How can the current design process of the Loosely Fitted Design Synthesizer tool be improved and optimized with emphasis on the Logic Mode?

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Developing a new Loosely Fitted Design Synthesizer system

Rawshaping Technology (RST) is continuously developing Hybrid Design Tools, the Loosely Fitted Design Synthesizer (LFDS) (Figure 1) is such a tool. It is suited to support and enhance group design work when designers explore the power of design and communication through physical prototyping or abstract representations (Wendrich, 2010). R.E. Wendrich, founder of RST, is not completely convinced of the postulated process-architecture of the LFDS in its current state (Wendrich, 2016). The main research question was stated as: How can the current design process of the LFDS tool be improved and optimized with emphasis on the Logic Mode (LM)?

Figure 1: A schematic representation and iteration of the LFDS (Wendrich, 2010)

The expected result will be the re-design and engineering of the LFDS system with emphasis on the LM. As a result, the LFDS will be improved and therefore increase the value for designers, whilst contribute to the RST project.

The LFDS is subjected to analysis, a theoretical treatment and a practical research. Leading to focusing on improving the conceptualizing abilities of the LFDS and LM. Other results are an overview of how the functionalities work regarding the two mappings, the Loosely Fitted Mapping (LFM) and the Matrix Mapping (MM), and the different takes on how the LFDS can be used (Figure 2).

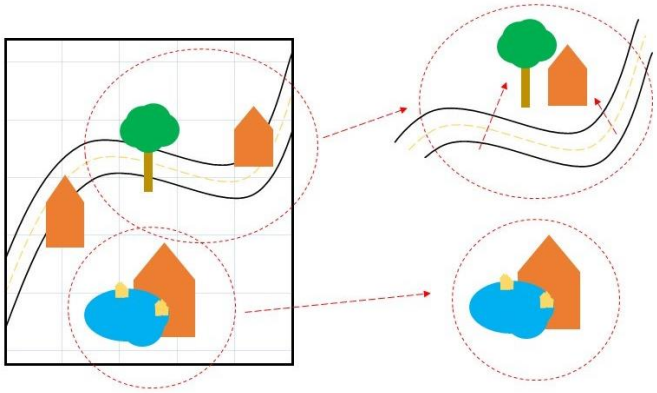

Figure 2: Finding solutions as they are versus rearranging solutions to match constraints

During ideation two directions for solutions were distinguished. The result of the first direction is an exploration of extra modifications to existing instances which are represented in a 2-D form. This direction was discarded, due to the increased availability of 3-D-scanners and 3-D-data. Instead the focus is shifted towards an abstract solution field. For that, A Thousand Plateaus (ATP) by Deleuze & Guattari (D&G) (1987) is used. ATP is of interest due to the writer's similar goal to understand how truly new concepts are conceived.

Based on current similarities between ATP and LFDS there is a new framework created. Within this new framework two new LFDS-systems are created. The first LFDS-system is created to incorporate building relations between bodies (Deleuze & Guattari, 1987). Parts of the current LFDS system are reworked (LFM and MM) to fit in the new framework and a first extension is added, the Relation Mapping (RM)(Figure 3).

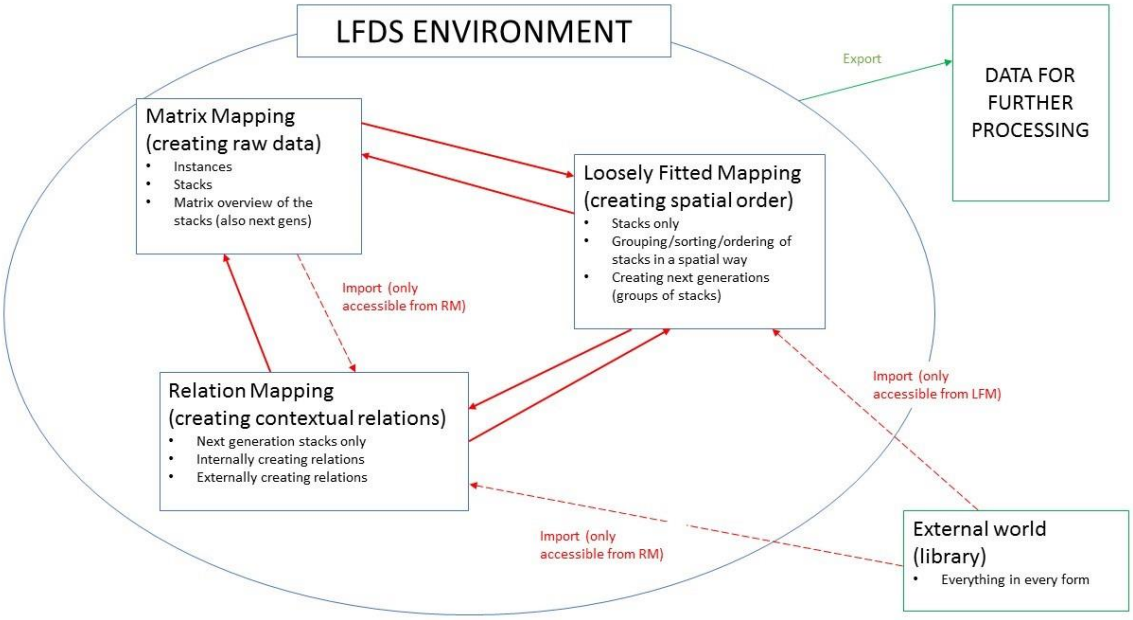

Figure 3: New LFDS system including Relation Mapping

The second LFDS-system also integrates the translation of connections from the Virtual to the Actual (Deleuze & Guattari, 1987). After the RM it is also extended with the Evaluation Mapping (EM), which incorporates the rules of cartography. It is noted that, compared to the different takes a user has on using the LFDS, the new LFDS system is more adjusted to solutions without hard constraints.

The concepts by D&G from ATP (1987) can be helpful to develop the LFDS in a more useful tool for designers. The LFDS is a tool that represent ideas and thoughts in a natural way. By enabling the virtual space to contain a rhizomatic structure (Deleuze & Guattari, 1987) the user is enabled to extract truly new concepts to from the LFDS. As this research has been a brief exploration of the viability between D&G and the LFDS tool, it is highly recommended to continue this research. Not only to create a more thorough framework but also to start prototyping for testing the first findings.

References:

Deleuze, G., & Guattari, F. (1987). *A Thousand Plateaus.* Minnesota: University of Minnesota Press.

Wendrich, R. (2010). Design Tools, Hybridization, Exploring Intuitive Interaction. *Proceedings of the 16th Eurographics conference on Virtual Environments & Second Joint Virtual Reality*, (pp. 37-41). Stuttgart, Germany.

Wendrich, R. (2016). *Hybrid Design Tools for Conceptual Design and Design Engineering Processes.*