Sensible Moves

Regenberg, N.F.E.

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Summary

In our daily lives, we are often not only influenced by what we are thinking but also by how easy these thoughts come to mind or how easy new information can be processed. There is ample research to demonstrate the effects of such processing ease – the so called processing fluency. For example, we like things better the more often we see them (because we can process them more easily) and when our cognitive processes go smoothly, it makes us feel good.

The current dissertation addresses different aspects of such processing fluency. Whereas previous research has focused on fluency experiences based on abstract information processing ("thinking"), the research underlying this dissertation explored whether fluency, its affective consequences can also be caused by actual or simulated *physical* interactions with objects ("doing"). The underlying hypothesis is therefore that smooth and effortless interactions should trigger feelings of fluency and generally a positive affective response.

Chapter 2 demonstrates that fluency can indeed be grounded in the motor system. In two laboratory experiments, participants had to act on objects that appeared on a computer screen. These actions were either compatible with the objects' implied orientation, such as a right-hand action on a cup whose handle was oriented toward the right, or they were not compatible, such as a right-hand action when the cup's handle was oriented to the left. The results show that after the easier,

compatible actions, participants experienced more positive affect and a feeling of fluency than after the more difficult, incompatible actions.

Building on these results, Chapter 3 poses the question whether the mere anticipation of motor fluency is enough to drive an individual's preferences, such that the easiest course of action is preferred. Participants in two experiments imagined that they were to play table-tennis and had to pick a side to play at. Participants playing with their right hand preferred the right side, whereas participants playing with their left hand preferred the left side. This occurred for participants' natural handedness and for an experimental manipulation of the play-hand. In other words, people preferred the side that was most accessible and easy to go to – although this factor should be irrelevant as both sides were in fact equal. These results suggest that people use such physical cues to make preference judgments and that these cues differ as individuals differ in their physical makeup, such as being right- or left-handed, or as the situational constraints change.

Chapter 2 and 3 therefore demonstrate that physical interactions – or even the mere anticipation of such interactions can give rise to fluency effects. However, recent theories of cognition propose that also more abstract processes, such as language comprehension, involve the motor system. Reading a sentence like *"The lemon tastes sour."* implies no real, physical interaction with an object. Nevertheless, perceptual theories of knowledge propose that even the way we understand language relies on perceptual variables. Accordingly, we derive meaning from concepts by (partially) re-enacting relevant experiences we have had with them. For example, when offered a glass of lemon juice, one might particularly think about how lemons taste sour. However, while arranging a lemon with other fruits to prepare a nice fruit basket, the current representation of the concept "lemon" might include its shape ("where would the lemon fit") or its color ("it might look nicer next to a red apple than next to a yellow banana") rather than its taste. The research in Chapter 4 therefore addresses whether conceptual thought can give rise to fluency experiences. Assuming that concept represen-

tations indeed hinge upon the re-enactment of perceptual variables, we hypothesized that the more *different* sensory modalities (such as taste, vision, or touch) are involved in the representation of a concept, the easier it should be to derive its meaning. Experiencing this processing ease should then again trigger fluency effects. The results of two experiments support this prediction: Participants experienced positive affect after processing a series of words from a multitude of sensory modalities as compared to a single sensory modality and they rated concepts as more positive when these had been paired with attributes from different sensory modalities as compared to when they had been paired with attributes from a single modality.

Finally, the research in Chapter 5 more generally explores the functional value of processing fluency. The underlying assumption is that cognitive processes aren't a random phenomenon of the mind, but that any cognitive process serves action – or at least its preparation. Therefore, fluency in all its variants is functional because it shows us that things are going the way they should. They feel good. However, from this perspective, disfluency should be particularly relevant for us because it signals us that things are *not* going as they should. Disfluent processes feel "wrong" or even bad. Therefore, whenever we experience disfluency, we should (want to) engage in self-regulatory acts to change something in the situation at hand. Two experiments in Chapter 5 explore this hypothesis. The results support the view that fluency experiences are in fact related to self-regulation.

Overall, the current dissertation discusses experimental research exploring different antecedents and consequences of processing fluency, involving sensorimotor fluency, anticipated action fluency, conceptual fluency, and perceptual fluency.