

## The Cognitive Graphic Thinking Processes of Idea Sketches by Two Brain Modes

### Focused on the Differences of Originality of the Idea Sketches

Woo, Heung Ryong  
*Seoul National University of Technology*

#### Abstract

It is commonly believed that idea sketches play key role in early design processes. The sketches are generated through cognitive, graphic thinking process. The thinking modes are involved in high-level cognitive functioning, which have two major modes of human brain-hemisphere, L-mode and R-mode.

We focused on the differences of originality of the idea sketches by two brain modes. Sperry's research has shown that the right and left hemispheres of the human brain use contrasting methods of information processing.

Exploration of how sketches by two brain modes show different results is expected to bring important implications for design practice and design education.

Using T-Test and Correlation analysis technique, we examine the differences of the idea sketches.

Firstly, idea sketches have been continuously changed their dimensions through graphic thinking process between the arguments and the moves, and between L-mode and R-mode of brain.

Secondly, we have confirmed that free drawing is more close to the R-mode of brain type, but purposeful drawing (idea sketches) has no inclined propensity to a specific brain mode.

Thirdly, our findings show that there are close relationships between drawing A (free drawing) and drawing B (purposeful drawing), which means that drawing B contains attributes of Drawing A (free drawing) partly in these experiments.

The findings suggest that an approach for increasing the design creativity through graphic thinking process. Also it is discussed the influences of interaction of two brain modes (L-mode and R-mode) are significantly positive to the creativity.

#### Keywords

Idea Sketch, Graphic Thinking, Brain Mode, Ideation

## Every Pixel User-made

### Aesthetic Consistency in the Development of Computer-supported Conceptual Design Tools

Pieter Jan Stappers  
*ID-StudioLab,  
 School of Industrial Design Engineering, Delft University of Technology*

Aldo Hoeben  
*ID-StudioLab,  
 School of Industrial Design Engineering, Delft University of Technology*

#### Abstract

Nowadays computer tools are used in all parts of the design process except in the early, conceptual phase. Here designers prefer traditional media, such as sketching on paper, because of a variety of reasons regarding aesthetics, interaction, and usability. In this paper we present a positive design guideline, the principle of aesthetic consistency, and describe how it is applied in the development of a design merging the strengths of traditional media with those of digital media. Aesthetic consistency means that all aspects of the user interface fit in with and support the expressive style of the user (in the case of a digital sketchbook), or the discussion materials (in the case of internet conferencing). We discuss examples of how common interface elements such as perspective support lines, line styles, color and page navigation "buttons" can be replaced by an interaction design in which "all the pixels were generated by the user's sketching actions". Designers complain that current computer tools impose an external aesthetic (through windows, menus, button bars) which interferes or conflicts with their own style, and which distracts their creative process.

In developing these tools we borrow properties from the traditional tools such as directness, fluency, ease of use, availability, and the ability to use an expressive and suggestive (as opposed to prescriptive) visual language.

#### Keywords

Design Tools, Conceptual Design Phase, Interaction Design