In order to be free and creative without restricting ideas, strong tools for use in the design process steps to find a solution are sketching and doodling. Many people may view sketching and doodling as unprofessional, a sign of not paying attention. However, scientific data shows otherwise. It has been shown that drawings are beneficial for long-term memory, a way to clarify thoughts, to communicate with others, to compare, and to evaluate. Historically, this process has been observed for thousands of years, with examples being ancient cave paintings and Egyptian hieroglyphs.

From the overall design process, we have focused on the inclusion of sketching and doodling in the four design ideation phases.

Phase 1: State the problem
Gather information about the needs, users, and demands.
Hands-on: Create doodles and a mind map from client information.

Phase 2: Define the problem
Investigate and uncover further information, critical issues, and its wider context.
Develop first concept.
Write an in-depth summary of the issue.
Hands-on: Small pocket sketches can describe the site conditions.



Phase 3: Develop alternative concepts
Create different design ideas that meet the problem statement's requirements.
Hands-on: Make several drawings to test various patterns, styles, and scales.

Phase 4: Evaluate alternative concepts
View the problem from different angles to find alternative design suggestions.
Evaluate each design scenario to see how they meet the requirements of the users and the site.
Hands-on: Construct more detailed drawings of design possibilities.
The phases are a guideline for use in the steps that should be performed in each task. The user can go back through them periodically to improve concepts and design, gain more knowledge and information, and create the best concepts to solve the design problem, but they are not set to be followed in a specific order.

Summary
The power of a visual explanation can show a reasonably investigated solution, before deciding on the final outcome. The sketches evolve during the natural development of design. They start out as doodles and become more detailed as information, knowledge, and ideas are received throughout the design process. Consequently, each step is important in the progress of the design solution.

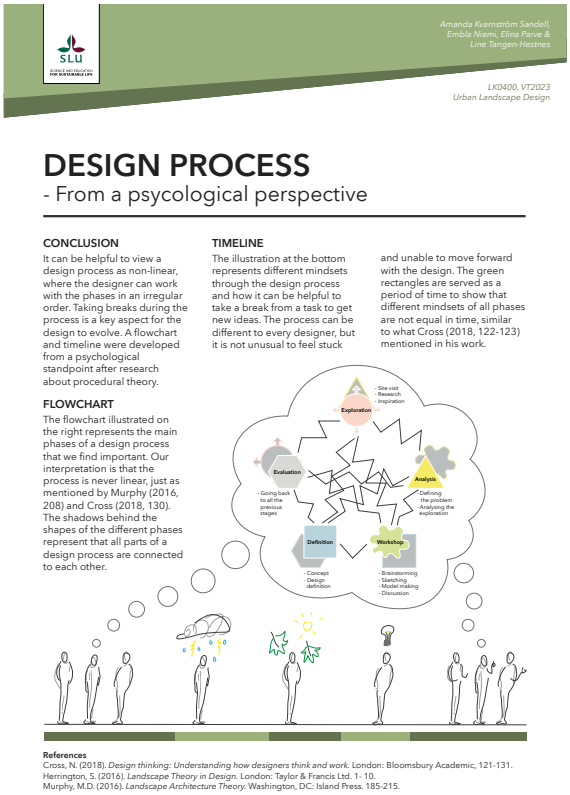
Supportive references: Fish, J. (2004); Hoffman, A.R. (2019); Murphy, M.D. (2016).

The Design Process - From a psychological perspective

By Amanda Kvarnström Sandell, Embla Niemi, Elina Parve & Line Tangen-Hestnes

The design process generally consists of different phases and steps. It is helpful to be aware of the process and how the mind works, to discover patterns, make sense of experience, and make appropriate choices. This project is an attempt to identify those steps in an attempt to agree on which elements describe the design process of the group. Another aim is to bring awareness to the possibility that a design process can be challenging in a creative sense.

The design process is often seen as linear. This work therefore seeks to explore different kinds of approach to the creative process. The flowchart aims to visualise the possible phases of a design process. The main argument is that it can be helpful to view a design process as non-linear, where the designer can work with the phases in an irregular order. After reading about procedural theory, the literature along with personal experiences in landscape design were discussed in a seminar. Cross, Murphey and Herrington's writings were important sources for finding information that complemented the experiences exchanged in the discussions. Other creative methods, such as sketching, were used to visualise the ideas. Through the process of working with the poster, it was concluded that a design process could include the following five phases: exploration, analysis, workshop, definition, and evaluation. These phases all have different steps that are helpful for the process. However, the phases of the design process do not necessarily have to be linear or follow on from each other. They can be seen as an iterative cluster. One of the main conclusions of this research is that designers have different mindsets throughout the design process. Therefore, the aspect of taking breaks during the process to refresh the mind was something that was found important in moving the process forward. Although many aim to identify the different elements of a design process, it must be acknowledged that the process can vary for different people in different scenarios. Equally, it is important to keep in mind that the process of designing is not necessarily straightforward and effortless. The evolution of a good design takes time and energy. In conclusion, it can be helpful to take breaks from the design and let the process be flexible instead of strictly linear.

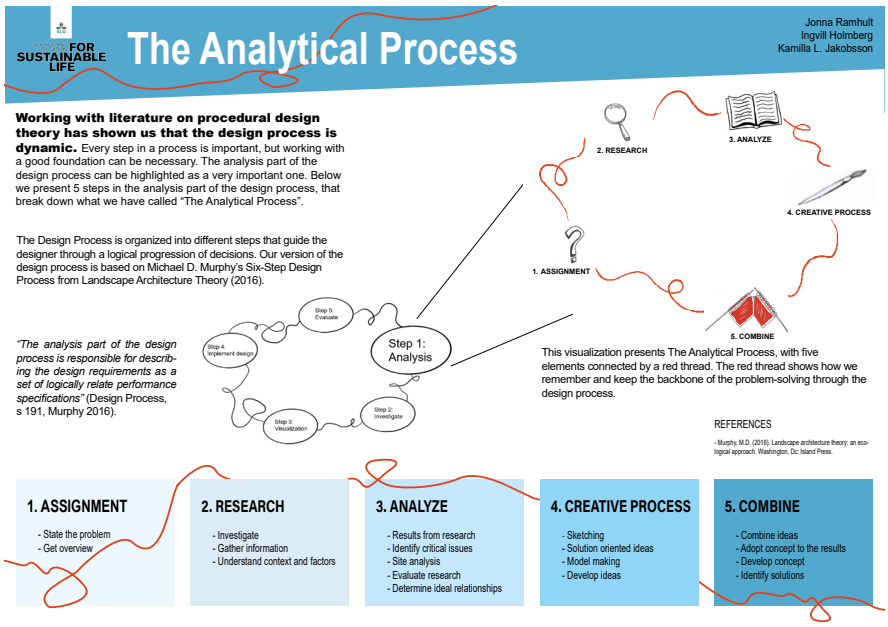


The Analytical Process

By Jonna Ramhult, Invill Holmberg & Kamilla L. Jakobsson

Every step in the design process is important, but working with a good foundation can be invaluable and necessary. Looking at the importance of the foundation, the analysis part of the design process can be highlighted as one of the most important ones, so this is our focus in this assignment. We have created "The Analytical Process", which is a deep dive into the analysis part. To increase understanding of this part, we had to break down the design process. We used Michael D. Murphy's Six-Step Design Process to get a better understanding of the process, and then created our own version of it. The result was a process of five stages instead of six; step 1: Analysis, step 2: Investigate, step 3: Visualisation, step 4: Implement design, and step 5: Evaluation. Since a stable foundation is necessary for the design process, we took a further look into *Step 1: Analysis.* To really get into depth about what an analysis implies, we broke this step down, and divided it into five stages. These were **Assignment**, **Research**, **Analysis**, **Creative process**, and **Combine**. Each of the steps play a critical role in The Analytical Process and influence the solution and design. In Step 1, **Assignment**, the problem is stated to obtain an overview of the project, which leads into Step 2, **Research,** comprising investigation and data collection. According to Murphy, another aim in this step is to understand the context and identify the factors to be considered in the project. In Step 3, **Analysis**, the data gathered during the research is examined, enabling identification of critical issues. It is also important to evaluate the research as part of this step – according to Murphy, it is also a step where the ideal relationships among the factors and their context are determined. For Step 4, **Creative process**, creative methods are brought into the process to find solutions. Sketching and model making are methods that help find these solutions and are also methods that help visualise the development of the ideas. In Step 5, **Combine**, all the information, ideas and solutions are combined to identify solutions in the project. These solutions will be connected to the concept, which will be further developed by incorporating the solutions. This sometimes requires adaptation of the results to obtain the best possible design outcome.

This assignment highlights the importan-



ce of a stable foundation in the design process, and how it is built through The Analytical Process. This is presented with a red thread on our poster, to show the connection between the five elements, helping us remember and maintain the backbone of the problem-solving though the design process.

Supportive references: Murphy, M.D. (2016).

Conclusion

The presented works in this factsheet show different ways of describing complicated mental processes in which students emphasise ways to promote creativity and personal expression. According to Lawson (2005), changing direction of thoughts and adapting mental tricks during the design process can yield astonishing design results. Trying to describe the design process in clear steps can create false hopes for a clearly functioning model. All missions and locations are unique and require partly different processes. Using mental tricks as fundamental principles as part of the design process is often seen among successful designers (Lawson, 2005).

In all forms of site design, the designer needs to find working methods and tools that work and serve as the goal of creating good and relevant solutions for people and the environment. Common to all the groups is that they emphasise the iterative way of working, where sketching and doodling can open up for creative ideas and solutions. The sketch outline becomes the tool to communicate at different levels in the process, and provides an opportunity for understanding complicated relationships. To varying degrees, the students' work has highlighted the importance of a fundamental analysis during the design process, using a methodology based on a cyclic process (Murphy 2016).

The work presented in this factsheet shows a few different ways of mentally relating to the design process. The ways of approaching design work are deeply personal (Lawson 2005; Cross 2018) and the intuitive process takes place on an unconscious level (Murphy 2016).

From the perspective of a group activity and the task of working with a personalised process, the students have performed well and been successful in demonstrating the ability to extract the principal ideas of Procedural Theory. The presentations in this factsheet show the students' increased understanding of their own assumptions in the design process, and the development of their critical approach. We, as teachers on the course and practicing landscape architects, would also like to take the opportunity to thank the students for interesting and fruitful discussions about the mental progressions and the sketching and drawing procedure during the design process.

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- The fact sheet has been prepared within the LTV faculty's area Department of Landscape Architecture, Planning and Management
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