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Concern with Immediate Consequences Magnifies the Impact of Compulsive Buying Tendencies on College Students' Credit Card Debt

This research examines whether temporal orientation moderates the impact of compulsive buying tendencies (CBT) on credit card debt. Participants completed the consideration of future consequences scale, a compulsive buying scale, and reported their credit card debt. Results revealed that CBT mediated the relationship between concern with immediate consequences and credit card debt, and high concern with immediate consequences magnified the impact of CBT on credit card debt. This suggests that compulsive buyers who focus on maximizing immediate consequences are at a much higher risk of building up significant amounts of credit card debt.

While credit cards are a convenient way to pay for products and services, consumers can sometimes use credit unwisely, carry high balances, and frequently pay only the minimum amount on each card they hold. Apart from the financial concerns, credit card debt has been linked with increased anxiety (Drentea 2000) and poorer health (Drentea and Lavrakas 2000). Credit cards are particularly problematic for young adults. It is estimated that 91% of college seniors have at least one credit card and 56% carry four or more cards. The average college student will graduate with more than $2,800 in credit card debt and up to one-fifth carry a credit card debt of $10,000 or more (Mae 2005; Consumer Federation of America 1999).

Given these concerns, it is important to examine predictors of credit card debt. In the present article, we focus on the joint impact of two theoretically relevant individual differences, namely compulsive buying tendencies (CBT) and the consideration of future consequences (CFC). Compulsive buying has a long history in the consumer welfare literature (O'Guinn and Faber 1989). By comparison, CFC (Strathman et al. 1994) has a shorter history, but has been shown to have meaningful links

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with financial decision making (e.g., Howlett, Kees, and Kemp 2008; Joireman, Sprott, and Spangenberg 2005). As we outline below, we hypothesize that CFC will predict CBT, which in turn will predict credit card debt (i.e., CBT will mediate the relationship between CFC and credit card debt). We also hypothesize that CFC will moderate the relationship between CBT and credit card debt.

LITERATURE REVIEW AND CONCEPTUALIZATION
Compulsive Buying

O'Guinn and Faber (1989) first defined compulsive buying as "chronic, repetitive purchases that becomes a primary response to negative events or feelings. The activity, while perhaps providing short-term positive rewards, becomes very difficult to stop and ultimately results in harmful consequences" (p. 155; c.f. Faber 2004). Whereas O'Guinn and Faber framed compulsive buying as a categorical variable (i.e., a consumer is a compulsive buyer only if his/her score reaches a certain threshold on a clinical screener for compulsive buying), other researchers have suggested that compulsive buying can be conceived as a continuum within a population of consumers (i.e., consumers differ in their CBT; d'Astous 1990). In the present article, we are interested in examining how compulsive buying predicts credit card debt among a normal population of college students, and therefore chose to focus on CBT.

Studies on CBT can be separated into two basic groups, including those that focus on the antecedents of CBT, and those that focus on the consequences of CBT. A variety of factors predict CBT. Much of this literature examines the direct effect of personality traits on compulsive buying. For example, in their original work, O'Guinn and Faber (1989) showed that consumers classified as compulsive buyers reported lower levels of self-esteem and higher levels of compulsive personality and materialism, as compared to noncompulsive buyers. Research on CBT has revealed a number of similar and additional personality correlates. In short, CBT has been linked with lower levels of self-esteem (d'Astous 1990; Roberts 1998; Yurchisin and Johnson 2004) and conscientiousness (Mowen and Spears 1999; Wang and Yang 2008); and higher levels of materialism (Mowen and Spears 1999; Ridgway, Kukar-Kinney, and Monroe 2008; Roberts, Manolis, and Tanner 2003; Rose 2007), narcissism (Rose 2007), impulsivity (Billieux et al. 2008; Faber 2004; Rose 2007), depression, anxiety and stress (Ridgway, Kukar-Kinney, and Monroe 2008), fashion interest (Park

and Burns 2005), and money attitudes related to power and anxiety (Norum 2008b; Roberts and Jones 2001). Directly relevant to our investigation are at least two additional studies that have linked CBT with a cluster of proxy variables (e.g., smoking, drinking, unprotected sex, and exercise) thought to reflect an individual's present versus future time orientation (Norum 2008b; c.f. Roberts and Tanner 2003). These studies suggest that CBT is positively related to a present time orientation (and negatively related to a future time orientation). Further, and even more directly relevant, two additional recent studies link higher levels of CBT with a lower future time orientation (Bearden, Money, and Nevins 2006) and a reduced tendency to consider the impact of current behaviors on future outcomes (Nenkov, Inman, and Hulland 2008).

CBT have also been shown to predict a variety of important outcomes. For example, those scoring high on CBT are more likely than those scoring low to purchase products offered with a premium (Prendergast et al. 2008), purchase products via the internet (Norum 2008a; Wang and Yang 2008), and engage in hoarding behavior (Frost et al. 1998). More directly relevant to the present study, research has also shown that high levels of CBT are associated with higher self-reported credit card misuse (d'Astous 1990; Park and Burns 2005; Ridgway, Kukar-Kinney, and Monroe 2008; Roberts 1998), and that clinically classified compulsive buyers possess more credit cards (overall), more credit cards within $100 of the credit limit (O'Guinn and Faber 1989), and higher credit card debt (Faber and O'Guinn 1992). Consistent with this last line of research, we predicted that higher levels of CBT would be associated with higher levels of credit card debt (Hypothesis 1).

Open Questions

Despite advances in our understanding of CBT, a number of interesting questions remain. To begin, it is surprising that only one published study has reported that compulsive buyers have higher credit card debt than noncompulsive buyers (Faber and O'Guinn 1992). Admittedly, several of the studies just reviewed reported links between CBT and variables likely to be associated with credit card debt (e.g., self-reported credit card misuse; number of credit cards). Still, the paucity of research on the link between CBT and credit card debt represents a noteworthy gap in the literature.

Second, and more importantly, the vast majority of outcomes-based CBT literature has focused solely on the main effect of CBT and there is little work investigating boundary conditions. In one of the few exceptions, Kwak et al. (2006) explored whether normative concerns moderate the impact of CBT on compulsive purchase intentions within a hypothetical scenario. While CBT did predict purchase intentions, the researchers did not find the hypothesized interaction. Thus, it is apparent that much remains to be learned about how CBT may interact with other theoretically relevant variables to predict various outcomes of interest, including credit card debt.

Identifying and understanding such interactions is important for at least two reasons. First, it is possible that certain features of a situation or person can mitigate or magnify the impact of CBT on outcomes of interest. If true, it might be possible to develop more effective interventions for people with high levels of CBT. As an example, if a certain personality variable makes people more susceptible to acting on their CBT, screening for this "enhancer" along with CBT could lead to important insights for consumers battling problems associated with high levels of CBT. Second, identifying variables that interact with CBT can advance our understanding of the CBT construct itself. It has long been recognized that behavior is frequently determined by an interaction between the person and the situation (or between two person variables). Assuming this is true, the relationship between CBT and credit card debt is likely to be more complex than a simple main effect model would predict. Granting this, an obvious task is to identify theoretically relevant moderators of the impact of CBT.

In searching for relevant moderators, it is useful to consider that compulsive buying is an activity which produces short-term rewards but leads to long-term negative consequences (c.f. Faber 2004). This suggests that heightened levels of CBT are likely to present consumers with an internal struggle between short-term gratification and long-term negative consequences. As reviewed earlier, several studies are consistent with this view; namely studies that either indirectly suggest (Norum 2008b; c.f. Roberts and Tanner 2003) or directly demonstrate (Bearden, Money, and Nevins 2006; Nenkov, Inman, and Hulland 2008) that a present (future) time orientation is linked with high (low) levels of CBT. While promising, none of these studies explored whether CBT predicted the downstream consequence of credit card debt, and none of the studies tested for an interaction between CBT and time orientation. The present study aims to fill that gap by examining how credit card debt

is predicted by the interaction between CBT and individual differences in CFC (Strathman et al. 1994).

Consideration of Future Consequences

Individual differences in the CFC are defined as "the extent to which people consider the potential distant outcomes of their current behaviors and the extent to which they are influenced by these potential outcomes" (Strathman et al. 1994, p. 743). People low in CFC attach a high degree of importance to immediate consequences of their actions, and little importance to delayed consequences of their actions, whereas people high in CFC attach higher importance on future consequences of their actions, and little importance to the immediate consequences.

CFC predicts a wide range of theoretically relevant outcomes (for a review, see Joireman, Strathman, and Balliet 2006). For example, Strathman et al. (1994) showed that persons scoring high in CFC reported lower levels of alcohol and tobacco use, higher levels of concern for their health, and stronger pro-environmental preferences and behaviors. Subsequent research has shown that people scoring high in CFC perform better academically (Joireman 1999; Peters, Joireman, and Ridgway 2005), get better sleep (Peters, Joireman, and Ridgway 2005), and are more likely to engage in safe sex behavior (Dorr et al. 1999). Although individual differences in CFC have been shown to predict a variety of consumer behaviors, there has been very limited research that has examined how CFC might impact financial decisions. One recent study by Joireman, Sprott, and Spangenberg (2005) showed that individuals high in CFC reported being less likely to engage in impulsive buying behavior and more likely to use a hypothetical windfall in a fiscally responsible fashion (e.g., paying down credit card debt). In another study, Howell et al. (2008) showed that individuals high in CFC were more likely to invest in a hypothetical 401(k) fund. While suggestive, neither study examined whether CFC predicted actual credit card debt. The present study fills that gap by exploring why CFC might predict an individual's level of credit card debt and whether CFC moderates the impact of CBT on credit card debt.

Because many financial decisions involve a trade-off between short-term and long-term outcomes, CFC should predict credit card debt. To illustrate, consider a person's decision to use a credit card for a service or product that they cannot pay for within the foreseeable future. Over time, through accrued interest, the credit card debt will likely increase so

much that the person may end up paying twice the original cost of the product or service. Assuming that the decision-maker had been aware of this cost at the time he or she made the purchase, this person may likely have opted to avoid the purchase. Thus, over time, by using a credit card to make purchases that lead to significant amounts of debt, people are likely to experience a conflict between the short-term and long-term consequences of their decision. Within this scenario, it is reasonable to assume that people maximize their long-term outcomes when they avoid paying interest on their credit cards. Thus, we expect that persons who consider the future consequences of their actions will be less likely to use credit cards to make discretionary purchases they cannot really afford and will end up having less credit card debt as a result. If true, an obvious question is *why* CFC predicts credit card debt. As we explain in the following section, we assume that CFC will predict credit through its association with CBT.

The Mediation Hypothesis:
CFC → CBT → Credit Card Debt

As noted earlier, in the short term, CBT lead to some relief of an aversive state, while in the long term, CBT lead to a variety of negative personal and social consequences including greater credit card debt (Faber and O'Guinn 1992) and conflict in interpersonal relationships (O'Guinn and Faber 1989). Given that compulsive buying is aimed at fulfilling short-term immediate needs and results in long-term negative consequences (Faber 2004), individuals low in CFC should score higher in CBT (Hypothesis 2).

Some initial support for this hypothesis can be found in common correlates of CFC and general compulsive/addictive behavior disorders, which have been linked with CBT. For example, those high in CFC are less likely to engage in addictive behaviors like using alcohol and tobacco (Strathman et al. 1994). In addition, low levels of CFC (Joireman, Anderson, and Strathman 2003) and high levels of compulsive buying behavior (DeSarbo and Edwards 1996; Faber, O'Guinn, and Krych 1987) have both been associated with low impulse control and higher levels of sensation seeking. Finally, compulsive buying is thought to result, in part, from a process of cognitive narrowing which interferes with consumers' ability to think about future consequences and/or cause-and-effect relationships (Faber 2004). Thus, both theory and prior research suggest that low levels of CFC are likely to predict higher likelihood of CBT, which in turn will predict higher levels of credit card debt

(Hypothesis 3) such that CBT will mediate the relationship between CFC and credit card debt.

The Moderation Hypothesis: CFC × CBT → Credit Card Debt

In addition to testing for the mediating role of CBT, we also consider whether CFC and CBT interact to predict credit card debt. As noted earlier, few studies have explored factors that might moderate the impact of CBT on outcomes of interest, such as credit card debt. In theory, we believe there is good reason to expect CFC to moderate the impact of CBT on credit card debt. As noted earlier, a problem associated with CBT is that it is aimed at satisfying immediate gratification at the expense of long-term costs. This tendency for people high in CBT should be magnified among those who are concerned with immediate consequences (or those low in CFC). If an individual does not care about immediate gratification, they may be able to avoid the temptation to act on their CBT. Similarly, if an individual is high in CBT but also happens to be high in CFC, they may think about the future consequences of their CBT and choose not to act on their desire. Either way, this line of reasoning suggests that CFC will moderate the impact of CBT on credit card debt, such that the CBT–debt relationship will be stronger among those low in CFC (Hypothesis 4).

Future and Immediate Subscales of CFC: Buffering versus Susceptibility Hypotheses

Originally, the CFC scale was reported to have a single underlying factor (Strathman et al. 1994), and subsequent studies have accordingly treated CFC as a uni-dimensional construct. However, it is important to note that because the CFC scale contains both present- and future-oriented items, the summary score on the CFC scale can reflect a mix of concern with immediate and concern with future consequences. For example, low scores could mean that a person is highly concerned with immediate consequences, not concerned about future consequences, or both. Similarly, high scores on the CFC scale could mean that a person is highly concerned about future consequences, not concerned about immediate consequences, or both.

Recently, Joireman et al. (2008) reported a large-scale confirmatory factor analysis ($N = 988$) which demonstrated that the CFC scale contains two subscales (see Appendix 1), one comprised of items with a

future-orientation (CFC-Future), the other comprised of the immediate-oriented items (CFC-Immediate) (c.f. Petrocelli 2003). The present study explores the relevance of this distinction within the domain of credit card debt. Drawing on the distinction between the CFC-Future and CFC-Immediate subscales allows us to determine which aspect of CFC (future concerns or immediate concerns) play a greater role. If CFC-Future plays a more important role, this would suggest a *buffering hypothesis*: high levels of concern with *future* consequences (*per se*) protect against the development of CBT and/or acting out on such tendencies. By contrast, if CFC-Immediate plays a more pivotal role, this would suggest a *susceptibility hypothesis*: high levels of concern with *immediate* consequences (*per se*) predispose people to developing CBT and magnify the impact of CBT on credit card debt. In an initial test of these competing perspectives, Joireman et al. (2008) found strong support for the susceptibility hypothesis: namely, when pitted against each other, CFC-Immediate was a stronger predictor of trait self-control and temporal discounting than CFC-Future. The present study tests whether a similar pattern emerges in the context of CBT and credit card debt. Based on Joireman et al.'s (2008) results, and given that CBT can be thought of as a type of self-control failure, we anticipate that the primary driver of the CFC effects will be the CFC-Immediate subscale, a pattern supporting the susceptibility hypothesis (Hypothesis 5).

Summary of Hypotheses

Hypothesis 1: High levels of CBT will predict higher levels of credit card debt.

Hypothesis 2: Low levels of CFC will predict higher levels of CBT.

Hypothesis 3: CBT will mediate the relationship between CFC and credit card debt.

Hypothesis 4: CFC will moderate the relationship between CBT and credit card debt, such that the CBT-debt relationship will be stronger among those low in CFC.

Hypothesis 5: The strongest driver of the CFC effects will be the CFC-Immediate subscale, a pattern supporting the susceptibility hypothesis.

METHOD

Participants

Participants were 249 undergraduate business students enrolled at two universities who received course credit for participating. The mean age of the sample was 21 years (range from 18 to 35) and 55% ($N = 137$) were female.

Measures

Participants responded to a paper and pencil survey in which they completed the CFC scale (Strathman et al. 1994), the diagnostic screener for compulsive buying tendencies (DSCB; Faber and O'Guinn 1992), and reported their credit card debt, in that order. The 12-item CFC scale contains general statements regarding a person's tendency to take into account the future consequences of his/her behavior, none of which bear directly on financial issues. Participants indicated the extent to which such statements were characteristic of themselves on a scale from 1 (extremely uncharacteristic) to 7 (extremely characteristic). As noted earlier, prior research indicates that the CFC scale has two underlying factors, comprised of future-oriented and immediate-oriented items (Joireman et al. 2008). As such, in addition to an overall CFC score (CFC-Total), we computed two subscale indexes which we label CFC-Future (CFC-F) and CFC-Immediate (CFC-I). Higher scores on both the CFC-Total and CFC-Future scales reflect a higher concern with future consequences, whereas higher scores on the CFC-Immediate scale reflect a higher concern with immediate consequences. Items for each subscale are shown in Appendix 1. The 7-item DSCB scale measures consumers' general tendency to spend their money compulsively. Items included "I felt others would be horrified if they knew of my spending habits" and "I bought things even though I couldn't afford them" (5-point scales anchored with Never/Very Often). Finally, to measure credit card debt, participants completed an open ended question in which they were asked to recall their "actual total credit card balance as of today." Reliabilities for the CFC and DSCB scales are reported along with the results (see Table 1).

RESULTS

Simple Correlations

Table 1 presents a summary of the correlations between the CFC scales, compulsive buying, and credit card debt, as well as the reliabilities of the scales. We first analyzed the data for all participants, including those who had no debt (the full sample). Next, we reanalyzed the data focusing only on those participants who had some amount of debt (the reduced sample). We conducted the second set of analyses because including participants with no debt had the potential to attenuate the correlations. Correlations for the full sample appear below the diagonal, while correlations for the reduced sample appear above the diagonal.

TABLE 1
Correlations among CFC, Compulsive Buying, and Credit Card Debt

	Debt	CBT	CFC-Total	CFC-Future	CFC-Immediate
Debt	—	.50**	−.37**	−.28**	.36**
Compulsive buying	.51**	—	−.32**	−.19	.34**
CFC-Total	−.17*	−.23**	—	.82**	−.93**
CFC-Future	−.08	−.08	.79**	—	−.54**
CFC-Immediate	.19**	.27**	−.91**	−.46**	—
Full sample (*N* = 209)					
Mean	472.19	1.94	4.68	4.81	3.42
SD	1,196.01	0.69	0.75	0.84	0.89
Alpha	—	.78	.76	.55	.73
Reduced sample (*N* = 74)					
Mean	1,333.61	2.29	4.73	4.95	3.43
SD	1,706.22	0.85	0.79	0.84	0.93
Alpha	—	.82	.81	.61	.78

Note: Correlations below diagonal based on full sample including participants with no debt. Correlations above diagonal based on reduced sample of participants who have some debt.
*$p < .05$, **$p < .01$ (two-tailed).

In both cases (full and reduced sample), CFC-Total was negatively related to both credit card debt and compulsive buying, while CFC-Immediate was positively correlated with compulsive buying and credit card debt. CFC-Future was negatively related to credit card debt only in the reduced sample, and was not related to compulsive buying in either sample. Also relevant, compulsive buying was positively related to debt within both samples. As a set, these findings provide support for Hypotheses 1 and 2.

Sample Comparison

When the full and reduced samples are compared, it is apparent that the strength of the correlations between the CFC scales and debt were notably stronger within the reduced sample. For example, in the full sample, CFC-Total explained 2.9% of the variance in credit card debt, whereas in the reduced sample, CFC-Total explained 13.7%. Similarly, CFC-Future was unrelated to debt in the full sample, but showed a significant correlation with debt in the reduced sample, where it explained 7.8% of the variance. Finally, CFC-Immediate explained 3.6% of the variance in debt in the full sample and 13% of the variance in the reduced sample.

Mediation Analyses

As outlined earlier, our reasoning led us to expect that CBT will mediate the relationship between CFC and credit card debt. Of the two CFC subscales, only CFC-Immediate showed a significant correlation with CBT (the mediator) in both the full and reduced samples. Accordingly, we tested the mediation model using the CFC-Immediate subscale only. For mediation to hold, (1) CFC-Immediate should predict credit card debt, which it does ($\beta_{\text{full sample}} = .19$, $p < .01$, $\beta_{\text{reduced sample}} = .36$, $p < .01$); (2) CFC-Immediate should predict CBT, which it does ($\beta_{\text{full sample}} = .27$, $p < .001$, $\beta_{\text{reduced sample}} = .34$, $p < .01$); (3) CBT should predict credit card debt in a model including CFC-Immediate, which it does ($\beta_{\text{full sample}} = .50$, $p < .001$, $\beta_{\text{reduced sample}} = .42$, $p < .001$); and finally (4) the relationship between CFC-Immediate and credit card debt should be reduced to nonsignificant levels (full mediation) or become less significant (partial mediation) when CBT is entered into the model (Baron and Kenny 1986). In the *full sample*, results were consistent with the *full mediation* model, as the relationship between CFC-Immediate and credit card debt became nonsignificant ($\beta = .06$, $p = .37$) when CBT was entered in the model. A Sobel (1982) test confirmed that the reduction in the relationship between CFC-Immediate and credit card debt was significant ($z = 3.62$, $p < .001$). In the *reduced sample*, results were consistent with the *partial mediation* model, as the relationship between CFC-Immediate and credit card debt was weakened, but remained significant ($\beta = .22$, $p < .05$) when CBT was entered in the model. A Sobel (1982) test confirmed that the reduction in the relationship between CFC-Immediate and credit card debt was significant ($z = 2.41$, $p < .01$). In summary, results of the mediation analyses provide support for H3.[1]

Moderation Analyses

We next turn to a test of our moderation hypothesis (H4) which assumes that CFC and CBT will interact to predict credit card debt. More specifically, we expected that the relationship between CBT and credit card debt would be magnified under low levels of CFC (or high levels of CFC-Immediate). Similarly, we expected that low levels of CFC (or

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1. For a detailed explanation of mediation, and online calculator, see: http://people.ku. edu/~preacher/sobel/sobel.htm.

high levels of CFC-Immediate) would be more likely to predict higher levels of credit card debt when CBT was high.

We first evaluated a regression model including CBT, CFC-Future, and CFC-Immediate subscales. These analyses revealed that CFC-Future did not predict debt over and above CFC-Immediate in either the full or reduced sample, whereas CFC-Immediate *was* a unique predictor over and above CFC-Future. These analyses also revealed that CFC-Future did not enter into any higher order interactions with CFC-Immediate and/or CBT. Hence, in the interests of parsimony, we have chosen to only report the results of a regression model including CBT, CFC-Immediate, and their interaction.

Prior to analysis, CFC-Immediate and CBT were mean-centered. The regression analysis was conducted in a series of three steps. On Step 1, we entered CFC-Immediate. This step essentially replicates the simple correlation between CFC and debt in Table 1. On Step 2, we entered CBT. This step essentially illustrates the mediation effect (i.e., how the relationship between CFC-Immediate and credit card debt is reduced after controlling for CBT). Most important, on Step 3, we entered the interaction between CFC-Immediate and CBT. If our hypothesis is correct, the interaction term should be significant and have a positive sign, indicating that the relationship between CBT and credit card debt is magnified at high levels of CFC-Immediate.

Table 2 reports the unstandardized and standardized regression coefficients for these analyses. As can be seen on Step 3, results revealed a significant interaction between CFC-Immediate and CBT in both the full and reduced sample, with the anticipated positive sign. Figure 1 depicts the interaction in the full (Panel A) and reduced samples (Panel B). As can be seen, the nature of the interaction was consistent with our hypothesis (H4).[2]

To further evaluate the interaction, we conducted a series of simple slope analyses in which we evaluated: (1) the relationship between CBT

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2. We also tested for mediation and moderation using the CFC-Total scale in a regression model including CFC-Total (Step 1), CBT (Step 2), and their interaction (Step 3). In both the full and reduced samples, CBT full mediated the relationship between CFC-Total and credit card debt (and in both cases, the reduction in the CFC-Total to credit card relationship was significant ($ps < .01$). Furthermore, in the full sample (but not the reduced sample), the interaction between CBT and CFC-Total was significant ($p < .01$). As anticipated, the relationship between CBT and credit card debt was stronger at lower levels of CFC-Total. We chose not to report this analysis, as subsequent analyses indicated that it was primarily the CFC-Immediate subscale that was responsible for this interaction (see text). Readers interested in a summary of these results, or the full model, including CBT, CFC-Immediate, and CFC-Future, may contact the first author.

TABLE 2
Regression Analyses Predicting Credit Card Debt

	Full Sample			Reduced Sample		
	B	SE	β	*B*	SE	β
Step 1						
CFC-Immediate	255.84	91.44	0.19**	662.03	202.13	0.36**
Step 2						
CFC-Immediate	74.93	83.18	0.06	400.81	195.74	0.22*
Compulsive buying	865.36	108.10	0.50**	845.35	213.74	0.42**
Step 3						
CFC-Immediate	93.34	81.18	0.07	429.81	190.56	0.23*
Compulsive buying	747.01	110.59	0.43**	723.38	214.35	0.36**
CFC-I × CBT	365.52	104.62	0.21**	452.67	197.66	0.23*

Note: Full sample includes participants with no debt ($N = 209$). Reduced sample includes only participants who have some debt ($N = 74$).
B = unstandardized regression coefficient, SE = standard error, β = standardized regression coefficient.
Full sample model statistics: Step 1: $R^2 = .036$, $F(1, 207) = 7.83$, $p < .001$. Step 2: $R^2 = .265$, $F(2, 206) = 37.15$, $p < .001$. Step 3: $R^2 = .306$, $F(3, 205) = 30.18$, $p < .001$.
*Reduced sample model statistics*: Step 1: $R^2 = .130$, $F(1, 72) = 10.73$, $p < .001$. Step 2: $R^2 = .267$, $F(2, 71) = 14.28$, $p < .001$. Step 3: $R^2 = .308$, $F(3, 70) = 11.83$, $p < .001$.
*$p < .05$, **$p < .01$.

and credit card debt at low ($-1SD$) and high ($+1SD$) levels of CFC-Immediate, and (2) the relationship between CFC-Immediate and credit card debt at low ($-1SD$) and high ($+1SD$) levels of CBT. A summary of these simple slope analyses, including the unstandardized regression equations and standardized simple slopes, is presented in Table 3. Close inspection of these analyses reveals strong support for our hypothesis.

The top half of Table 3 summarizes the simple relationship between CBT and credit card debt among those low verus high in CFC-Immediate. As can be seen, the relationship between CBT and credit card debt was notably stronger at high levels of CFC-Immediate ($\beta_{\text{full sample}} = .61$, $\beta_{\text{reduced sample}} = .57$, $p\text{s} < .01$) than at low levels of CFC-Immediate ($\beta_{\text{full sample}} = .24$, $p < .05$, $\beta_{\text{reduced sample}} = .15$, ns). A close inspection of the unstandardized simple slopes (b_1) illustrates the real-world significance of these findings. For example, based on our data, if an individual is low in concern with immediate consequences (low in CFC-Immediate), a one-unit increase on the CBT scale will lead to an increase in debt between \$303 (reduced sample) and \$421 (full sample). By contrast, if an individual is high in concern with immediate consequences (high in CFC-Immediate), the same one-unit increase on the CBT scale will lead to an increase in debt between \$1055 (full sample) and \$1143

FIGURE 1

Credit Card Debt as a Function of Compulsive Buying and Consideration of Immediate Consequences

Panel A
(Full Sample)

Panel B
(Reduced Sample)
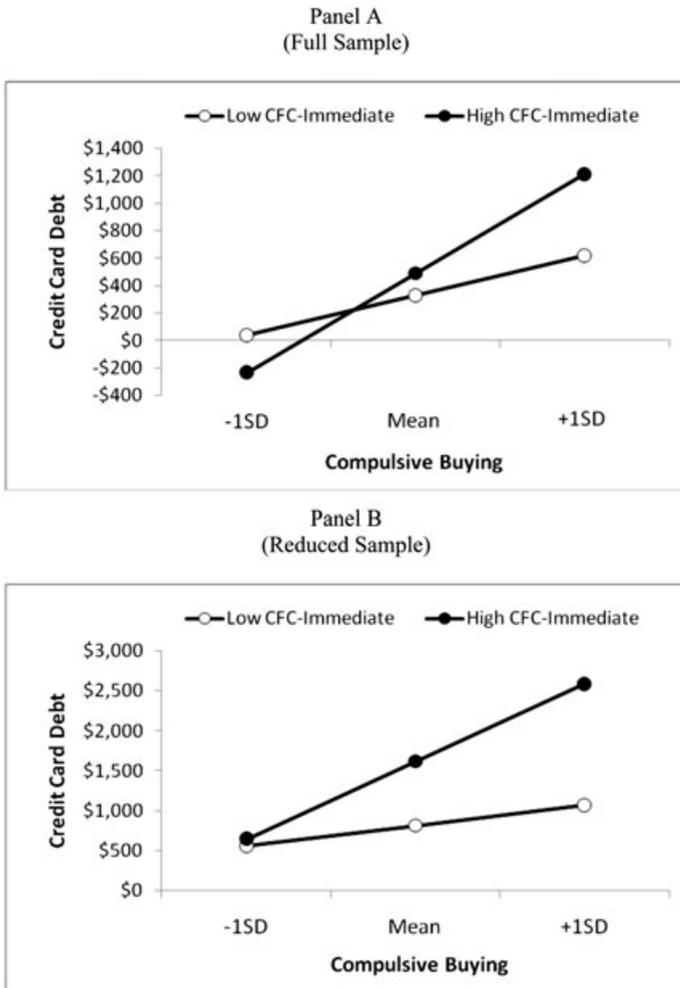
(reduced sample). Reframed, using the data from the reduced sample, the same one-unit increase in CBT will cost an individual approximately $840 more if that person is high in concern with immediate consequences than if that person is low in concern with immediate consequences ($1143–$303).

The bottom half of Table 3 summarizes the simple relationship between CFC-Immediate and credit card debt among those low versus

TABLE 3
Simple Slope Analyses

	Full Sample			Reduced Sample		
	b_o	b_1	β	b_o	b_1	β
CBT to debt slope at						
Low CFC-I (-1 SD)	328.51	420.98	.24*	815.73	303.30	.15
High CFC-I ($+1$ SD)	490.46	1,055.14	.61**	1,613.45	1,143.46	.57**
CFC-I to debt slope at						
Low CBT (-1 SD)	-101.46	-157.77	$-.12$	599.72	45.04	.02
High CBT ($+1$ SD)	924.97	344.45	.26**	1,829.46	814.58	.44**

Note: Full sample includes participants with no debt ($N = 209$). Reduced sample includes only participants who have some debt ($N = 74$).
CBT = compulsive buying tendencies, CFC-I = CFC-Immediate subscale, b_o = intercept, b_1 = simple unstandardized slope, β = simple standardized slope.
*$p < .05$, **$p < .01$.

high in CBT. Although our primary focus was on how CFC would moderate the relationship between CBT and credit card debt, we felt that this alternative set of simple slope analyses would yield further insights into the data. As can be seen, the relationship between CFC-Immediate and credit card debt is *only* significant at high levels of CBT ($\beta_{full\ sample} = .26$, $\beta_{reduced\ sample} = .44$, $p < .01$). A close inspection of the unstandardized slopes again highlights the real-world implications of these findings. Namely, a one-unit increase on the CFC-Immediate scale results in (at most) $45 if an individual is low in CBT (based on the reduced sample). By contrast, if an individual is high in CBT, the same one-unit increase in CFC-Immediate results in between $344 (full sample) and $815 (reduced sample) in debt. Restated, using the data from the reduced sample, the same one-unit increase in CFC-Immediate will cost an individual approximately $770 more if that person is also high in CBT ($815–$45).[3]

DISCUSSION

The purpose of the present study was threefold. First, we tested whether higher levels of CBT were associated with higher levels of credit card debt. Second, we explored whether lower consideration with future

3. Using the full sample, both age and income were significantly related to debt ($rs = .21$ and .20, $ps < .05$). However, when we included these two variables as covariates in the analyses, it had no meaningful effect on the results (the effects reported in the text continued to be significant). For the reduced sample, neither age nor income was significantly related to any of the variables (all $rs < .10$). Thus, it was unnecessary to control for them as covariates in the analyses.

consequences (Strathman et al. 1994) was associated with higher levels of CBT, and whether CBT mediates the relationship between CFC and credit card debt. Third, and most important, we explored whether individual differences in CFC moderate the relationship between CBT and credit card debt. As a set, results provided strong support for our hypotheses. In line with H1, individuals scoring high on CBT reported more credit card debt. Consistent with H2–H3, CFC was negatively related to CBT, and CBT mediated the relationship between CFC and credit card debt. In support of H4, CFC moderated the impact of CBT on credit card debt, such that the CBT–debt relationship was stronger at lower levels of CFC. Finally, consistent with H5, the main driver of these effects was the CFC-Immediate scale. Taken together, the present results extend the literature on compulsive buying and the CFC, and underscore several potentially important practical implications.

Extensions of the Compulsive Buying Literature

The consumer welfare literature does not suffer from a paucity of research on compulsive buying. Indeed, a recent search of the literature identified at least 115 publications on the topic. In the introduction, we briefly reviewed several of the better known predictors and consequences of CBT. As we noted, one of the more interesting and surprising gaps in the literature is the near complete absence of studies exploring whether CBT predict credit card debt. To date, a number of studies have shown that high levels of CBT predict higher self-reported credit card misuse (Park and Burns 2005; Roberts 1998), as well as possession of more credit cards, including cards within $100 of an individual's credit limit (O'Guinn and Faber 1989). However, to our knowledge, only one study has actually reported that higher levels of CBT predict higher credit card debt (Faber and O'Guinn 1992). The present study's results confirm that relationship. In terms of simple correlations (see Table 1), CBT explained roughly 25% of the variance in credit card debt. This is a significant amount of the variance by any measure, and serves to underscore (once again) the importance of understanding CBT. Given these findings, the next obvious question is: what drives an individual's CBT and (more importantly) helps to convert this tendency into negative consequences like increased debt?

In his recent review of the literature, Faber (2004) stated that compulsive buying is partly due to a process of cognitive narrowing. In theory, part of the cognitive narrowing process involves zeroing in on immediate gratification at the expense of long-term costs. By

focusing on individual differences in consideration of immediate versus future consequences, we believe the present study helps shed light on the cognitive narrowing process that Faber highlights by demonstrating that: (1) CBT is higher among those who are highly concerned with the immediate consequences of their actions and (2) CBT is a stronger predictor of credit card debt among those who are highly concerned with the immediate consequences of their actions. While these findings may seem intuitive, it bears repeating that until now, research on CBT has almost exclusively focused on the main effect of CBT (for an exception, see Kwak et al. 2006). The present study, therefore, is the first (to our knowledge) to demonstrate that certain features of an individual's personality (a dispositional tendency to base decisions on the immediate consequences of one's actions) can *magnify* the negative consequences of CBT. Indeed, as the simple slope analyses demonstrated, CBT is much more likely to lead to credit card debt when an individual is also high in concern with immediate consequences (see top of Table 3). When CFC-Immediate was low, CBT explained (at most) 5.7% of the variance in credit card debt (in the full sample), whereas when CFC-Immediate was high, CBT explained over 30% of the variance in credit card debt (in the reduced sample). For people wrestling with compulsive buying, this nearly sixfold increase in the explained variance deserves attention. In sum, our results suggest that a person scoring high in compulsive buying is in considerably more danger of accumulating large amounts of debt if that person is also highly concerned with the immediate consequences of his or her actions. Future studies aimed at replicating this effect, and discovering ways to counteract this potentially lethal combination are strongly encouraged.

Extensions of the CFC Literature

Our primary interest in the present study was to understand the relationship between CBT and credit card debt, and how that relationship was impacted by an individual's level of CFC. At the same time, our findings contribute to the growing literature on CFC. It is not a stretch to claim that virtually all past studies on CFC have examined its ability to predict some aspect of behavior related to self-control (for a review, see Joireman, Strathman, and Balliet 2006), with at least two recent studies illustrating the relevance of CFC within the consumer welfare domain. In one of these studies, Joireman, Sprott, and Spangenberg (2005) demonstrated that, compared to low CFCs, high CFCs were less likely to engage in impulse buying and more likely to use a hypothetical

windfall to pay down credit card debt, especially when the debt became more unmanageable. In a more recent study, Howlett, Kees, and Kemp (2008) showed that high CFCs were more likely than low CFCs to invest in a hypothetical 401(k) plan. The present research helps to extend these earlier studies, and reinforce the relevance of the CFC construct to consumer welfare issues.

We also explored the relative predictive abilities of the two CFC sub-scales: CFC-Immediate versus CFC-Future (c.f. Joireman et al. 2008). Our results demonstrated that consumers' concern for immediate consequences (CFC-Immediate) was a stronger predictor of credit card debt than their concern with future consequences (CFC-Future), and that the relationship between CFC-Immediate and credit card debt was largely mediated via CBT. This finding is theoretically interesting in that although some evidence exists for a relationship between CFC and credit card debt (e.g., Joireman, Sprott, and Spangenberg 2005), ours is the first study to report such a relationship. Of particular interest is the finding that concern for immediate consequences (i.e., CFC-immediate) was a better predictor of credit card debt than concern for future consequences (CFC-Future) or the general CFC construct. There are relatively few studies that examine the relative predictive abilities of the two CFC sub-scales and our work contributes to this emerging area of research. In one recent exception, Joireman et al. (2008) found that CFC-Immediate was a better predictor of trait self-control and temporal discounting than CFC-Future. In combination with the current research, both studies provide support for what we have called a *susceptibility hypothesis* (as opposed to a buffering hypothesis). According to the susceptibility hypothesis, it is the concern with immediate consequences that leads people to be susceptible to CBT and its adverse impact on credit card debt. By contrast, our results do not support the buffering hypothesis, as CFC-Future did not predict CBT, was not a unique predictor of credit card debt (over and above CFC-Immediate), and did not interact with CBT to predict debt. That said, we are aware that the 5-item CFC-Future subscale demonstrated poor reliability in both the full and reduced samples, and that this low reliability may have contributed to its reduced ability to predict the outcomes of interest. Assuming future researchers continue to employ the CFC scale, attempts to improve the reliability of the CFC-Future subscale should be undertaken. Future researchers might also evaluate the generalizability of our findings using other time orientation scales, such as the Zimbardo Time Perspective Inventory (Zimbardo and Boyd 1999) or the Elaboration on Potential Outcomes scale (Nenkov, Inman, and Hulland 2008).

Practical Implications

The most important practical implication of the present study is that compulsive buyers are at significantly greater risk for building higher levels of credit card debt, especially for those who are also high in concern with immediate consequences of their actions. These findings may be of interest to programs aimed at curtailing credit card misuse (Elliehausen, Lundquist, and Staten 2007). For example, it would be possible to use the CFC scale in combination with the compulsive buying scale as screening devices to identify consumers who are highly susceptible to the tempting immediate rewards of credit cards. By making people aware of how their standing on CFC-Immediate can increase their likelihood of acting on their compulsive buying urges, it might be possible to help minimize the likely negative consequences. Given that consumers high in CFC-immediate are more likely influenced by immediate consequences of their actions (e.g., Strathman et al. 1994), such interventions are likely to be more successful if they build in immediate rewards for avoiding compulsive buying.

Debt and financial support groups have become quite popular since the economic downturn. Similar to support groups for divorce, bereavement, or other hardships, financial support groups provide peer support and accountability for individuals who struggle to make good financial decisions. One interesting possibility for intervention would be to identify "accountability partners" within these groups for consumers high in CBT. These accountability partners could regularly check in on the buying behavior of the at risk consumer. If the consumer acted on the urge to buy, the accountability partner could express disappointment or otherwise serve as an implicit source of negative self-evaluation. On the other hand, if the consumer successfully avoided acting on the urge to buy, the accountability partner could offer immediate rewards such as praise, or even a small indulgence such as a coffee. Future research evaluating the possible effectiveness of this intervention could provide important insights into how to curb compulsive buying. Such studies might also investigate whether the effectiveness of immediate punishments (vs. rewards) depends on whether a consumer typically adopts a promotion or a prevention focus (e.g., Zhao and Pechmann 2007). A testable hypothesis would be that consumers who regularly adopt a promotion focus are more impacted by rewards, whereas consumers who regularly adopt a prevention focus are more impacted by punishments.

FUTURE DIRECTIONS

Although we believe that the present study helps to advance an understanding of the interplay between CBT, CFC, and credit card debt, several aspects of the study should be kept in mind. First, our sample was restricted to college students. While the age range of our sample suggested that it was more diverse than a typical college sample (from 18 to 35), future studies should attempt to replicate the present findings with a more representative sample. That said, as we noted at the outset, credit card debt among college students is of significant concern and, as such, studying this population is valuable in its own right. Second, the current study focused narrowly on the relationship between CBT, CFC, and credit card debt. While results provided strong support for our hypotheses, and our model explained approximately 31% of the variance in credit card debt (see note to Table 2), clearly there are other factors that contribute to credit card debt, such as actual or expected income, which should be taken into account for a fuller understanding of credit card debt. Moreover, it would be interesting to explore further the underlying motives of consumers who have a high in concern with immediate consequences. In their recent study, Bernthal, Crockett, and Rose (2005) revealed that consumers who end up with high amounts of credit card debt often adopt an entitlement ideology which results in a focus on short-term gratification and/or mood repair. Thus, one direction for future research would be to evaluate whether consumers high in CFC-immediate are more susceptible to credit card debt due, in part, to this entitlement ideology. Another direction for future research would be to evaluate whether individual differences in CFC may help to explain demographic differences in financial knowledge (Lyons, Rachlis, and Sherpf 2007; Mansfield and Pinto 2008) and/or behavior (Grable, Park, and Joo 2009; Perry and Morris 2005). Finally, as noted earlier, the CFC-Future scale did not prove to be a predictor of CBT or a unique predictor of credit card debt, over and above CFC-Immediate. In part, this may have been due to the scale's low reliability. Future research needs to conduct additional scale development to improve the reliability of this scale, or use an alternative scale, to determine whether concern with future consequences is indeed less important than concern with immediate consequences as a predictor of credit card debt.

Beyond the considerations just noted, we believe it would be interesting to take a step back in the causal sequence to evaluate what predicts the CFC or related temporal concerns, which then in turn predict CBT. Past theory and research suggest that CBT is largely motivated by a desire to

escape painful self-awareness and regulate negative moods (Faber 2004; Faber and Vohs 2004). This is important, because prior research has also shown that individuals low in CFC score higher on depression (Joireman, Werner, and Kwon 2007) and different forms of sensation seeking, including boredom susceptibility (Joireman, Anderson, and Strathman 2003). These results suggest that negative affect may predict low levels of CFC, which in turn predict higher levels of CBT. Research evaluating this causal sequence could provide additional insights into the cognitive narrowing process thought to motivate CBT. Future longitudinal studies could also examine whether negative affect and CFC are further shaped or solidified by the negative states that eventually follow CBT, encouraging a downward spiral in which CBT exacerbates negative affect which in turn exacerbates a continuing cognitive narrowing and further CBT behavior. Finally, our interest in the present study was on testing a fairly focused set of hypotheses involving CFC, CBT, and credit card debt. A fuller understanding of credit card debt will, accordingly, involve development of a much more comprehensive model of relevant predictors including demographic factors, contextual factors, and other individual difference factors, such as impulsive buying tendencies.

APPENDIX 1

CFC-Future Items

1. I consider how things might be in the future, and try to influence those things with my day-to-day behavior.
2. Often I engage in a particular behavior in order to achieve outcomes that may not result for many years.
3. I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes.
7. I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years.
8. I think it is more important to perform a behavior with important distant consequences than a behavior with less important immediate consequences.

CFC-Immediate Items

4. I only act to satisfy immediate concerns, figuring the future will take care of itself.

5. My behavior is only influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions.
6. My convenience is a big factor in the decisions I make or the actions I take.
9. I generally ignore warnings about possible future problems because I think the problems will be resolved before they reach crisis level.
10. I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time.
11. I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date.
12. Since my day to day work has specific outcomes, it is more important to me than behavior that has distant outcomes.

From Strathman et al. (1994).

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