Dimensions of perfectionism, behavioral inhibition, and rumination

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ABSTRACT

The behavioral inhibition system (BIS) is believed to underscore individual differences in perfectionism, but existing research has yielded an inconsistent pattern of associations. The current study sought to clarify the associations among trait perfectionism, behavioral inhibition, and behavioral activation in two samples (N's of 112 and 234). We also investigated the association between these factors and rumination. All participants completed measures of perfectionism and BIS/BAS activation. Sample 2 participants also completed a trait measure of rumination. Data analyses showed across samples that self-oriented perfectionism was linked with BIS scores. Further, socially prescribed perfectionism was correlated with trait rumination, and behavioral inhibition partially controlled this relationship. These results demonstrate links between perfectionism and BIS activation and suggest that anxious forms of distress and maladaptive cognitive styles among perfectionists are mediated by BIS activation. The findings suggest that certain perfectionists are predisposed to distress and cognitive rumination as a result of a strong BIS.

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1. Introduction

In recent years, there has been increasing attention paid not only to the deleterious effects of trait perfectionism, but also to factors involved in its development and maintenance. One area receiving substantial interest is the cognitive processing of threat and reward stimuli. Perfectionism is marked by several cognitive biases, including a tendency towards rumination and generalization of failures, strong attention to errors and a tendency to interpret ambiguous feedback as critical or negative (Alden, Bieling, & Wall, 1994; Gilbert, Durrant, & McEwan, 2006). Recent attempts to explain these biases have focused on sensitivity of the behavioral inhibition and approach systems (BIS/BAS), a neurologically based model of goal regulation. However, the mixed findings to date necessitate further research. Accordingly, the current study re-examines the extent to which trait perfectionism is associated with indices representing the behavioral activation and behavioral inhibition systems. Furthermore, the BIS is proposed as a mediating variable in the association between perfectionism and rumination, strengthening the argument for its role in the development and maintenance of perfectionism.

1.1. Trait perfectionism

This research focuses primarily on the Hewitt and Flett (1991) tripartite model of perfectionism. In this model, self-oriented perfectionism (SOP) is defined broadly as a strong internal motivation to be perfect and to set unrealistic standards for oneself. Socially prescribed perfectionism (SPP) reflects a need to earn and maintain approval from others, coupled with the belief that others expect perfection. The third MPS variable, other-oriented perfectionism, is not considered in this study, as it has been associated with interpersonal difficulty, but not consistently with negative personal symptoms related to cognitive processing (Flett, Besser, Davis, & Hewitt, 2003; Hewitt & Flett, 1991).

Whether SOP is maladaptive is controversial, as it is related positively to conscientiousness (Klibert, Langhinrichsen-Rohling, & Saito, 2005) but negatively with self-actualization, unconditional self-acceptance, and tolerance for failure (Flett et al., 2003). The diathesis-stress view proposed by Hewitt and Dyck (1986) highlights the need to consider contextual factors. Self-oriented perfectionists may exhibit strong drive and resourcefulness, but they also are more vulnerable to depression in the face of serious crises or failures that trigger cognitive biases (see Hewitt & Flett, 2002). Socially prescribed perfectionism (SPP) is primarily maladaptive. SPP is associated with depression, suicidal ideation, anxiety, and stress, partially due to a motivation to avoid failure (Blankstein, Lumley, & Crawford, 2007). People with high levels of SPP also
respond to ambiguous or critical feedback as very negative (Gilbert et al., 2006) and view their own social behavior as negative, even when others observe their interactions as successful (Alden et al., 1994). These pessimistic interpretations and the need to avoid failure may partially be caused by a cognitive predisposition towards vigilance and sensitivity to threat (Flett, Hewitt, Oliver, & MacDonald, 2002), cognitive styles that should be closely linked with high BIS functioning.

### 1.2. Behavioral inhibition and approach systems

Reinforcement Sensitivity theory posits that three neurologically distinct mechanisms within the brain influence our emotions, cognitions and behavior, with respect to appetitive and aversive stimuli (Gray & McNaughton, 2000). The behavioral inhibition system (BIS) and behavioral approach system (BAS) are systems that moderate goal-oriented behavior. Although both systems are necessary for survival, they can lead to psychopathological conditions when operating in the extremes of hyper- or hypo-activation. The Fight, Flight or Freeze System (FFFS) responds to immediate threats of harm, as well as both conditioned and unconditioned threats. Although the FFFS is not central to the concerns of this article, it is worth noting that, to date, no one has considered the role high sensitivity to punishment may play in the development of perfectionism. That is, perfectionists may not only reflect greater concern about punishment, but also greater emotional pain when experiencing punishment.

The BAS is a reward-sensitive system that mediates goal-oriented behavior (Gray & McNaughton, 2000). It responds to rewards or the cessation of punishments by activating emotions that encourage approach behaviors, such as happiness, hope or zeal (Gray, 1990; McGregor, Gailliot, Vasquez, & Nash, 2007). High BAS sensitivity is believed to be linked with seeking incentives and rewards by pursuing exceptionally high goals (Johnson & Carver, 2006), and this suggests that the exceptional goal striving of perfectionists may, at least in part, reflect BAS sensitivity. Extreme BAS sensitivity should not be regarded as adaptive because it is linked with lifetime levels of hypomania (Johnson & Carver, 2006).

The BIS also mediates goal behavior by responding to stimuli indicating a blocked goal or the presence of conflicting goals. Although it was previously understood that the BIS responded to expectation of threats or aversive stimuli that are certain to come, this role has been re-assigned to the FFFS, in both the neurological structures involved (Gray & McNaughton, 2000) and in its measurement as a personality construct (Heym, Ferguson, & Lawrence, 2008; Smillie, Jackson & Dalgleish, 2006). The BIS is closely associated with negative affect and depression (Gable, Reis, & Elliot, 2000; Kasch, Rottenberg, Arnow, & Gotlib, 2002). High BIS scores predict anhedonic depression when BAS is low and mixed anxiety-depression when BAS is high (Hundt, Nelson-Gray, Kimbrel, Mitchell, & Kwapi, 2007). The authors suggest that the latter effect may be due to the constant experience of approach/avoidance conflicts.

Recent studies relating the BIS/BAS and perfectionism have resulted in mixed findings. There is ample indirect evidence linking the BIS\(^1\) and aspects of perfectionism. For instance, an indirect link is suggested by measures of anxiety sensitivity, which have been significantly associated with not only self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP), but the BIS \((r = .58)\) as well (Flett, Greene, & Hewitt, 2004). In addition, socially prescribed perfectionists are highly sensitive to criticism, evaluate their own social behavior more negatively then others and are more likely to interpret ambiguous feedback as negative (Alden et al., 1994; Hewitt & Flett, 1993).

Despite theoretical expectations, recent findings for BIS/BAS and perfectionism combine to provide an unclear picture. Two studies have found a strong link between perfectionism and high BIS sensitivity. In one, all perfectionism dimensions were strongly associated with BIS sensitivity \((.50-.61)\), while SOP was associated with BAS-Drive and Reward, but not fun-seeking (Flett et al., 2002). O’Connor and Forgan (2007) replicated these findings using the same measures with a larger sample, though the correlations were more modest. Again, SOP and SPP were associated with the BIS subscale \((r = .33 \text{ and } .35)\), while SOP was associated positively but weakly with BAS-Drive \((r = .14)\).

In contrast, other studies have yielded results not in keeping with these findings. One study with the Frost MPS (Frost, Marten, Lahart, & Rosenblate, 1990) found that the personal standards subscale (which is similar to SOP) yielded similar correlations to previous studies, but only one of the other five MPS dimensions (Doubts about Actions) was linked with BIS (Chang et al., 2007). Overall, the authors expressed surprise over the fact that few significant correlations with the BIS subscale emerged. In related research conducted while developing a new performance perfectionism scale, Chang (2006) found that BAS was associated positively with a measure of negative self-oriented perfectionism but it was entirely unrelated to measures of socially prescribed perfectionism.

A unique and unexpected pattern emerged from a study by Kaye, Conroy, and Fifer (2008). This study of 372 college students found that the associations obtained were small in magnitude, and SPP and SOP were both associated with lower BIS scores. Although the perfectionism dimensions were linked with reduced BIS scores, both perfectionism dimensions were associated with higher levels of fear of failure.

The current study not only re-examined the associations between perfectionism and BAS indices, it also tested the extent to which the BIS could mediate the often-found link between trait perfectionism and rumination (Harris, Pepper, & Maack, 2008; O’Connor and Forgan, 2007). Rumination is focused on here because of the theoretical support for BIS being linked to rumination and an underlying proneness to anxiety (Gray & McNaughton, 2000). This association was summarized aptly by Corr and Perkins (2006) who noted that goal conflicts (e.g., approach versus avoidance conflicts) are addressed by the BIS. Specifically, the BIS “...resolves conflicts by increasing, by recursive loops, the negative valence of stimuli ... until behavioral resolution occurs in favor of approach or avoidance. Subjectively, this state is experienced as worry and rumination” (p. 371). Beyond theoretical support, there is growing empirical evidence of a strong link between the BIS and rumination (see Leen-Feldner, Zvolensky, Feldner, & Lejuez, 2004; McGregor et al., 2007). Thus, the current study explored the possibility that the perfectionism–rumination link is, in part, a byproduct of their mutual association with an overactive BIS, which chronically conveys the emotional message that one’s goals are being blocked and threats of possible failure and humiliation are looming.

We hypothesized that our results would most closely resemble those of O’Connor and Forgan (2007) and Flett et al. (2002), as this pattern is firmly supported by theory on both perfectionism and behavioral inhibition sensitivity. Specifically, our first hypothesis was that SPP would show the strongest link to BIS and show no association with BAS measures. SOP was expected to show a moderate link to BIS, as well as to BAS-Drive and Reward. SOP was not expected to be associated with BAS fun, in keeping with observations suggesting that there are key differences among the BAS subscales and only drive and reward responsiveness reflect complex approach tendencies (see Corr, 2008; Leone, 2009).
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