

RUNNING HEAD: Ego Fixation

## **The Ego Fixation Hypothesis: Involuntary Persistence of Self-Control**

Sander L. Koole

Mattie Tops

Sarah Strübin

Jarik Bouw

Iris K. Schneider

VU University Amsterdam

Nils B. Jostmann

University of Amsterdam

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### **The Ego Fixation Hypothesis: Involuntary Persistence of Self-Control**

Towards the end of the 20th century, a Dutch production company introduced a reality game show called *Fear Factor*. In the show, contestants compete against each other in various stunts for a cash prize. Some stunts involve extreme physical endurance tests, whereas other stunts are mentally challenging. The latter include activities such as eating vile animal parts, live bugs, or a blended cocktail of multiple gross items; immersing one's head or body among scary animals like rats, snakes, or worms; and retrieving items hidden in disgusting substances like blood or lard. For better or worse, *Fear Factor* has developed into a popular format that has so far been watched by hundreds of millions of viewers in some 35 different countries, including the USA, Russia, and the Arab world (source: Wikipedia.org).

Besides being a literally distasteful example of commercial television, *Fear Factor* highlights how people can use self-control to overcome their natural reactions to powerfully aversive stimuli. Self-control allows people to inhibit their immediate impulses to achieve their long-term goals. By promoting goal achievement, self-control has obvious benefits for individuals and society at large. Nevertheless, self-control may also incur less obvious psychological costs. Indeed, in the present article, we suggest that self-control processes may lead people to become psychologically disconnected or alienated from their emotional preferences. Alienation tendencies are associated with various psychological problems, like learned helplessness (Kuhl, 1981), persistent negative emotion (Baumann & Kuhl, 2003), and psychosomatic symptoms (Baumann, Kaschel, & Kuhl, 2005). It therefore seems important to learn more about the potentially alienating effects of self-control.

In the following paragraphs, we begin by placing the notion of alienation in a broader theoretical context. Next, we advance a new theoretical model of alienation that we term the *ego fixation hypothesis*. The notion of ego fixation refers to the involuntary persistence of self-control processes. One important consequence of ego fixation is that individuals can no

longer access their negative reactions to distasteful stimuli. Although virtually everyone may be somewhat ego-fixated at from time to time, some individuals may be more vulnerable to this condition than others. In particular, individuals who become easily locked into motivational and emotional states, or so-called "state-oriented" individuals, may be especially prone to become ego-fixated. After discussing our ego fixation model, we review several lines of empirical research on state orientation and ego fixation.

### *Psychology of Alienation*

The word 'alienation' in this chapter denotes a motivational-emotional state in which the individual ignores her or his intrinsic needs and desires. Among the earliest and most influential thinkers to write about alienation was political economist Karl Marx (1844, see Bottomore, 1963). According to Marx, members of the working class become alienated when they must function within the capitalist mode of production. Marx was mainly interested in alienation as an outcome of class struggle, a topic that lies beyond our present focus. Nevertheless, Marx' ideas influenced psychologist Erich Fromm (1941, 1976), who regarded alienation as a psychological condition that is caused by greed and materialist values. Fromm's approach to alienation continues to influence contemporary humanistic psychologists (e.g., Deci & Ryan, 2000). For instance, research within the latter tradition has shown that materialism is empirically associated with reduced wellbeing and alienation from intrinsic psychological needs (Kasser & Ryan, 1993).

Some of the cognitive mechanisms underlying alienation have recently been addressed by Wilson (2002) and associates. These researchers started by observing that people are often grossly inaccurate in reporting their inner states (Nisbett & Wilson, 1977). To understand this phenomenon, Wilson and colleagues experimentally investigated the effects of introspection on evaluation processes (for an overview, see Wilson, 2002). These experiments revealed that, after analyzing the reasons for their preferences, people are more inclined to disregard

the initial affective reactions that normally drive their preferences. Because these initial reactions are often adaptive, reasoning may lead to less optimal preferences. Indeed, leading people to reason about their preferences may lower the quality of their decisions (Wilson & Schooler, 1991) and renders those preferences less stable over time (Nordgren & Dijksterhuis, 2009). Reasoning about preferences may thus be an important cause of alienation.

At first glance, it seems paradoxical that reasoning about preferences would alienate people from the feelings that normally drive their preferences. Yet, in many situations, this may have certain advantages. When people's feelings conflict with how they ought to behave, ignoring these feelings may allow people to behave more in line with prevailing social norms. Indeed, there is extensive evidence that self-reflective thought can help people to override automatic responses (Baumeister, Masicampo, & Vohs, 2011). The alienating effects of reasoning may thus help people to gain control over their emotional preferences. If this is correct, then it seems plausible that self-control processes other than reasoning, like planning, may also promote alienation. Indeed, Marx (1844) saw a close connection between alienation and self-control: "What constitutes the alienation of labor? First, that the work is *external* to the worker, that it is not part of his nature; and that, consequently, he does not fulfill himself in his work but denies himself. (...) It is not the satisfaction of a need, but only a *means* for satisfying other needs" (cited by Bottomore, 1963, pp. 124-125).

#### *The Ego Fixation Hypothesis*

How might self-control lead to alienation? To address this question, it is helpful to consider the cognitive mechanisms that govern self-control (Kuhl & Beckmann, 1994a; Kuhl & Koole, 2004). Common to all self-control processes is that they are guided by explicit intentions that can be verbally articulated (Metcalf & Mischel, 1999). A distinctive psychological feature of an intention is that it mentally persists over time, even when the

intention is not directly cued by the environment (Förster, Liberman, & Friedman, 2007; Goschke & Kuhl, 1993; Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999).

The persisting activation of intentions is generally useful because it ensures that people continue to think about their intentions until they are converted into action. However, the mental persistence of intentions can sometimes get in the way of other activities (Jostmann & Koole, 2006). For instance, while engaged in tender lovemaking, it is undesirable to keep rehearsing one's list of unfinished administrative chores. People therefore need some means of deactivating their intentions when this is appropriate. When people are unable to do so, they may become chronically locked into the intentional self-control mode, a condition that we refer to as *ego fixation*.

When people are ego-fixated, they are unable to release the inhibition of emotional preferences that is part of self-control. Self-control processes particularly inhibit aversions for negative experiences, because tolerating such experiences is essential for self-control. Consequently, to the extent that self-control induces ego fixation, it may lead people to become alienated from their intuitive dislike for aversive experiences.

Though it is novel, the ego fixation hypothesis is compatible with social-cognitive models that have emphasized the alienating effects of explanatory introspection (Wilson, 2002). Specifically, from an ego fixation perspective, explanatory introspection may be understood as a member of a family of self-control processes. In everyday life, whenever people wonder why they want something, they are likely to interrupt their spontaneous flow of activities, and are possibly considering an alternative course of action. The effects of explanatory introspection are thus likely to initiate a shift from intuitive action control towards a more intentional mode of action control.

We may further compare our model of ego fixation with the influential model of "ego depletion" (Baumeister, Bratslavsky, Muraven, & Tice, 1998). The ego depletion model

proposes that acts of self-control deplete the person's limited energy resources (Muraven & Baumeister, 2000). Ego depletion has been implicated in self-regulatory failure in an impressive number of domains, including health behavior, aggression, close relationships, academic performance, spending behavior, and stereotyping (for an overview and meta-analysis, see Hagger, Wood, Stiff, & Chatzisarantis, 2010). Like ego depletion, ego fixation refers to an unintended negative consequence of exerting self-control. The processes of ego depletion and ego fixation are thus conceptually related. Indeed, we have chosen the term "ego fixation" to emphasize its theoretical relatedness with ego depletion processes.

Nevertheless, ego fixation is a qualitatively different process than ego depletion. Ego depletion presumably leads to self-regulatory failure because people stop controlling themselves after an initial act of self-control (in order to conserve energy). Thus, ego depletion is essentially a problem of impulsivity or under-regulation. By contrast, ego fixation presumably leads to self-regulatory failure because people keep on controlling themselves after an initial act of self-control. Ego fixation thus relates to rigidity or over-regulation. In this sense, ego fixation represents the theoretical opposite of ego depletion. In ego depletion, self-regulation breaks down because people are exerting too little self-control; in ego fixation, self-regulation breaks down because people are exerting too much self-control. As a further analogy, we may relate the distinction to the two processes to Freud's (1923) classic model of the psyche: Whereas ego depletion represents a regression from control by the ego toward the id with its child-like impulses, ego fixation represents a "progression" or chronification of the top-down control that is exerted by the ego (or perhaps super-ego) over the person's impulses and desires.

Because ego fixation and ego depletion relate to different psychological mechanisms, the two processes are likely to have different empirical manifestations. We can think of at least three important differences, though there are likely to be more. First, the exertion of

self-regulatory energies does not drive ego fixation as much as ego depletion. Therefore, ego fixation is likely to arise much more quickly than ego depletion. Indeed, as we will show later in this chapter, merely leading people to think about exerting self-control may already trigger ego fixation. A second empirical difference is that ego fixation may often lead people to neglect their hedonic needs, particularly aversions, even (perhaps particularly) when need satisfaction is rather effortless. The over-controlled behavior that results from ego fixation is thus distinct from the impulsive behavior that results from ego depletion (which is aimed at immediate gratification). Third, whereas ego depletion tends to promote irresponsible social behavior, like aggression or ethnic discrimination (see Hagger et al., 2010), ego fixation is likely to promote highly responsible, duty-driven behavior. Indeed, ego fixation can be regarded as a kind of “hyper-civilized” mode of self-regulation, in which people become obsessed with conforming to social and cultural norms for appropriate behavior.

#### *Individual Differences in Vulnerability to Ego Fixation*

We assume that ego fixation is a psychological state that can –at least, in principle– apply to everyone. However, not everyone may be equally vulnerable to ego fixation. Ego fixation derives from the persistence of intentional control processes. Accordingly, one might expect that individuals who are prone to involuntary persistence of mental states, are especially susceptible to ego fixation. By contrast, individuals who can actively and flexibly self-regulate their mental states may be immunized to an important degree against ego fixation.

Individual differences in the flexibility with which individuals can achieve motivational-emotional changes have received much attention in theories of human action control (Kuhl, 1984; 1994). More specifically, action control theorists have introduced the construct of action versus state orientation (Kuhl & Beckmann, 1994a). Action orientation is conceived as a meta-static (change-promoting) regulatory mode that is characterized by

flexible and efficient self-regulation of motivational and emotional states. By contrast, state orientation is conceived as a cata-static (change-preventing) regulatory mode that is characterized by perseveration of current mental and behavioral states. Individual differences in action versus state orientation can be measured reliably through self-report and predict self-regulatory behavior both in the laboratory and in real-life domains such as work, education, therapy, and sports (for reviews, see Diefendorff et al., 2000; Koole, Jostmann, & Baumann, 2012; Kuhl & Beckmann, 1994a).

The general construct of action versus state orientation has different facets, which relate to different self-regulatory skills (Kuhl, 2000). One important facet of action-state orientation is the dimension of decisiveness versus hesitation, which relates to differences in the ability to boost one's motivation under demanding conditions (see Koole et al., 2012, for a review). Although we have examined the decisiveness-hesitation facet in a number of other publications (see Koole, 2009, for an overview), this facet is not the most relevant when considering ego fixation. Indeed, we have found that a different facet of action-state orientation is a consistent predictor of ego fixation processes. This facet is the one relating to disengagement versus preoccupation. Action-oriented individuals, who score towards the disengagement end of the scale, can easily relax and take their mind off a goal intention, even when things go wrong. This capacity for self-relaxation appears to be particularly important in counteracting ego fixation. State-oriented individuals who score towards the preoccupation end of the scale are characterized by compulsive repetitive cognitions, especially after negative events. These compulsive tendencies may render preoccupied individuals especially vulnerable to develop ego fixation. Some illustrative items are presented in Table 1.

Notably, we do not mean to suggest that dispositions towards action versus state orientation is fixed for life. To the contrary, we conceive of individual differences in action

versus state orientation as preferential coping styles that people have acquired while dealing with various life problems. For instance, individuals who grow up in so-called risky families, that are characterized by conflicted or neglectful relationships, may learn that it is dangerous to relax and let their guard down (Repetti, Taylor, & Seeman, 2002). Thus, growing up in a risky family may lead individuals to develop a tendency towards preoccupation. As a preliminary indication of such a pattern, one study found that children from divorced families have higher preoccupation scores (see Koole, Kuhl, Jostmann, & Finkenauer, 2006). Although childhood experiences may be particularly influential, dispositions towards action versus state orientation are likely to remain somewhat plastic throughout the lifespan. Indeed, there is suggestive evidence that preoccupations may decline even into old age (Gröpel, Kuhl, & Kazén, 2004).

#### *Empirical Research, Part I: The Self-Infiltration Paradigm*

Although the ego fixation model is novel, it directly builds on the work by Kuhl and associates, who have conducted experiments on alienation processes (Kuhl & Beckmann, 1994b). The empirical investigation of alienation has long posed a challenge to researchers. Even if researchers observe that people fail to act upon their preferences, it could still be that people were aware of these preferences. Indeed, the well-known gap between intentions and behavior is usually explained by the difficulties that people encounter in implementing their intentions (Gollwitzer & Sheeran, 2006). Thus, researchers have to devise innovative methods to establish that alienated people have difficulties perceiving their "true" emotional preferences (Kuhl & Beckmann (1994b).

One such method was developed by Kuhl and Kazén (1994) in their so-called self-discrimination task. In this task, participants are asked to select a certain number of tasks from a list that are to be performed out later on in the experiment. In addition, participants are also assigned by the experimenter to perform certain tasks from the list. Finally, some tasks

on the list are neither self-selected nor assigned. In an unexpected memory retrieval test, participants are later asked about the initial *source* of each task, whether it was self-selected, assigned, or neither. The rate of tasks that are self-ascribed but originally assigned by the experimenter is taken as an index of poor self-discrimination, or “self-infiltration” of self-alien goals.

Research using the self-discrimination task has shown that state-oriented individuals (with high preoccupation scores) show higher self-infiltration rates than action-oriented individuals (Kuhl & Kazén, 1994). This means that state-oriented individuals are especially likely to misperceive assigned goals as self-chosen. Notably, the link between state orientation and self-infiltration emerges only for unattractive activities, not for attractive activities (Kazén, Baumann, & Kuhl, 2003). Using a controlled laboratory paradigm, these findings confirm that state-oriented individuals have a heightened susceptibility to alienation. This conclusion is further bolstered by findings that state-oriented individuals, more than their action-oriented counterparts, are prone to adopt personal goals that are at odds with their implicitly assessed needs (Baumann et al., 2005; Brunstein, 2001). Satisfaction of implicit needs is an important determinant of emotional well-being (Brunstein, Schultheiss, & Grässmann, 1998). Thus, the mismatch between goals and needs suggests that state-oriented individuals ignore their emotional needs when selecting their goals.

Why would state-oriented individuals pursue unattractive goals and activities that offer them no emotional satisfaction? Kuhl (2000) has theorized that alienation from the self is due to persistent negative affect. Specifically, Kuhl has proposed that negative affect modulates access to integrated self-knowledge, such that people can only access integrated self-representations (which encode information about people’s emotional preferences) when people are in a calm, relaxed affective state. According to this affective modulation model, state-oriented individuals’ proclivity towards self-infiltration is due to these individuals’

inability to down-regulate negative affect. In line with this reasoning, two studies showed that the link between state orientation and self-infiltration emerges only when individuals experience high levels of sadness (Baumann & Kuhl, 2003). Further consistent with the affective modulation model are findings that stress hormones (i.e., cortisol) are associated with self-infiltration rates (Quirin, Koole, Baumann, Kazén, & Kuhl, 2009).

Like Kuhl (2000), we believe that negative affect plays an important role in alienation/self-infiltration processes. Nevertheless, in keeping with the ego fixation model, we suspect that self-control processes also play an important, if somewhat underappreciated, role in this context. One clue that points to the influence of self-control is that, in the self-infiltration task, state-oriented individuals do not erroneously perceive activities that were not assigned by the experimenter to be self-chosen. This pattern suggests that inhibited access to self-knowledge is not the whole reason why state-oriented individuals are prone to self-infiltration. Indeed, the findings show that state-oriented individuals only misperceive assigned activities as self-chosen. Thus, besides poor access to integrated self-knowledge, the observed self-infiltration among state-oriented individuals seems to also reflect a heightened priority that is given to externally assigned goals. This prioritization of assigned goals, from the perspective of the ego fixation model, is likely to be driven by self-control processes.

Other findings from the self-infiltration paradigm may also be considered from an ego fixation perspective. First, the findings that sadness increases self-infiltration among state-oriented individuals (Baumann & Kuhl, 2002) could be (partly) due to the notion that sadness promotes a more analytic processing style that is conducive to self-control (Forgas, 1995). Second, self-infiltration rates among state-oriented individuals increase after the induction of a to-be-completed intention (Kuhl & Kazén, 1994) and heightened performance pressure (Kazén et al., 2003), both manipulations that encourage reliance on intentional self-control. Taken together, several key findings from the self-infiltration paradigm seem compatible

with the ego fixation model. Of course, self-infiltration studies were not explicitly designed to test the ego fixation model, and therefore we must be cautious to draw conclusions from this literature. We therefore turn to recent research that was explicitly conducted from the perspective of the ego fixation model.

*Empirical Research, Part II: Consumer Psychology*

Our initial studies on ego fixation were conducted in the domain of consumer psychology. We were drawn to this area in part because thinkers like Fromm (1941, 1976) have suggested that modern consumers are increasingly alienated from their genuine needs (see Kasser, 2002, for a modern analysis in the same spirit). In addition, prior studies of alienation and state orientation were largely restricted to preferences for somewhat degraded stimuli, like simple movements (e.g., Kuhl & Kazén, 1994) or abstract geometrical patterns (Guevara, 1994, discussed in Kuhl & Beckmann, 1994a). We thus wondered if alienation tendencies among state-oriented individuals might extend to evaluations of more complex and meaningful everyday objects, such as commercially available products.

Our first study (Jostmann & Koole, 2002) was inspired by a now-classic experiment by Wilson and Schooler (1991), who had participants taste five different jams that were pretested by trained sensory panelists. The results showed that participants who reasoned about their tastes had preferences that corresponded less well with expert ratings than the preferences of participants who spontaneously provided their taste ratings. From the perspective of our ego fixation model, reasoning may have this effect because it is associated with self-control processes, which may alienate individuals from their intrinsic preferences. If this is correct, then the effects of reasoning should be more pronounced a) when individuals are state- rather than action-oriented, and b) when the rated products are low in intrinsic pleasantness (see Kazén et al., 2003).

To test these predictions, we invited a group of seventy participants to come and taste

three brands of soft drinks (colas), which included one brand that was rated favorably and two brands that were rated unfavorably by trained sensory experts. Half of the participants were induced to reason about their preferences, the remaining participants simply rated the soft drinks. In line with the ego fixation hypothesis, we predicted that reasoning about preferences would reduce the correspondence between state-oriented participants' preferences and expert rankings for the low-quality soft drinks. We predicted no such effect for action-oriented participants. Because state-oriented individuals are not inclined to ignore their intrinsic preferences when they are presented with attractive stimuli (Kazén et al., 2003), we predicted that effects of reasoning on state-oriented participants would be eliminated for the high-quality soft drink.

As can be seen in Figure 1, the results of the cola tasting study were consistent with the ego fixation model. When spontaneously evaluating soft drinks, action- and state-oriented participants' preferences corresponded equally well with the rankings of trained experts. When reasoning about their evaluations, however, preferences of state-oriented participants of low-quality soft drinks diverged significantly more from experts than did the preferences of action-oriented participants. These findings support the notion that the alienating effects of reasoning about preferences occur mainly among state-oriented individuals. As such, these findings connect social-cognitive theories of introspection (Wilson, 2002) with the action-theoretical perspective that underlies the ego fixation hypothesis. Moreover, as far as we know, the cola tasting study is the first to observe effects of state orientation on taste sensations and in the domain of consumer product evaluations.

In our second study (Bouw, 2011), we sought to conceptually replicate the cola tasting study and extend the ego fixation model to a different domain. Specifically, we asked sixty-four participants to evaluate the beauty of artwork. Borrowing from Nordgren and Dijksterhuis (2009), we presented participants with paintings. Some of these paintings came

from the Museum of Modern Art in New York and are considered by experts to be of the highest quality. Other paintings came from the Museum of Bad Art in Boston and are considered by experts to be of the lowest quality. Participants evaluated a subset of the paintings twice, so that we could assess the stability of their preferences. When people are alienated, their preferences are more strongly guided by external directives and fragmented experiences. Consequently, alienation is likely to destabilize people's evaluations (Kuhl & Beckmann, 1994a; see also Nordgren & Dijksterhuis, 2009; Wilson et al., 1993). Instability of participants' evaluations of the paintings was therefore our measure of alienation.

In between rating paintings for the first and second time, participants completed a planning exercise that contained our manipulation of self-control priming. To prime a state of high self-control, we asked participants to make a detailed plan of how they would implement an unpleasant duty that they had to perform in the next two weeks. Prior work has shown that implementation planning increases people's commitment to an intention, even if the intended action is aversive (Gollwitzer, 1999). As such, planning an aversive activity can be expected to mobilize self-control processes. To prime a state of low self-control, we asked participants to make a detailed plan of enacting a fun activity they intended to perform in the next two weeks.

The ego fixation hypothesis suggests that activating the self-control mode leads state-oriented individuals to become alienated from their intrinsic aversions. In line with this, we predicted that priming self-control would destabilize evaluations of low-quality paintings among state-oriented participants but not among their action-oriented counterparts. We predicted no such effect for evaluations of high-quality paintings. The results confirmed our predictions: After planning an aversive activity, which presumably activates a state of heightened self-control, state-oriented participants displayed greater instability in their evaluations of paintings than action-oriented individuals. Notably, no such pattern was

observed after participants had planned a fun activity nor for evaluations of high quality art. Finally, the effects of planning and state orientation on art evaluations were not mediated by negative mood. The latter finding is consistent with the notion that self-control processes contribute to alienation over and above the effects of negative affect.

Taken together, our first two studies provide evidence for the ego fixation hypothesis, by demonstrating that self-control processes can impair state-oriented individuals' ability to evaluate low-quality products. One potential social implication of these findings is that state-oriented individuals may be more easily cajoled into doing things that are aversive to them. Indeed, state-oriented individuals display more conformity in the classic Asch paradigm (1955; Koole, Jostmann, Beckmann, & Baumann, 2012). We have conceptually replicated this finding several times. For instance, in one study, we found that state-oriented individuals are more likely to make large concessions to their partner in a simulated negotiation (Koole et al., 2012).

Likewise, in another study, we observed that state-oriented individuals display a larger foot-in-the-door-effect, that is, they were more likely to comply with a larger request for making blood donations after they had initially agreed to a smaller request. From the perspective of the ego fixation model, a small initial request leads to exertion of self-control, which impairs state-oriented individuals' ability to turn down subsequent requests. Notably, the ego fixation model predicts greater conformity among state-oriented individuals only when conforming to social norms requires self-control, i.e., doing something that is effortful and aversive. In contexts where conformity is easy and pleasant (e.g., simply mirroring other's people nonverbal behavior), we would not expect state-oriented individuals to conform more than their action-oriented counterparts.

### *The Somatic Neglect Hypothesis*

Why would state-oriented individuals be less able to evaluate aversive stimuli? One important clue is provided by the self-infiltration studies by Kazén et al. (2003), which observed that state-oriented individuals have faster decision times than action-oriented individuals in deciding whether an aversive activity was externally assigned or self-chosen. This intriguing finding suggests that state-oriented individuals do not access information that allows them to determine to what extent they prefer (or rather, reject) an aversive stimulus. Of course, this begs the question what kind of information it is that people require for this evaluative process.

Potentially relevant to this question, research on decision-making has found that people rely on their bodily responses in rejecting aversive decision alternatives. Specifically, people display anticipatory skin conductance responses when they are considering choices that were associated with heavy losses (Damasio, Tranel, & Damasio, 1997; see also Dunn et al., 2010). These bodily responses may serve as *somatic markers* (Damasio, 1994) that guide people away from potentially dangerous decisions. Indeed, somatic markers are particularly influential among individuals who are high on interoceptive abilities, that is, who can perceive subtle bodily changes (Dunn et al., 2010). These findings suggest that the perception of changes in the body is an important determinant of intuitive decision-making processes, particularly for rejecting aversive stimuli.

Extrapolating from the aforementioned research, it is conceivable that ego fixation processes interfere with the perception of bodily changes, thereby undermining people's ability to use somatic markers in their decisions. We refer to this extension of the ego fixation model as the *somatic neglect hypothesis*. The cola-tasting study that we discussed in a previous section (see Figure 1) already hints at a link between ego fixation and somatic neglect. The results of that study indicate that a self-control process (i.e., thinking about the

reasons for one's preferences) may lead state-oriented individuals to be less sensitive to their taste experiences. This pattern is compatible with the idea that ego fixation may lead individuals to be less discriminating in perceiving their own physical states. However, we did not design the cola-tasting study with the goal of testing the somatic neglect hypothesis. We therefore developed a new program of research to examine the link between ego fixation and somatic neglect.

One consequence of somatic neglect may be that state-oriented individuals are likely to feel more disconnected from the body and things associated with the body. A study by Koole (2008) tested this notion in a study that first manipulated self-control by asking participants to describe a colorful painting either freely (the low self-control condition) or while avoiding the use of color words (the high self-control condition; see Liberman & Förster, 2000). After this, participants were asked to smell the skin on their arm and report how much they liked this smell. The results showed that the effects of self-control differed strongly by action/state orientation. Among state-oriented participants, engaging in self-control led to *less* liking of their own body odor. This effect is consistent with the idea that state-oriented participants became somewhat alienated from their body after exerting self-control. By contrast, among action-oriented participants, engaging in self-control led to *more* liking of their own body odor. The latter effect was unexpected, and may indicate that action-oriented participants actively counter-regulate the influence of self-control on their bodily experience (see further Koole, 2009, on the notion of counter-regulation).

A second consequence of somatic neglect is it may lead state-oriented individuals to ignore their bodily needs. We explored this idea in the Master's thesis research of Sarah Strübin (2010). In this study, we first activated a self-control mode by asking all participants to describe colorful painting without using of color words. Next, we asked participants to report how long it was since their last meal and asked then to take part in an alleged

“consumer test”. During this test, participants tasted two different kinds of food, radishes and cheese crackers. Participants could sample as much of these foods as they wanted and rated how much they liked each type of food.

Normally, one would expect people to like the cheese crackers more and to eat more of these crackers as more time elapsed since their last meal, because food deprivation creates a greater need for high-caloric foods. We indeed found this pattern among action-oriented participants, who display a strong correlation between the time since their last meal and their liking for cheese crackers, and how much they ate from the cheese crackers. However, this pattern was completely absent among state-oriented participants. Indeed, the correlation between the time since their last meal and their liking for cheese crackers was (non-significantly) negative. As state-oriented participants became more food-deprived, their liking and consumption of high-caloric foods declined and, indeed, they started to eat more low-caloric foods (radishes). These findings suggest that somatic neglect may lead state-oriented individuals to ignore even a powerful somatic experience such as hunger.

Finally, a third consequence of somatic neglect may be that it leads state-oriented individuals to be disconnected from the immediate here and now. We explored this notion using a paradigm from visual perception research. People often fail to detect changes in visual scenes, even when these changes are large (i.e., take up to 30% of the scene) and meaningful (Rensick, 2002). We hypothesized that state-oriented individuals might be more susceptible to change blindness after exerting self-control. In his Master’s thesis research, David Llamas (2004) manipulated self-control by having participants perform a boring or interesting task. Next, participants were presented with visual scenes, in which elements were sometimes changed after a brief flicker (i.e., white screen). In line with earlier research, participants often failed to detect the visual changes. Importantly, this change blindness was most pronounced among state-oriented participants who had just performed a boring task. It

thus appears that self-control may induce perceptual lapses among state-oriented individuals, a finding that is in line with the somatic neglect hypothesis.

Taken together, three studies using different paradigms have yielded initial evidence for the hypothesis that self-control may induce somatic neglect among state-oriented individuals. However, it should be noted that the current studies need to be followed up with direct replication studies and extensions to probe more deeply into the nature of somatic neglect. Thus, the empirical support for somatic neglect is encouraging, though still preliminary.

### **Conclusions and Outlook**

Compared to other animals, human beings are endowed with a greatly enhanced capacity for self-control. This capacity for self-control is tremendously useful, by allowing people to behave responsibly even in the face of temptations, distractions, and other impulses that conspire to keep people from doing the right thing. Indeed, according to some analyses, all kinds of social and personal benefits can be realized by exercising self-control. If people only had more self-control, they might achieve better grades at school, work more productively, eat more healthy foods, exercise more regularly, stay more faithful to their partner, commit less crimes, and so on.

Should psychologists now go ahead and teach people to apply as much self-control as possible to every imaginable aspect of their lives? Maybe not. Indeed, the present chapter suggests that people can sometimes have too much self-control, in that chronic reliance on self-control can promote certain kinds of self-regulatory failure. We proposed the ego fixation hypothesis, which states that self-control processes, once instigated, may persist involuntarily. One important consequence of ego fixation may be that people continue to suppress their dislike for aversive stimuli. In line with this, we have reviewed evidence that priming self-control processes can impair people's ability to evaluate aversive stimuli,

leading to memory errors and unstable evaluations of aversive stimuli. Another consequence of ego fixation may be somatic neglect, such that priming self-control processes may lead people to dislike their bodily experiences, ignore their bodily needs, and experience perceptual lapses.

Although we regard ego fixation as a general mechanism that can affect everyone, some individuals appear to be more vulnerable to ego fixation than others. Indeed, our research has consistently shown that state-oriented individuals, who are prone to experience persistent motivational and emotional states, are especially likely to develop ego-fixated states. We suspect that state-oriented individuals' proneness for ego fixation may render these individuals vulnerable to various psychological problems. Indeed, within clinical psychology, therapists have observed a set of phenomena that have some intriguing parallels with ego fixation. In particular, clinicians have discussed something they refer to as *experiential avoidance*, defined as "an unwillingness to maintain contact with internal experiences, such as sensations, emotions, and cognitions, and efforts to avoid these experiences, or the situations that occasion them, even when doing so is harmful (Baer, 2007).

Therapists have suggested that experiential avoidance may contribute to the onset and maintenance of many psychological problems and disorders, including depression, compulsive behavior, and addiction (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). So far, however, experiential avoidance has only been investigated through self-report. However, if ego fixation can be linked to experiential avoidance, clinical psychologists would have an experimental model of the causal processes that lead to experiential avoidance. It thus would be important to investigate if ego fixation tendencies among state-oriented individuals are indeed implicated in experiential avoidance. Furthermore, future research could examine if therapies designed to overcome experiential avoidance (e.g., mindfulness-based therapy, see Brown, Ryan, & Creswell, 2007) can prevent ego fixation

among state-oriented individuals. In so doing, the ego fixation model may illuminate the mechanisms of change in psychotherapeutic interventions.

Whereas state-oriented individuals seem to become ego-fixated rather easily, it appears that action-oriented individuals are immunized to an important degree against ego fixation. Just how action-oriented individuals achieve this immunity remains somewhat unclear. Based on what we know so far, it appears that action-oriented individuals remain more relaxed and mindful of their personal preferences in situations that pressure them into mindless obedience. For instance, as we have seen, action-oriented individuals take more time in verifying whether their obligations were self-chosen or merely imposed (Kazén et al., 2003). Moreover, our somatic neglect studies suggest that action-oriented individuals remain more in touch with their “inner vibes”, somatic and perceptual experiences that take place in the here and now, which likely inform action-oriented individuals of their emotional preferences. In future research, we hope to improve our current, admittedly sketchy, understanding of how action-oriented individuals manage to resist ego fixation.

One important way to extend ego fixation research would be to use stronger (more demanding) inductions of self-control. So far, research has used fairly subtle self-control inductions, which either primed self-control or led individual to exert self-control for no more than five minutes. Although it seemed sensible to start our research with this light-handed approach, it remains to be seen if action-oriented individuals can still prevent ego fixation in situations that require more prolonged self-control. Theoretically, it is plausible that even action-oriented individuals would have a breaking point, so that they eventually should become ego-fixated if they have to continue to engage in self-control for extended periods of time. And how would action-oriented individuals respond to such situations? Would they still have a self-regulatory advantage over state-oriented individuals? Or would action-oriented individuals be outperformed by state-oriented individuals under these conditions, given that

the latter are likely to be experienced with functioning in an ego-fixated state? We hope to explore these intriguing questions in the upcoming years.

Although many questions remain, we hope to that the present chapter contributes to a more balanced view of self-regulation. Oftentimes, self-regulation is equated with a kind of inner battle, in which people forcefully fight against their emotional impulses that interfere with their cold goals. Although such inner battles sometimes cannot be avoided, it is psychologically costly for people to live in a continual state of war with themselves. More sustainable forms of self-regulation will therefore seek to work with people's emotional states rather than against them. For instance, rather than forcing themselves to look away from tasty but fattening dishes, efficient self-regulators may move towards environments that contain only healthy foods (see De Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012). The most effective forms of self-regulation may thus paradoxically minimize people's need to rely on self-control.

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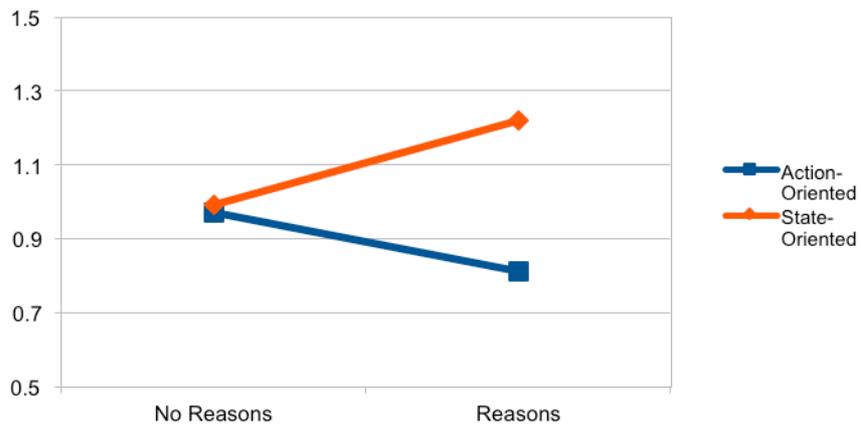
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*Table 1: Illustrative Items of the Disengagement-Preoccupation Facet of Action versus State Orientation*

1. When I have lost something that is very valuable to me and I can't find it anywhere:
  - A. I have a hard time concentrating on anything else.
  - B. I Put it out of my mind after a little while.
2. If I've worked for weeks on one project and then everything goes completely wrong with the project:
  - A. It takes me a long time to adjust myself to it.
  - B. It bothers me for a while, but then I don't think about it anymore.
3. When I'm in a competition and have lost every time:
  - A. I can soon put losing out of my mind.
  - B. The thought that I lost keeps running through my mind.
4. If I had just bought a new piece of equipment (for example a smart phone) and it accidentally fell on the floor and was damaged beyond repair:
  - A. I would manage to get over it quickly.
  - B. It would take me a long time to get over it.
5. If I have to talk to someone about something important and, repeatedly, can't find him or her at home:
  - A. I can't stop thinking about it, even when I'm doing something else.
  - B. I easily forget about it until I see the person.
6. When I've bought a lot of stuff at the store and realize when I get home that I've paid too much-but can't get my money back:
  - A. I can't usually concentrate on anything else.
  - B. I feel paralyzed.

*Figure 1: Disagreement between Participants and Experts in Preferences for Low-Quality Soft Drinks as a Function of Action/ State Orientation and Reasoning about Preferences.*



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Sander L. Koole, Department of Clinical Psychology, VU University Amsterdam, The Netherlands. Nils B. Jostmann, University of Amsterdam, Department of Social Psychology, The Netherlands. Preparation of this article was facilitated by a fellowship of Sander Koole at the Center for Advanced Study in the Behavioral Sciences of Stanford University in 2009/2010 and a Consolidator Grant of the European Research Council awarded to Sander Koole in 2011. Address correspondence to Sander L. Koole, Department of Clinical Psychology, VU University Amsterdam, van der Boechorststraat 1, 1081 BT, Amsterdam, the Netherlands. Email: S.L.Koole@vu.nl.