The bodily basis of product experience

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Based on the work of Lakoff and Johnson, this paper argues that part of our product experience is rooted in bodily interactions between people and their environments. Lakoff and Johnson convincingly demonstrated that repeated bodily interactions of a similar kind lead to the formation of image schemas guiding our understanding of verbal expressions. Here, it is proposed that the same underlying principles also govern our understanding of the expression of products. If correct, product expressions theoretically structured by the same underlying schema must be highly related. An experimental study involving chairs partly confirmed this prediction. The paper closes with a tentative discussion on how a chair's perceived expression could be related to the embodiment of schemas in its spatial and material features.

Keywords: product experience, product design, product expression, design theory, image schemas

Products of industrial design, like those of architecture, are not only supposed to function in a strict utilitarian sense. Among industrial designers and architects it is well acknowledged that products also influence the way we experience our material environment. Although these experiences change constantly under the influence of context factors, such as trends, technological developments, etc., a designer is able to influence these experiences in a desired direction by manipulating a product's expression. Despite the extensive knowledge available for establishing the behavior of materials, technology, etc., determining the way a product's expression will be understood is less straightforward. In establishing a product's expression, designers often have to rely on subjective knowledge, personal views, and (cultural) values.

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Classic theories on perception and cognition offer knowledge of a kind too general to be applied in unique design situations. However, in recent

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studies in cognitive semantics an experientialist theory on perception and understanding is put forward that provides clues to how we understand human expressions (Lakoff and Johnson, 1980, 1999). According to this theory, experiences, arising in bodily interactions with the world, motivate our understanding of expressions of all kinds. The experientialist theory may be of interest for designers who intend to create a particular product expression. Before looking into this theory more closely, a brief historical overlook will be presented first, indicating that the role of the body in experiencing our world has been acknowledged ever since the end of the 19th century.

1 *Empathy and anisotropy*

At the end of the 19th century, the German psychologist Theodor Lipps (1897) published a book entitled 'Raumästhetik', in which he unfolds a theory on the aesthetic perception of space and spatial features of both natural and artificial things. With regard to this theory, the author is particularly known for the concept of 'einfühlung' or empathy, which he describes as the act of projecting oneself into the object of perception. According to Lipps, we are capable of this projection because we, just like physical objects, are subject to the laws of nature. For instance, when carrying loads we have to exert muscular pressure in order to counterbalance gravitational forces threatening to bring us down. We may therefore understand the columns of an ancient temple as struggling to give enough back-force to the loads acting upon them. In other words, the way we understand objects around us is related to our bodily experiences arising in interacting with the spatial world. Although Lipps' theory is mainly centered on the relation between mechanical aspects of our bodily experiences and the attribution of meaning to objects, and Lipps in that respect represents the thinking of his time, his concept of empathy may be of interest for designers creating meaning through spatial features of their designs.

The role of bodily experiences is also fundamental in the work of Arnheim (1977). In a similar sense, but some 60 years later, he introduces the concept of anisotropy to explain that different directions in space are perceived unequally because of the difference in experiencing our bodily movements in space. Going up takes more effort than going down since we have to overcome the forces of gravity. Having a face defining a bodily front, that governs man's mainly forward directedness when moving in a horizontal plane, makes going forward to be experienced differently than backwards. As a result, different directions in works of art are understood differently, thereby influencing the experience of the work as a whole. Clearly, Arnheim's