

Verbal focus shifts: Forms of low coherent statements in design conversations

Axel Menning, Bastien M. Grasnack, Benedikt Ewald, Franziska Dobrigkeit and Claudia Nicolai, Hasso Plattner Institute, University of Potsdam, Prof.-Dr.-Helmert-Str. 2 - 3, Potsdam, D-14482, Germany

Previous studies on design behaviour indicate that focus shifts positively influence ideational productivity. In this study we want to take a closer look at how these focus shifts look on the verbal level. We describe a mutually influencing relationship between mental focus shifts and verbal low coherent statements. In a case study based on the DTRS11 dataset we identify 297 low coherent statements via a combined topic modelling and manual approach. We introduce a categorization of the different instances of low coherent statements. The results indicate that designers tend to shift topics within an existing design issue instead of completely disrupting it.

© 2018 Elsevier Ltd. All rights reserved.

Keywords: creativity, communication, computational models, design cognition, design behaviour

When reviewing different models of creative invention, one cognitive mechanism persists: readiness towards focus shifts. Focus shifts occur when a person's attention is directed away from their current thought to a new topic (Suwa & Tversky, 1997). Their impact ranges from slight bending or broadening of the topic at hand to abandonment of the current thought. Focus shifts are beneficial for idea generation by allowing for lateral variety (Suwa & Tversky, 1997). Take for example Bisociation (Koestler, 1964), Integration (Sternberg, 1999), or conceptual blends (Finke, Ward, & Smith, 1992): The principle behind these models is that innovative meaning emerges 'between' two concepts, which requires the ability to shift the focus of attention from a single plane of thought to multiple. In many cases this combinatorial act is further specified by a semantic distance that should exist between the concepts to be merged. According to Koestler (1964, p. 35), creative ideas are generated through 'the perceiving of a situation or idea...in two self-consistent but habitually incompatible frames of references'. Finke and colleagues propose that the combination of incongruous meanings carries creative properties (Finke et al., 1992). This particular stereoscopic view of situations requires flexibility of thought – and more precisely the readiness to shift the focus of attention. If designers are too focused during idea generation, they are in danger of getting stuck. This phenomenon is called *design fixation* (overview in Crilly, 2015). Many techniques

Corresponding author:
Axel Menning
axel.menning@hpi.de



www.elsevier.com/locate/destud
0142-694X *Design Studies* ■■ (2018) ■■–■■■
<https://doi.org/10.1016/j.destud.2018.03.003>
© 2018 Elsevier Ltd. All rights reserved.

to circumvent this phenomenon have evolved through practice. They mostly consist of manipulating an individual's or team's focus of attention. Examples are morphologically forced connections (Koberg & Bagnall, 1974), combinatorial play (Einstein, 1954) and various types of brainstorming scenarios, such as 'What would superman do?', which force creatives to reimagine their current topic within a new setting or from a new perspective. This focal manipulation results in focus shifts of varying magnitude.

Slight focus shifts might increase attentional breadth. Depending on the semantic distance of the focus shift and the readiness of the individual towards focus shifts these shifts might extend the range of stimuli one is able to process at once. Attentional breadth is positively related with creative performance (Kasof, 1997). Defocused attention results in divergent or associative thought, which is 'conducive to insight and finding unusual connections' (Gabora, 2010, p. 2). It is rather impractical to be always defocused, or simply too slow to have a defocused attention to solve concrete tasks. Being able to adjust the attentional breadth between wide and focused attention according to the situation, which is known as attentional variability, is considered to facilitate creative problem solving (Vartanian, 2009). In a similar sense, Gabora (2010) promotes variable contextual focus enhancement for creative tasks, with contextual focus being defined as the capacity to shift between analytic and associative thought. This also poses questions regarding the designers' exposure to focus shifts. In situations when ambiguity should be reduced, e.g. idea selection, focus shifts might have a negative effect on task completion.

While slight focus shifts might have a broadening effect on the attentional breadth, strong focus shifts might lead to a complete turn away from the problem at hand. If the problem has not been satisfyingly treated until then, these focus shifts provide the possibility for incubation. Incubation is an often reported phenomenon in which the problem at hand is temporarily put aside, focus shifts in the form of resting or the treatment of rather distant topics happen, and the return to the initial problem provides new insights (e.g., Sio & Ormerod, 2009).

The notion of focus shifts has been strong in the creativity literature. They have been studied as the effect of different external stimuli, such as graphical representation, gestures and talk. Several researchers have investigated how the semantic ambiguity of sketches leads to focus shifts (e.g., Goldschmidt, 1991). Suwa and Tversky (1997, p. 395) confirm based on a protocol analysis of retrospective reports on sketching that focus shifts 'allow for a lateral variety of design topics/ideas'. Glock (2009) has investigated how indexical expressions in talk and gesture lead to shifts in the focus of attention between different modes of representation. Vague expressions and ambiguous phrases provide a wide range of stimuli for the designer to attend to. The possible

Download English Version:

<https://daneshyari.com/en/article/6726472>

Download Persian Version:

<https://daneshyari.com/article/6726472>

[Daneshyari.com](https://daneshyari.com)