



Guilty, free, and wise: Determinism and psychopathy diminish learning from negative emotions

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ABSTRACT

Emotional experiences can bring about personal growth. For instance, feeling guilty may prompt one to learn from a mistake, and this learning can bring about different and better future behavior. Three studies found that belief in free will facilitated learning from emotional experiences, as inducing participants to disbelieve in free will was associated with reduced learning. Emotional responsiveness, as defined by low psychopathy scores, also facilitated learning from emotional experiences (Studies 2 and 3). The degree of learning associated with emotional experiences was measured by self-rating (Study 1), independent evaluations of lessons learned (Study 2), and whether participants joined a campus recycling program (after being made to feel guilty about an environmental transgression; Study 3).

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The notion that emotions directly cause behavior (e.g., fear causes fleeing) may be popular, but a recent literature review found little empirical support for it (Baumeister, Vohs, DeWall, & Zhang, 2007). Instead, the review found evidence that emotions *indirectly* affect behavior. For instance, feeling guilty may prompt one to learn from a mistake, which then affects how one intends to act in the future.

The present investigation sought to clarify the conditions under which people learn functional lessons from emotional experiences. Our expectation was that belief in free will is an important factor in learning from emotions, such that discouraging belief in free will would undermine learning from emotional experiences. A second prediction was that trait differences in responsiveness to emotions, as defined by psychopathy, would influence learning from emotions. Specifically, we expected that people high in psychopathy (i.e., emotionally unresponsive) would learn less from emotional experiences than people low in psychopathy. We also predicted an interaction between belief in free will and psychopathy, such that disbelief in free will would reduce learning primarily among nonpsychopaths.

Learning from emotional experiences

It is important to clarify what emotions are of interest to the present investigation because there is no unanimity of opinion in the literature regarding what constitutes feeling an emotion. The present investigation is concerned with *conscious emotions*. Conscious emotions are best defined in contrast to automatic affect, which is a relatively immediate and fleeting evaluation of something as good or bad, of which one may

or may not be aware (Baumeister et al., 2007; Russell, 2003). Conscious emotions are fully developed, arise and dissipate slowly, are deeply entwined with cognition, and often involve physiological changes. Conscious emotions are more likely than automatic affect to produce opportunities for learning, so conscious emotions will be the focus of the present work.

Indirect causation theory (Baumeister et al., 2007) holds that conscious emotions enable people to profit from their experiences. This is because conscious emotions promote cognitive reflection, and the content of that reflection affects future behavior. According to the theory, emotions indirectly affect future behavior by virtue of their influence on cognition. For example, a person who carelessly makes a comment that hurts the feelings of a valued friend is likely to feel guilty, which may prompt the offending individual to reflect on the incident and resolve to be more sensitive in the future. Resolving to be more sensitive under such circumstances seems like a rational conclusion, and one that would likely benefit future interactions. Yet this is at odds with the popular notion that emotions primarily cause irrational and socially undesirable behaviors. Instead, indirect causation theory views emotions as indirectly promoting beneficial conduct.

Research has demonstrated that experiencing conscious emotions stimulates cognitive reflection, consistent with the notion that emotions affect behaviors indirectly, via cognition. In one study, participants who were asked to describe a time they hurt someone, thereby causing feelings of guilt, spontaneously described learning something from the event (Baumeister, Stillwell, & Heatherton, 1994, 1995). Multiple literature reviews have also found that conscious emotions are closely tied to learning, reappraisal of past actions, and counterfactual thinking—all of which can shape future behavior. Schwarz and Clore (2007) reviewed published studies on emotion and concluded that the effect of emotions is primarily mental, rather than behavioral, consistent with the

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position that emotions stimulate cognitive reflection. One survey of the literature concluded that sadness increased counterfactual thinking (Johnson-Laird & Oatley, 2000). This makes sense from the perspective of indirect causation, as counterfactual thinking might enable one to avoid the actions that lead to sadness. A review by Roeser (1997) concluded that negative emotions in general are the main source of counterfactual thinking, and counterfactual thinking can inform future behavior. In sum, empirical evidence supports the view that emotions prompt people to reflect cognitively in order to learn a functional lesson for the future (see Baumeister et al., 2007, for a thorough explication of the theory).

Yet the process of learning from emotions is imperfect and uneven in its success, such that some emotional events cause people to learn quickly and other events do not. The focus of the current investigation was the identification of variables that would moderate the relationship between emotional events and learning lessons. We concentrated on two variables expected to be closely related to learning from emotional experiences: belief in free will and emotional responsiveness.

Belief in free will

Free will, as observed by Mele (2006), has no standard definition, but is generally understood to be the power or ability to perform free actions. There are several philosophical refinements on this basic definition (cf. Mele, 2009). The one that best fits the present work is the agent-causal libertarian theory of free will, a view that rejects determinism and regards agents (people) as the source of free actions in a way that is not completely reducible to their emotional or motivational states. Agent-causal libertarianism does not assert that all actions all people perform at all times are free actions, only that people can, and sometimes do, act freely.

Thus, belief in free will refers to the extent to which one perceives his or her own actions, and presumably those of others, as being freely chosen and caused by the individual. Belief in free will seems to be the default position for most people, as studies in which people's beliefs about free will are influenced experimentally (via determinism, free will, and control conditions) demonstrate negligible differences between the free will and control conditions on outcome variables, whereas the determinism condition differs from both control and free will conditions on outcome variables (Baumeister, Masicampo, & DeWall, 2009; Vohs & Schooler, 2008). Yet people do not universally subscribe to a belief in free will; some people reject the view that they can cause their behavior and can choose actions freely, instead favoring a belief in the inevitability of their actions. That is, some people espouse views in which their actions are considered the inevitable outcome of childhood experiences, genetics, fate, etc. The implications of belief and disbelief in free will seem especially relevant to the process of learning from one's experience. If a person did not believe that behavior was freely chosen—if a person did not believe in free will—there would be little reason to go to the cognitive effort of contemplating behavioral alternatives that, in the absence of free will, do not exist. In other words, disbelief in the possibility of alternatives makes pondering alternatives seem not to be worth the mental effort. In contrast, belief in free will is readily compatible with thinking that one could have acted differently in the past, and a that a different (perhaps more favorable) outcome was possible. Consequently, determinists may be less likely than those who believe in free will to put forth the effort of reflecting upon alternative ways they could have acted following an emotional event.

The proposal that disbelief in free will would reduce reflecting on emotional events seems especially likely when one considers that people already have a strong tendency to limit cognition (Fiske & Taylor, 1991), which suggests that people may welcome a reason not to exert themselves mentally in the contemplation of how one might have acted. Indeed, Vohs and Schooler (2008) demonstrated that cognitive

exertion, as defined by making decisions, consumes a limited mental resource (a process termed *ego depletion*; Baumeister, Bratslavsky, Muraven, & Tice, 1998). The limited nature of mental resources suggests a need to conserve them, and pondering logically impossible events seems like a poor allocation of such resources. In other words, providing a reason not to bother thinking about alternative outcomes to past events is likely to make people less willing to do so. In sum, convincing people that they are deterministically bound to act the way they do provides a reason not to engage in thoughtful consideration of alternative ways of acting, and considering alternative ways of acting is an essential part of identifying an optimal way of acting. Therefore we expected disbelief in free will to disrupt the process of learning from one's experiences.

The expectation that disbelief in free will would be associated with an absence of effortful psychological processes is consistent with recent research. Vohs and Schooler (2008) showed that participants who were persuaded not to believe in free will cheated more on a test (thereby stealing money) compared to when a belief in free will had been affirmed or when participants' free will beliefs were unaltered. In these studies, participants were paid for correctly solving problems. Cheating was made to be an easy and effective way to get money relative to solving the problems correctly, and all participants had equal opportunity to cheat and (presumably) an equal desire for money. However, participants in the determinism condition were given a reason—all outcomes are inevitable—not to bother exerting control over the impulse to cheat. Results indicated that participants in the determinism condition did cheat more, apparently because efforts to resist the impulse to cheat were undermined by the view that whether they cheated had been predetermined.

These findings were extended by research showing that inducing disbelief in free will increased acts of aggression and decreased acts of helping (Baumeister et al., 2009). When provoked, the automatic response for most people is to act aggressively, and overcoming the desire to act aggressively requires expending mental energy (DeWall, Baumeister, Stillman, & Gailliot, 2007). Similarly, behaving selfishly seems to be automatic, such that helping others requires one to exert control over selfish impulses (DeWall, Baumeister, Gailliot, & Maner, 2008). Thus, like cheating, acting aggressively and behaving selfishly are automatic impulses that require the exertion of self-control or mental energy to override them, and disbelief in free will seems to undermine mental exertion. We expected that the tendency for deterministic beliefs to serve as a cue that one need not bother expending mental efforts would extend to the cognitive reflection necessary to learn from emotional experiences, and we conducted a pilot study as a preliminary test of our hypothesis.

Pilot data

The experimenter asked participants to think about an experience that caused them to feel guilt, and to indicate whether they learned anything valuable from the experience. We found that people who endorsed free will beliefs (see Nadelhoffer, Kvaran, & Nahmias, 2009) were the most likely to report having learned something valuable from the event ($r = .22, p = .03$). This is consistent with our expectation that belief in free will is important to learning from emotional experiences.

Emotional responsiveness

We expected that emotional experiences would promote learning (unless belief in free will was undermined), but this assumed one is responsive to emotions. Individual differences in emotional responsiveness can be viewed in two ways. The first is in the strength with which emotions are experienced, with emotionally responsive people feeling emotions more strongly than emotionally unresponsive people, who experience shallower emotions. One would expect people who experience emotions strongly to learn more from an emotional

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