

Cognitions in Compulsive Buying and Acquisition

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Compulsive buying is a disabling condition associated with a chronic failure to control the urge to purchase objects. Compulsive buying is closely related to major depression, obsessive–compulsive disorder, and in particular, compulsive hoarding. Like compulsive hoarding, compulsive buying is thought to be influenced by a range of cognitive domains including deficits in decision-making, emotional attachments to objects and erroneous beliefs about possessions, and other maladaptive beliefs. This study examined cognitive factors related to compulsive buying among 189 participants, described by R. O. Frost, G. Steketee, and L. F. Williams (2002), of whom 75 were classified as “compulsive buyers” and 85 as “controls.” Beliefs associated with compulsive buying were assessed with the newly developed 43-item self-report Buying Cognitions Inventory (BCI). Other cognitive styles (i.e., perfectionism) and processing (i.e., decision-making) were also assessed. Overall, this study supported a theoretical model of compulsive buying addressing 5 main domains: (a) depressed mood; (b) compromised self-perceptions and perfectionistic expectations; (c) erroneous beliefs about the nature of objects, potential purchases, and purchasing opportunities; (d) erroneous beliefs about the psychological benefits of buying; and (e) decision-making difficulties.

KEY WORDS: compulsive buying; beliefs about buying; acquisition; perfectionism; decision-making.

INTRODUCTION

Compulsive buying is characterized by excessive, uncontrollable, time consuming, and repetitive shopping or buying in response to negative events and/or feelings, resulting in harmful consequences such as social and financial difficulties (Faber & O’Guinn, 1989, 1992; McElroy, Keck, Pope, Smith, & Stakowski, 1994). It is preceded by increased tension and is usually followed by guilt and remorse, despite initial pleasure (Christenson et al., 1994). Compulsive buyers commonly present clinically with

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impulsive, repetitive, and unnecessary purchases, invasive urges to buy, unsuccessful attempts at controlling buying behavior and spending, frequent and long shopping trips or avoidance of shopping, and negative consequences of buying such as marked distress, marital conflict, credit card debts, and other financial difficulties (Lejoyeux, Ades, Tassain, & Solomon, 1996; O'Guinn & Faber, 1989).

In the United States, it has been estimated that 1.8–8.1% of the general population have a problem with compulsive buying, with the general age of onset ranging from 18 to 30 years and becoming a major problem around the ages of 31–39 years (Black, 1996). Compulsive buyers are typically women in their early-to-mid 30s with a low-to-mid range income and significant debts (Schlosser, Black, Repertinger, & Freet, 1994). Purchases are typically of clothes, shoes, jewelry, or make-up, much of which goes unused (Christenson et al., 1994). In the popular media, compulsive buying is often referred to as “retail therapy” reflecting a misconception that it is associated solely with positive outcomes or occasional trivial negative effects. However, the clinical scenario suggests a more serious disorder.

Uncontrolled buying is seen in several psychiatric conditions, including borderline personality and bipolar depression (American Psychiatric Association [APA], 1994), although its etiology in these conditions is likely to differ from compulsive buying associated with impulse control disorders. McElroy, Keck, and Phillips (1995) suggested that compulsive buying belongs to an extended group of compulsive–impulsive spectrum disorders which also include kleptomania, binge eating, and obsessive–compulsive disorder (OCD). Certainly, lifetime and comorbid diagnoses of major mood, anxiety, impulse control, substance use, and eating disorders have been reported in high proportions of compulsive buyers (Christenson et al., 1994; McElroy et al., 1994; Schlosser et al., 1994).

It is not surprising to find that compulsive buying has also been associated with compulsive hoarding (Frost, Krause, & Steketee, 1996), although support for its association with OCD has been equivocal (Frost, Steketee, & Williams, 2002). In their theoretical and empirical work, Frost and associates maintain that compulsive acquisition, a broader construct than compulsive buying, is a central component of compulsive hoarding. Others consider compulsive buying to be part of a broader category of abnormal consumption that includes substance abuse, excessive eating disorders, compulsive sexual disorders, and other addictive behaviors (Faber, O'Guinn, & Krych, 1987; O'Guinn & Faber, 1989). Frost et al. (2002) further distinguish between the consequences of compulsive buying (e.g. financial), and phenomenological aspects of the disorder (e.g., the importance and function of possessions, the frequency of buying behaviors).

Although major depression appears to have a strong association with compulsive buying (Frost, Steketee, Williams, & Warren, 2000), the nature of the relationship is complex (Gardner, 1985). Depression may result from the social, financial, and interpersonal complications caused by compulsive buying. On the other hand, compulsive shopping may constitute a coping strategy to compensate for depression and other negative affective states by virtue of the euphoria it can produce (Faber & Christenson, 1996). Alternatively, depression may lead to poor self-esteem, negative thinking, cognitive difficulties, and other effects that drive compulsive buying behavior.

Little theory exists on the etiology of compulsive buying, despite much recent research on related conditions such as OCD and hoarding. Although etiological models of related conditions have been embraced as the basis for their management, the lack of substantial biological or psychological models of compulsive buying is reflected in the lack of proven treatments and relatively limited understanding of the clinical phenomena. Interest in cognitive-behavioral therapies has been associated with the development of cognitive models and research on other compulsive conditions such as OCD and hoarding. For instance, the recent emergence of specific cognitive-behavioral models of etiology for compulsive hoarding has led to empirical investigation of its behavioral manifestations, associated phenomena, markers of vulnerability for its development and/or maintenance, and the development of more effective psychological treatments (Frost & Gross, 1993; Frost & Hartl, 1996; Frost & Steketee, 2000; Hartl & Frost, 1999; Steketee, Frost, Wincze, Greene, & Douglass, 2000). On the basis of the co-occurrence of hoarding and compulsive buying symptoms (Frost et al., 1998, 2002), it could be argued that compulsive buying and hoarding also share similar cognitive features. Hence, recent research findings on the cognitive features of compulsive hoarding (Kyrios, Steketee, Frost, & Oh, 2002; Steketee, Frost, & Kyrios, 2003) may have relevance for compulsive buying.

Cognitive and Emotional Features Associated With Compulsive Buying

Frost and Hartl's cognitive-behavioral model (Frost & Hartl, 1996) of hoarding identifies four problems or deficits associated with compulsive hoarding including information processing deficits, problems with emotional attachment, erroneous beliefs about the nature of possessions, and behavioral avoidance. Other features of importance in understanding compulsive hoarding include perfectionism, decision-making deficits, and the familial pattern of the syndrome (Frost & Gross, 1993; Frost & Shows, 1993).

Further to the work of Bowlby (1969, 1973), a number of researchers have indicated the potential importance of attachment and early developmental influences such as parenting styles in the emergence of personality traits and beliefs commonly associated with obsessive-compulsive phenomena and hoarding (Kyrios, 1998). Guidano and Liotti (1983) implicated the importance of ambivalent attachments and low self-worth, resulting from a family environment characterized by overprotective yet highly demanding parenting styles, and leading to perfectionistic tendencies that act as compensatory strategies to prove one's self worth. To date, little research has focused on familial influences on compulsive buying, although DeSarbo and Edwards (1996) highlighted that an abusive childhood environment was characteristic of severe compulsive buyers.

Perfectionism has, however, been associated with compulsive buying (DeSarbo & Edwards, 1996), although it is unclear whether it acts as a general vulnerability factor or a motivator of compulsive buying behavior. Frost's multidimensional view of perfectionism could be used to explore the influence on compulsive buying of perfectionistic attitudes and relevant family influences such as parental expectations and criticism (Frost, Marten, Lahart, & Rosenblate, 1990). Consistent with Guidano and Liotti's view (Guidano & Liotti, 1983), maladaptive emotional attachment patterns

derived from highly perfectionistic parental expectations or criticism, may be reflected in *specific* beliefs that compulsive hoarders and buyers apply to self-appraisals, to the appraisal of objects and possessions, or to the control strategies they apply to acquisition urges.

Poor self-esteem has also been consistently associated with compulsive buying (DeSarbo & Edwards, 1996; Hanley & Wilhelm, 1992; O'Guinn & Faber, 1989). A compulsive personality disposition and the ability to engage in fantasy may help compulsive buyers avoid focusing on personal problems, in particular poor self-esteem (O'Guinn & Faber, 1989). Hanley and Wilhelm (1992) further concluded that compulsive buyers exhibited greater degrees of materialism because of the perceived symbolic ability of money to enhance self-esteem, although compulsive buyers also reported more conflict over spending money. Findings by Lejoyeux, Haberman, Soloman, and Ades (1999) further support the interest of compulsive buyers in the "psychological and social guarantees" that purchased items may bring them. Compulsive buyers may acquire items to elevate or maintain their social status, believing their social position obligates them to purchase such designated items. Having highly perfectionistic expectations, compulsive buyers may try to attain unrealistic levels of social acceptance or control over their urges or over their possessions.

The importance of emotional attachment to objects has received equivocal support in the compulsive buying literature. O'Guinn and Faber (1989) failed to find an association with compulsive buying, although their measure of attachment to objects did not exhibit adequate reliability. They concluded that compulsive buyers were more likely to derive psychological benefits from the buying process than from the possession of purchased objects. Conversely, Frost and associates (Frost & Gross, 1993; Frost & Hartl, 1996; Frost, Hartl, Christian, & Williams, 1995; Steketee et al., 2003) have found that, compared to nonhoarders, hoarders exhibited greater levels of emotional attachment to objects and cited more sentimental reasons for saving, although a specific link to acquisition and buying has not been reported.

Hoarders also tend to anthropomorphise and view possessions as extensions of themselves (Greenberg, 1987), with objects valued as safety signals because of the sense of security derived from them. In fact, hoarders often report that discarding possessions becomes akin to losing a loved one (Frost & Hartl, 1996). Hence, objects or possessions may be seen as having particular significance through their particular qualities, with a sense of comfort being gained from their compulsive acquisition (Kyrios et al., 2002; Steketee et al., 2003). In partial support, Lejoyeux et al. (1999) suggested that compulsive buyers regard purchased items as "essential" and purchasing opportunities as occasions not to be missed. They exhibit concerns about the potential loss of opportunities to get a bargain or purchase an object with particular desired characteristics. Lejoyeux et al. (1999) also noted that, despite perceptions that purchased objects are essential, they are often not actually used, possibly reflecting poor decision-making processes.

There is some indication that, like hoarders, compulsive buyers manifest decision-making difficulties. Frost et al. (1998) reported the close association of impaired control over mental activity to both compulsive hoarding and buying. Fears about decision-making have also been associated with both compulsive hoarding and acquisition in cohorts from Australia and the United States (Kyrios et al., 2002).

Furthermore, decision-making difficulties have been found to contribute to the overall impairment and distress amongst compulsive hoarders (Steketee et al., 2003). Decision-making problems may result from the negative affective states associated with compulsive disorders (e.g., anxiety, depression) or, conversely, may be predicated on maladaptive beliefs (e.g., perfectionism).

On the basis of previous research and clinical observations with compulsive buyers, there is reason to expect that maladaptive beliefs influence the misappraisal of specific internal triggers (e.g., depression, self-doubts, shopping urges) or external antecedents (e.g., objects, advertisements, shop displays). It is also likely that cognitive biases and decision-making problems are implicated in compulsive buying. However, although research has led to the development of disorder-specific cognitive measures for OCD (Obsessive Beliefs Questionnaire; Obsessive-Compulsive Cognitions Working Group [OCCWG], 2001) and compulsive hoarding (Saving Cognitions Inventory; Steketee et al., 2003), standardized measures of cognitions associated with compulsive buying have not yet emerged.

The Present Study

In keeping with recent hoarding research, this paper investigates the cognitive correlates of compulsive buying and associated aspects of its pathology (e.g., severity, interference, acquisition). Previously published data using this cohort have supported the association between compulsive buying, hoarding, and OCD (Frost et al., 2002). The present paper specifically examined the association of buying beliefs, perfectionism, and decision-making with buying behavior and related symptoms. We expected that buying beliefs, perfectionism, and decision-making would be associated with measures of compulsive buying, depression, and OCD symptoms, but that buying beliefs would exhibit some specificity to compulsive buying. In addition, the paper investigated the hypothesized relationship of compulsive buying symptoms and beliefs to early developmental influences such as perceptions about parental standards and criticism.

METHOD

Participants

Of 239 respondents to newspaper advertisements for compulsive and noncompulsive buyers, 189 participated in this study by completing a questionnaire package (see Frost et al., 2002 for more details). Overall, 30 respondents failed to return questionnaires, 14 respondents were excluded because of a previous diagnosis or symptoms associated with bipolar disorder and six were underage. Of those completing questionnaire measures, 152 (80%) were female, 165 (90%) were Caucasian, 13 (7%) were African American, and 3% were from other backgrounds. Mean age for the total sample was 39 years ($SD = 12.6$), and average education was between 2 and 3 years of college ($M = 14.4$ years; $SD = 2.4$).

Factor analysis of a newly developed measure of thoughts about buying (Buying Cognitions Inventory), as well as correlational and regression analyses were

conducted with all 189 participants. Group comparisons were conducted with two cohorts, a compulsive buying cohort and a control group, chosen on the basis of scores on the Compulsive Buying Scale (CBS; Faber & O'Guinn, 1989) and in accordance with criteria established by Faber and O'Guinn (1992). Seventy-five participants scored 2 or more standard deviations below the CBS mean reported by Faber and O'Guinn (1992) and were designated "compulsive buyers," whereas 85 participants who scored at or above the CBS mean were retained as a control group. This method was chosen to avoid creating a control group that was heavily weighted with individuals who abnormally restrict their buying.

The compulsive buying cohort consisted of 66 women (88%), whereas the controls had 62 women (73%). These differences in gender distribution were significant ($\chi^2 = 5.65, p < .05$). There were also significant age differences ($F = 8.91, p < .001$), with "compulsive buyers" younger ($M = 36.2, SD = 12.9$) than controls ($M = 42.2, SD = 13.3$). No significant differences were found in years of education ($F = 1.78, ns$) or ethnicity ($\chi^2 = 0.61, ns$).

Measures

Compulsive Buying Scale (CBS)

The CBS is a well-validated 7-item screening measure that has demonstrated adequate reliability and validity in previous research (Faber & O'Guinn, 1989, 1992). It uses an interval scale to assess frequency or degree of agreement with items such as "If I have any money left at the end of the pay period I just have to spend it." Two of the seven items pertain to emotional reactions to shopping (make oneself feel better, feeling anxious when not buying), whereas the remaining five relate to financial aspects of buying. Thus, this measure focuses more on the financial than emotional consequences of compulsive buying. Lower scores on this scale indicate greater levels of compulsive buying. The CBS demonstrated satisfactory reliability ($\alpha = 0.88$) in the present sample.

Yale-Brown Obsessive-Compulsive Scale: Acquisition and Saving Version (YBAS; Steketee et al., 2000)

Modeled on the Yale-Brown Obsessive-Compulsive Scale (Goodman et al., 1989), the 10-item YBAS is a self-report scale that measures the severity and interference caused by saving or acquisition thoughts and behaviors. The YBAS also includes an item measuring avoidance associated with saving or acquiring (e.g., avoidance of shopping). As such, the YBAS is not a measure of compulsive buying; rather, it focuses on the severity of and interference caused by a more general acquisition and saving syndrome. Frost, Meagher, and Riskind (2000) reported excellent internal consistency with an alpha coefficient of 0.94, whereas an alpha coefficient of 0.93 was found with the present sample.

Compulsive Acquisition Scale (CAS; Frost et al., 1998)

The CAS is an 18-item Likert-type scale (from 1 = *not at all or rarely* to 7 = *very much or very often*) that measures the extent to which individuals acquire and

feel compelled to acquire possessions. Two subscales can be calculated: CAS-Buy and CAS-Free. The 12-item CAS-Buy subscale is a slightly expanded version of an 11-item scale used in previous research and found to exhibit adequate reliability and validity (Frost et al., 1998). Two items refer to interference of buying in financial, social, or work functioning, and the remaining items focus on reasons for acquiring possessions, including four questions on the frequency of inappropriate buying, two on feeling compelled to buy, and four on emotional reactions to buying. Thus, the CAS-Buy subscale is a broad measure of compulsive buying behavior and its consequences. CAS-Free, a 6-item subscale, measures the compulsive acquisition of free objects and is an expanded version of a 2-item measure used in previous research (Frost et al., 1998). Both CAS-Buy and CAS-Free demonstrated satisfactory reliability ($\alpha = 0.94$ and 0.87 , respectively) in this sample in previous research (Frost et al., 2002).

Buying Cognitions Inventory (BCI)

The BCI was devised to measure cognitive domains associated with compulsive buying. Forty-three items were initially generated based on several sources including the theoretical model of compulsive hoarding developed by Frost and Hartl (1996), clinical information from compulsive buying cases, and empirical evidence regarding types of cognitions among people with compulsive buying, acquisition, and hoarding problems (e.g., Frost et al., 1995). On a 7-point Likert scale, participants rated the extent to which a thought influenced their decision to buy. Items represented the following cognitive domains: uniqueness and potential value of possessions, concerns about loss of opportunity, memory about objects, fears about ruminating over objects, emotional comfort from objects, control over one's buying behavior and choices, and the conviction that buying objects will compensate, reward, or neutralize negative feelings.

For the purposes of item reduction and identification of subscales, the 43 items of the BCI were subjected to principal axis factoring employing oblimin rotation with Kaiser normalization.⁵ Four subscales were developed: (1) the belief that buying objects will compensate, reward, or neutralize negative feelings (Compensation; 8 items), for example, "This item will make me feel good," "This item will make me feel better"; (2) Emotional reasons for buying objects, including emotional attachment to and emotional security from objects, and memory for objects, (Reasons to Buy; 15 items), for example, "Not buying this item is like losing a friend," "My life would not be complete if I did not have this item"; (3) perceptions about the uniqueness

⁵The Scree plot suggested a 4-factor solution accounting for 67% of the variance. Both the Kaiser-Meyer-Olkin Measure of sampling adequacy (0.955) and Bartlett's Test of Sphericity (approximate $\chi^2 = 6930.81$, $DF = 903$, $p < .000$) were highly adequate. Forty BCI items loaded at $\geq .40$ on one or more of these factors. All four factors closely or exactly replicated hypothesized cognitive domains. To be included in subsequent subscales, items were required to load $\geq .40$ on an interpretable factor and not load strongly on another interpretable factor. The resulting BCI subscales were each very highly correlated ($\geq .95$, $ps < .001$) with corresponding factor scores (weighted scores based on factor loadings for each factor), indicating that the subscales corresponded well with the factor structure. When items that overlap factors were excluded, 36 items were included on the BCI. A table of loadings from the factor analysis and copy of the resulting BCI are available from the authors upon request.

of objects and concerns about loss of opportunity and an inflated sense of personal responsibility for objects (Uniqueness/Loss of Opportunity; 10 items), for example, “If I don’t buy this now and find I need it later, it would be a disaster,” “I am responsible for the well being of this item”; and (4) concerns about maintaining control over one’s buying behavior and choices (Control; 3 items), for example, “I like to maintain sole control over what I buy,” “No one has the right to tell me what I can and cannot buy.” Intercorrelations among the BCI subscales were high ($r_s = .46-.80$, all $p_s < .001$), indicating that the belief dimensions assessed by the BCI were related. Alpha coefficients for the BCI scores indicated highly satisfactory internal consistency: Compensation (.94), Reasons to Buy (.96), Uniqueness/Loss of Opportunity (.92), and Control (.88).

Padua Inventory (PI; Sanavio, 1988)

The PI is a 60-item self-report inventory that uses a 5-point Likert-type scale to measure the degree of disturbance caused by thoughts, behaviors, and urges associated with OCD. Five subscales were used based on the Washington State revision of the scale (Burns, Keortge, Formea, & Sternberger, 1996): harming thoughts, harming impulses, contamination fears, checking, and dressing. Adequate reliabilities for the total score and subscales have been reported previously for this sample (Frost et al., 2002).

Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988)

The BDI comprises 21 items that ask recipients to indicate the extent to which they exhibit cognitive, affective, somatic, and vegetative symptoms of depression and dysphoria. The psychometric properties of the BDI are well documented (Beck et al., 1988). The internal consistency of the BDI was supported in previous research with this sample ($\alpha = 0.90$; Frost et al., 2002).

Frost Indecisiveness Scale (FIS; Frost & Shows, 1993)

The FIS is a 15-item scale designed to measure attitudes and fears or difficulties associated with making decisions. Nine items are negatively worded and six are worded positively. Examples include “I become anxious when making a decision” and “I find it easy to make decisions.” This scale demonstrated adequate reliability and validity in a study of undergraduate students (Frost & Shows, 1993), and was associated with compulsive hoarding in student and community samples (Frost & Gross, 1993; Steketee et al., 2003). Two subscales were calculated: Fears About Decision-Making consisting of nine negative items, and Positive Attitudes Towards Decision-Making consisting of six positively worded items. Both subscales demonstrated adequate reliability ($\alpha_s = 0.88$ and 0.82 , respectively) in this sample.

*Frost Multidimensional Perfectionism Scale
(FMPS; Frost et al., 1990)*

The FMPS is designed to measure perfectionistic attitudes and their developmental antecedents. Five subscales were used: Concern Over Mistakes (CM), Doubts

About Actions (DA), Personal Standards (PS), Parental Expectations (PE), and Parental Criticism (PC). The CM subscale measures overly critical self-evaluation. DA reflects general uncertainty about the quality of one's efforts. PS reflects the setting of excessively high standards. PE and PC are measures of the expectations and critical evaluations of parents towards their children. Reliability and validity of this scale has been well established (Frost et al., 1990). In the present study, alpha coefficients of internal reliability were adequate for all subscales, ranging from 0.84 to 0.93.

Procedure

Procedural details have been published previously (Frost et al., 2002). Participants were solicited from two separate advertisements in local newspapers asking for either volunteers with compulsive buying problems or with no particular difficulties with compulsive buying. Participants were told they would be paid \$15. To rule out buying behavior as a symptom of other disorders, participants were screened by phone for the presence of diagnosed or potential symptoms of mania and borderline personality disorder. Subjects over the age of 18 who reported no symptoms of mania or borderline personality disorder on screening measures completed a questionnaire pack that was mailed to them with instructions and a return envelope. Checks for \$15 were mailed upon return of completed questionnaires.

RESULTS

Differences between the compulsive buying cohort and controls were examined via analysis of variance. Correlations and semipartial correlations were used to examine the relationship of buying cognitions to compulsive buying behavior and related symptoms. Regression analyses examined the contribution of specific buying cognitions in predicting compulsive buying after controlling for age, mood problems and OCD symptoms, and other cognitive factors.

Differences Between Compulsive Buying Cohort and Controls

Significant differences between the compulsive buying cohort and controls on the Padua Inventory, BDI, and the Hoarding Scale (Frost & Gross, 1993) are reported elsewhere in greater detail (see Frost et al., 2002) with compulsive buyers more likely to report symptoms of OCD, depression, and compulsive hoarding. In the present study, ANOVAs were used to compare the two cohorts on additional symptomatic (CBS, CAS, YBAS) and cognitive measures (BCI, FMPS, and FIS). A Bonferonni adjustment was used with p values set at .003. As expected, compulsive buyers differed from controls on all four measures associated with compulsive buying symptoms (CBS, $F(1, 159) = 787.0$; CAS-Buy, $F(1, 159) = 272.7$; CAS-Free, $F(1, 152) = 40.82$; YBAS, ($F(1, 159) = 121.7$; all $ps < .001$). Compulsive buyers also scored higher than the controls on all of the FMPS subscales except Parental Expectations and on all other cognitive measures with the exception of FIS Positive Attitudes Towards Decision Making (Table I).

Table I. Descriptives and ANOVAS: Comparisons Between Compulsive Buyers and Controls

	Compulsive buyers (<i>n</i> = 75)		Controls (<i>n</i> = 85)		<i>F</i>	Significance
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
BCI Compensation	43.12	8.89	23.07	12.16	138.54	.001
BCI Reasons to Buy	48.45	22.96	24.27	15.15	63.14	.001
BCI Uniqueness/Loss of Opportunity	41.00	12.56	22.75	12.07	87.69	.001
BCI Control	18.03	3.50	13.13	6.24	36.09	.001
FMPS Concern over Mistakes	31.12	10.78	19.54	8.68	55.45	.001
FMPS Personal Standards	24.73	6.48	21.57	6.22	9.51	.002
FMPS Parental Expectations	15.79	5.89	13.40	5.11	7.53	.007 ^a
FMPS Parental Criticism	12.26	5.16	8.19	3.96	31.31	.001
FMPS Doubting of Actions	12.37	4.08	7.64	3.03	69.49	.001
FIS Fears about decisions	28.03	7.90	18.67	6.04	70.34	.001
FIS Positive Attitudes	18.34	5.43	16.25	5.12	6.11	.015 ^a

Note. BCI = Buying Cognitions Inventory; FIS = Frost Indecisiveness Scale; FMPS = Frost Multidimensional Perfectionism Scale.

^aThese comparisons did not meet criteria for significance, Bonferroni adjustment $p < .003$.

Relationships Amongst Buying Cognitions and Symptom Measures

Pearson zero-order correlations between buying cognitions and measures of compulsive buying, OCD, and mood symptoms are given in Table II. Three of the BCI subscales correlated highly with compulsive buying measures ($r_s = |.59-.88|$), and BCI Control exhibited moderate correlations ($r_s = |.30-.58|$). When two items measuring emotional responses associated with compulsive buying were removed from the CBS Total score, correlations between all BCI scales and the revised CBS Total score remained significant ($p < .001$) and in the moderate to high range ($-.65$, $-.52$, $-.54$, and $-.40$, respectively for BCI Compensation, Reasons to Buy, Uniqueness/Lost Opportunity, and Control, respectively). Moderate to high correlations were also found for BCI subscales and measures of OCD ($r_s = |.37-.68|$) and free acquisition ($r_s = |.39-.68|$). Correlations with the depression measure (BDI) were in the moderate range ($r_s = |.33-.50|$).

With regard to the other cognitive measures, FMPS Concern over Mistakes, Doubts about Actions and Parental Criticism, as well as FIS Fears About Decision-Making showed moderate to high correlations with compulsive buying measures, Padua, and BDI ($r_s = .39-.63$). FIS Positive Attitudes to Decision-Making and FMPS Personal Standards and Parental Expectations showed only weak or nonexistent association with symptom measures.

To examine the specificity of buying cognitions, we conducted sets of semipartial correlations of the BCI scales with compulsive buying severity, controlling for OCD symptoms (Padua Inventory) and depression (BDI). Virtually no differences were found between semi partials when BDI and Padua total scores were controlled separately. For parsimony, Table II presents semi partials when both measures were partialled out concurrently. These semi partial correlations indicated little attenuation of the strong associations of buying cognitions with compulsive buying symptom measures (part $r_s = |.20-.88|$), especially for BCI Compensation, Reasons to Buy, and Uniqueness/Lost Opportunity. In contrast, the associations of perfectionism and decision-making fears to compulsive buying were reduced (part $r_s = |.01-.35|$),

Table II. Zero Order* and Semipartial** Correlations Among Symptom and Cognitive Measures for Total Sample ($n = 189$)

	Zero-order correlations					
	CBS total	YBAS total	CAS buying	CAS free acq	Padua total	BDI total
BCI Compensation	-.73*	.70*	.88*	.59*	.59*	.50*
BCI Reasons to Buy	-.60*	.68*	.72*	.62*	.68*	.46*
BCI Uniqueness/Loss of Opportunity	-.61*	.63*	.78*	.68*	.63*	.42*
BCI Control	-.45*	.39*	.58*	.39*	.37*	.33*
FMPS Concern over Mistakes	-.57*	.55*	.56*	.39*	.49*	.55*
FMPS Personal Standards	-.23	.33*	.28*	.24	.31*	.34*
FMPS Parental Expectations	-.22	.33*	.23	.31*	.21	.23
FMPS Parental Criticism	-.41*	.50*	.44*	.48*	.42*	.41*
FMPS Doubting of Actions	-.52*	.54*	.57*	.49*	.59*	.52*
FIS Fears about Decisions	-.54*	.56*	.60*	.53*	.63*	.55*
FIS Positive Attitudes	-.15	.02	.17	-.04	.10	.26*
	Semipartials partialling out Padua and BDI				Semipartials partialling out compulsive buying measures	
BCI Compensation	-.53**	.54**	.82**	.34**	.06	.06
BCI Reasons to Buy	-.47**	.53**	.57**	.36**	.36**	.03
BCI Uniqueness/Loss of Opportunity	-.51**	.45**	.70**	.46**	.25	-.02
BCI Control	-.32**	.20	.47**	.24	.00	.06
FMPS Concern over Mistakes	-.35**	.28**	.28**	.09	.25	.26
FMPS Personal Standards	-.03	.15	.09	.03	.12	.16
FMPS Parental Expectations	-.12	.25	.13	.20	.19	.06
FMPS Parental Criticism	-.21	.30**	.23	.30**	.15	.17
FMPS Doubting of Actions	-.26**	.21	.22	.20	.36**	.25
FIS Fears about Decisions	-.25	.17	.23	.24	.37**	.32**
FIS Positive Attitudes	.01	-.13	.03	-.13	-.01	.25

Note. BCI = Buying Cognitions Inventory; BDI = Beck Depression Inventory; CAS = Compulsive Acquisition Scale; CBS = Compulsive Buying Scale; FIS = Frost Indecisiveness Scale; FMPS = Frost Multidimensional Perfectionism Scale; Padua = Padua Inventory-Revised; YBAS = Yale-Brown Obsessive-Compulsive Scale: Acquisition and Saving.

* $p < .0008$ (Bonferroni adjusted significance level). ** $p < .001$ (Bonferroni adjusted significance level).

although FMPS Concern over Mistakes and, to a lesser extent, Parental Criticism maintained significant associations with compulsive buying measures. Fears about Decision Making were no longer significantly related to compulsive buying measures when Padua and BDI were partialled out. We also conducted a set of semi partial correlations of the BCI scales with CBS Total controlling for the hoarding scale. Significant ($p < .001$) semi partial correlations were maintained for all four BCI subscales ($-.48, -.30, -.32,$ and $-.23$ for BCI Compensation, Reasons to Buy, Uniqueness/Lost Opportunity, and Control, respectively).

To determine the extent to which buying beliefs were specific to compulsive buying symptoms rather than related to the broader constructs of depression and OCD, we conducted an additional set of semi partial correlations of the cognition scales with OCD symptoms (Padua Inventory) and depression (BDI) controlling for compulsive buying measures (Table II). Buying beliefs no longer exhibited significant associations with depression (part r s were nears zero), or with OCD symptoms except for BCI Reasons to Buy. Semi partial correlations for both perfectionism

Table III. Zero Order and Partial Correlations Between Compulsive Buying Measures and Parental Variables

	BCI compensation	BCI reasons to buy	BCI lost opportunity	BCI control
Zero-order correlations				
FMPS parental expectations	.23*	.27*	.24*	.24*
FMPS parental criticism	.38*	.39*	.37*	.23*
Partiallying out BDI				
FMPS parental expectations	.10	.16	.12	.19
FMPS parental criticism	.24*	.26*	.22*	.14
Partiallying out Padua				
FMPS parental expectations	.15	.18	.12	.24*
FMPS parental criticism	.24*	.19	.13	.16
Partiallying out CBS				
FMPS parental expectations	.06	.15	.12	.17
FMPS parental criticism	.13	.19	.16	.07

Note. BCI = Buying Cognitions Inventory; FMPS = Frost Multidimensional Perfectionism Scale; BDI = Beck Depression Inventory; Padua = Padua Inventory-Revised; CBS = Compulsive Buying Scale.

* $p < .01$ (Bonferroni adjusted significance level).

and decision-making fears showed a diminution in the magnitude of relationships to depression and OCD; only FIS Fears About Decision-Making maintained a significant relationship to both depression and OCD symptoms, whereas FMPS Doubting remained significantly associated with OCD symptoms.

Relationship of Buying Cognitions to Parenting Variables

Zero order and partial correlations were performed to examine the relationship between parenting variables from the FMPS and buying cognitions (see Table III). Parental expectations and, especially, parental criticism correlated moderately and significantly with BCI subscales (average r s were 0.25 and 0.34, respectively, $p < .001$). However, when BDI was partialled out, correlations diminished and only parental criticism maintained a moderate relationship with three of the four buying cognitions scales. A similar pattern was evident when Padua scores were partialled out except that most correlations of parental criticism with BCI scales were no longer significant. When buying severity was partialled out, no correlations remained significant.

Prediction of Compulsive Buying Measures

To examine whether buying beliefs predicted compulsive buying behavior over-and-above other variables (age, mood, OCD symptom severity, and other cognitive factors), we conducted hierarchical regression analyses using the total sample. The following variables were entered in stepwise order: (1) age, (2) BDI and Padua, (3) other beliefs (FMPS, FIS Total scores), and finally (4) buying beliefs (four BCI subscales). Criterion measures constituted the three different compulsive buying measures (YBAS, CBS, and CAS-Buy) as each is associated with particular aspects of the compulsive buying syndrome. For all regression analyses, tests of multicollinearity indicated that tolerances, VIFs, conditional indices, and variance proportions were

within acceptable ranges. With the exception that age did not predict YBAS Total, all steps in each of the three hierarchical regressions significantly predicted the compulsive buying measure. The R^2 change in step 4 (i.e., the four BCI subscales) after other variables had been entered was 0.20, $F(4, 171) = 23.02$, $p < .001$, 0.14, $F(4, 168) = 17.82$, $p < .001$, and 0.32, $F(4, 158) = 94.79$, $p < .001$, when predicting CBS Total, YBAS Total, and CAS-Buy, respectively. Hence, buying specific cognitions significantly predicted compulsive buying behavior when age, mood, OCD, decision-making fears and perfectionistic beliefs, and developmental influences were controlled.

DISCUSSION

This study examined beliefs and attitudes associated with compulsive buying in a sample of respondents to advertisements in local papers who perceived themselves as either having or not having a compulsive buying problem. The compulsive buying cohort scored in the clinical range relative to samples of compulsive buyers and hoarders from previously published research on various measures of compulsive buying, acquisition, and saving (Faber & O'Guinn, 1992; Steketee et al., 2003). Previously published data by this group had already indicated that these cohorts also differed on measures of hoarding, depression, and OCD (Frost et al., 2002). As expected, the compulsive buying cohort was more likely to buy, acquire, save and hoard, and to exhibit more symptoms of depression and OCD.

Although various researchers have identified cognitive domains associated with compulsive buying (DeSarbo & Edwards, 1996; O'Guinn & Faber, 1989), little research has examined the importance of a range of these beliefs nor their relative contribution to compulsive buying as distinct from related clinical phenomena. With regard to cognitions purported to be particularly relevant to compulsive buying and acquisition, this study found that the BCI assessed four such beliefs systems. Firstly, compulsive buying was associated with the belief that the acquisition of objects would compensate, reward, or neutralize negative feelings. The perceived compensatory benefits of uncontrolled buying with regard to personal deficits (e.g. poor self-esteem and self identity, mood problems) have been emphasized previously by researchers investigating both compulsive (Hanley & Wilhelm, 1992; Lejoyeux et al., 1999) and impulse buying (Dittmar, 1992; Dittmar, Beattie, & Friese, 1995).

Secondly, despite equivocal support from past research, our study also supported the salience of potential purchases for compulsive buyers, the emotional attachments they form and security they derive from purchased objects, the fears they experience about losing an opportunity to purchase particular objects, and rationalizations for the purchase of objects (e.g., need to buy to remember objects, greater sense of personal responsibility for objects). Frost and associates reported similar findings from compulsive hoarders, particularly with regard to citing more reasons for acquiring objects (Frost et al., 1995; Frost & Gross, 1993; Frost & Hartl, 1996; Steketee et al., 2003).

Finally, buyers endorsed greater concerns about maintaining control over their buying behavior and choices. In the context of the perceived uncontrollable nature

of compulsive buying, more concern about control is not surprising. However, given the limited specificity of the BCI Control subscale to compulsive buying measures, it remains to be seen whether such control concerns are related to more general cognitive domains associated with OCD and depression (e.g., perfectionism, intolerance for uncertainty, threat, control over thoughts, etc.).

As expected, moderate to strong correlations were found between buying beliefs and measures of compulsive buying and acquisition of free things. Semi-partial correlations also suggested some specificity in the relationship of buying beliefs to compulsive buying. Buying beliefs were still strongly correlated with compulsive buying and acquisition, even after controlling for measures of hoarding, OCD, and depression. However, the reverse was not necessarily true for measures of OCD and depression. The only exception involved the BCI Reasons to Buy scale which continued to exhibit a moderate association with the obsessive-compulsive measure after compulsive buying measures were partialled out, supporting previous theoretical work which suggests attachment problems in obsessive-compulsives (Guidano & Liotti, 1983). Nonetheless, in general, attitudes towards buying and objects or potential purchases were linked to buying behavior and less so to mood and OCD symptoms. Regression analyses further indicated the contribution of buying cognitions to compulsive buying behavior and severity, with between 14 and 32% of variance in compulsive buying measures accounted for by buying-specific cognitions after other variables were controlled. Of the buying-related beliefs, the conviction that buying could compensate, reward, or neutralize negative feelings, emotional attachment and related reasons for buying objects, concerns about loss of opportunity, and perceptions about the uniqueness of, and responsibility for objects were generally more strongly associated with buying behavior than were concerns about control of buying behavior. However, concerns about control still maintained moderate associations with compulsive buying measures when OCD and depressed mood were controlled.

In this study, as expected, most aspects of perfectionism and decision-making difficulties were associated with compulsive buying and acquisition, OCD symptoms, and depression. Exceptions included perfectionistic personal standards, which failed to correlate significantly with buying and free acquisition, and positive attitudes toward decision-making, which correlated significantly only with the depression measure. A diminution in the magnitude of relationships of both perfectionism and decision-making difficulties to all compulsive buying measures was evident when depression and OCD symptoms were controlled, though significant relationships remained for certain dimensions of perfectionism. However, perfectionism and decision-making showed more attenuation in their relationship to depression and OCD when buying was controlled than in their relationship to buying when depression and OCD were controlled. Hence, although perfectionism and decision-making may constitute general markers of vulnerability to mood and compulsive disorders, they also share some unique variance with compulsive buying. Similar findings have been reported from studies of compulsive hoarding. For instance, indecisiveness has been found to be strongly related to compulsive hoarding behaviors (Frost & Shows, 1993) and, in hoarders, appears to be a manifestation of several cognitive processes, including perfectionistic fears of making mistakes and uncertainty

over the value of possessions (Frost et al., 1990; Frost & Hartl, 1996; Frost & Shows, 1993).

Previously published research supporting the association between depression and compulsive buying (Black, Repertinger, Gaffney, & Gabel, 1998; Faber & Christensen, 1996; Lejoyeux, Hourtane, & Ades, 1995) was confirmed in the present study. Although we found support for the notion that compulsive buying acts as a compensatory strategy for dealing with negative mood and low self-esteem, alternative hypotheses are also viable. Depression is also likely to result in a range of cognitive distortions and negative thinking, as well as decision-making difficulties. Previous research has supported the relationship of negative mood to fears about decision-making and perfectionism (Kyrios et al., 2002), both of which were found to be related to compulsive buying in the present study. La Rose (2001) also suggests that impulsive and compulsive buying may constitute a behavioral addiction in which depression weakens effective self-regulation. Future research needs to further delineate such relationships.

In general, the pattern of results reflects similarities in symptomatic and cognitive correlates of both compulsive hoarding and buying. With regard to cognitive factors, it has been proposed that maladaptive attachment patterns, erroneous beliefs about the nature of possessions, and information processing and decision-making deficits underlie compulsive hoarding (Frost & Hartl, 1996). Similarly, the present study implicates maladaptive attachments to objects, beliefs about the uniqueness of and responsibility for desired objects, and decision-making fears in the development of compulsive buying. As discussed previously, the cognitive domains of perfectionism and indecision have also been found to be related to both compulsive hoarding and buying, adding further support for the notion of a broad construct of compulsive acquisition or consumption (Faber et al., 1987; O'Guinn & Faber, 1989). Although obsessional beliefs have been linked to compulsive hoarding, their relationship to compulsive buying has yet to be investigated. To untangle the cognitive basis of the range of compulsive (and impulsive) disorders, future research will need to investigate the differential relationships of hoarding-related, obsessional and buying-related cognitions to compulsive hoarding, acquisition, buying, and OCD.

This study examined a limited range of parental influences using subscales of the FMPS. Perceptions of parental criticism, but not parental expectations, were closely related to compulsive shopping and acquisition. However, semi partial correlations indicated that this relationship may be mediated by depression and OCD symptoms, particularly for buying rather than acquisition per se. Perceptions of both parental expectations and, especially, criticism were related to beliefs about buying, although the nature of this relationship may be more complex. Partial correlations indicated that it was somewhat influenced by depression, and more so by compulsiveness. That negative parental influences associated with perfectionism were related to compulsive buying supports the theoretical work of Guidano and Liotti (1983) who emphasized the etiological significance of ambivalent parenting styles and attachments to obsessions and compulsive behavior.

Attachment theory suggests that internal working models about oneself and the world are based on the quality of a child's early attachments which, in turn, are based partly on the quality of relationships with parental figures (Bowlby, 1969,

1973). It is possible that high levels of perceived parental criticism may place one at risk for developing stronger attachments to objects and material goods, perhaps as a way of feeling secure or by compensating for perceived personal faults and vulnerabilities (i.e., poor self-esteem). The relationship between perceptions about parental criticism and buying beliefs may not be totally independent of other aspects of psychopathology such as OCD symptoms. Although OCD cohorts have been found to report that their parents are overprotective compared to controls (Turgeon, O'Connor, Marchand, & Freeston, 2002), such research findings are not reported consistently (Vogel, Stiles, & Nordahl, 1997), nor has research adequately investigated the influence of conditional parenting styles and ambivalent attachments in obsessive-compulsive disorders (Bhar & Kyrios, 2000; Guidano & Liotti, 1983). Although the present study provides some support for the antecedent nature of poor self-esteem and memories of parenting with respect to compulsive buying, such factors also constitute predisposing factors for a range of mental health problems. More research, particularly of a longitudinal nature, is required to understand the specificity and causal direction of the relationship between early developmental influences, cognitive domains, and the range of mood, anxiety, and compulsive disorders.

Conclusions from this study are restricted due to a number of methodological limitations. The measure of buying-specific cognitions (BCI) requires further development, and supplementary items assessing other relevant cognitive domains may need to be added (e.g., materialism, positive and negative attitudes towards shopping). The lack of a standard diagnostic interview to determine the clinical status of participants is a further limitation. Although clear diagnostic criteria for compulsive buying do not exist currently, we went to great lengths to maximize confidence that our "compulsive buying" cohort experienced symptoms of clinical significance. Various measures of compulsive buying were used each with a particular focus relating to either severity of buying, interference, and/or its financial and social or personal consequences. Future research needs to examine specific aspects of symptomatology within the compulsive buying/shopping/acquisition syndrome (e.g., compulsiveness vs. impulsivity, buying frequency and intensity vs. interference, financial vs. psychological sequelae, comorbid vs. single diagnosis presentations, etc.) to further emerging theoretical models.

Overall, this study supported a theoretical model of compulsive buying deriving from five main domains: (a) affective difficulties; (b) compromised self-perceptions and perfectionistic expectations; (c) erroneous beliefs about the nature of objects, potential purchases, and purchasing opportunities; (d) erroneous beliefs about the psychological benefits of buying; and (e) decision-making difficulties. Future research will need to delineate the relative contribution of these domains compared with other etiological influences.

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