SOCIAL VALUES AND SOCIAL MOTIVATIONS AS VULNERABILITY FACTORS FOR EXCESSIVE ACQUISITION

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Abstract

Both people who compulsively buy and most of those who hoard struggle with excessive acquisition. Excessive acquisition refers to acquiring so many items that distress or functional impairment occur as a result. Social factors are important for day-to-day purchasing decisions. What role do social factors, like materialism and social motivations play in excessive acquisition? And do these roles depend on if the person struggles with hoarding or not?

Both a meta-analysis and an online survey were used to investigate these questions. The meta-analysis showed that materialism and compulsive buying were moderately correlated, $r = .45$, 95% CI [.42, .48]. The online survey examined relations between materialism, social motivations, and excessive acquisition among participants with strong hoarding symptoms ($n = 50$), compulsive buying symptoms ($n = 51$), and participants who acquire in a healthy way ($n = 119$). Participants completed measures of materialism and social motivations, as well as a Q-sort Status-Seeking task.

Materialism and depression were more strongly related to acquisition among research participants who have problems with excessive acquiring than among those with non-problematic acquiring, but they did not distinguish people with compulsive buying from those with hoarding symptoms. In terms of social motivations, both concerns over being excluded and wanting to preserve one’s reputation correlated with excessive acquisition, but neither was a significant predictor when accounting for materialism, depression, and age. Moreover, no differences were observed between these two problem behaviours in terms of how strongly excessive acquiring was related to social motives, depression, and materialism. Thus, these two research streams would benefit from greater collaboration for future research and treatment interventions.
Lay Summary

People who compulsively buy and most people with hoarding disorder struggle with excessive acquisition, which is acquiring so much stuff that negative consequences occur. The current research examined social factors as correlates of excessive acquisition and whether these relations are similar for compulsive buying and hoarding. A meta-analysis indicated that compulsive buying and materialism are consistently moderately correlated across many studies. In an online survey, relations between materialism, social motivations, depression, and excessive acquisition were investigated in three samples: hoarding symptom, compulsive buying symptom, and healthy acquiring groups. Materialism and depression were more strongly related to acquisition among participants who had problems with excessive acquiring than among those with non-problematic acquiring. No differences, however, were observed between the two excessive acquiring groups in terms of how strongly acquiring was related to social motives, depression, and materialism. Thus, these two research streams would benefit from greater collaboration for future research.
Preface

The work for this dissertation was completed under the supervision of Dr. Sheila Woody in the UBC Centre for Collaborative Research on Hoarding. I devised the research questions, developed the Q-sort task, chose all study measures, identified relevant articles for the meta-analyses, trained one lab member to assist with the meta-analysis data harvesting process, recruited participants and collected data for an online survey study, trained one lab staff member to help guide participants through the online Q-sort Task over the telephone, analysed data for both the meta-analyses and online survey study, and wrote this dissertation. This research was approved by the UBC Behavioural Research Ethics Board, UBC BREB #H21-01837.
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Chapter 1: Conceptual Framework

When it comes to the battle of “less is more” or “more is more”, the latter phrase seems to be the clear winner for people who struggle with compulsive buying and hoarding. People who struggle with compulsive buying (also known as buying-shopping disorder) and most of those who hoard have problems with an umbrella term, *excessive acquisition*. Excessive acquisition refers to excessively acquiring purchased or free items, which results in negative consequences for the person. People who compulsively buy purchase too many items, and as a result, they face social, emotional, and financial problems, such as marital discord, and bankruptcy (Christenson et al., 1994). Many people who hoard excessively acquire both purchased and free items. Those who hoard encounter numerous problems, including extreme clutter that impairs daily functioning, severe social isolation (Frost et al., 2000; Samuels et al., 2008), and high risk for eviction (Rodriguez et al., 2012). To make matters worse, hoarding can represent threats to one’s life, as hoarding accounts for 25% of preventable fire fatalities (Lucini et al., 2009). Despite these high costs, people who compulsively buy and most people who hoard continue to garner objects at a troubling rate. Are these behaviours the same? Different? This dissertation will investigate in what ways the nature of acquiring is similar or different for hoarding and compulsive buying, with a focus on social values and social motivations as possible vulnerability factors.

To date, treatments for excessive acquisition have modest outcomes (Hague et al., 2016; Tolin et al., 2015); Clearly, a better understanding of the developmental process and maintenance of excessive acquiring behaviours is necessary to design interventions that will be effective in helping people who compulsively buy and hoard. Understanding how excessive acquisition is similar or different across the two disorders would be a good step toward improving treatments.
for these individuals. If these two clinical groups are quite similar, then bringing these two research streams together could improve efficiency in developing etiological models and treatment approaches. On the other hand, if excessive acquisition is quite distinct in compulsive buying and hoarding, this will improve understanding of excessive acquisition overall and help tailor treatments appropriately.

This chapter will provide a review of the relevant literature on excessive acquisition, define important concepts, identify gaps in knowledge, and introduce my research goals.

**Literature Review**

**Hoarding Disorder**

Hoarding disorder is considered a distinct mental health disorder (American Psychiatric Association, 2013), with the majority of these individuals having problems with excessive acquisition. Hoarding involves persistent difficulties with letting go of belongings due to strong urges to save objects (American Psychiatric Association, 2013). As a result, homes start filling up with objects to the point where residents can no longer cook, sleep, or entertain family and friends. Approximately 90% of people who hoard also acquire more items than they need or have room for, either presently or in the past (Frost et al., 2013). The population prevalence of hoarding has been estimated to be between 1.7% to 3.6% (Postlethwaite et al., 2019).

Hoarding disorder has several costs to both residents of hoarded homes and the general public. Having large piles of stuff throughout the home presents physical dangers such as tripping hazards, clutter avalanches, blocked exits during emergencies, and increased chances of fire. Extreme clutter can also result in social stigma and strained family relationships (Diefenbach et al., 2013; Tolin et al., 2008). People who hoard are likely to encounter conflict
regarding their household conditions with neighbours, housing providers, and social service agencies.

Problems with excessive acquisition, difficulty discarding, and maladaptive accumulations of clutter are often seen as the main features of hoarding. These three features appear as subscales in the Saving Inventory – Revised (SI-R; Frost et al., 2004), a self-report questionnaire that measures hoarding symptoms. This widely-used 23-item measure has excellent psychometric properties (Frost et al., 2004; Tolin et al., 2010), and factor analyses have established excessive acquisition, difficulty discarding, and clutter as distinct correlated factors (Frost et al., 2004; Tortella-Feliu et al., 2006). Treatment recommendations are also structured around these three hoarding symptoms. The most effective treatment thus far for hoarding is specialized cognitive-behavioural therapy for hoarding (Steketee & Frost, 2013). This treatment identifies acquisition, difficulty discarding, and clutter as the three main targets of intervention, with different recommended approaches for each target.

Problems with excessive acquisition are especially noteworthy in hoarding. Acquisition within hoarding becomes problematic when the home has no room for the overflow of stuff, the person’s finances become strained, or the acquiring causes interpersonal conflict. For those struggling with hoarding, bringing home too many items correlates with more severe difficulty discarding and higher clutter volume (Frost et al., 2013), earlier onset of the disorder, greater occupational impairments, and more comorbidities (Frost et al., 2009). Additionally, specialized CBT for hoarding (Steketee & Frost, 2013) recommends addressing excessive acquisition at the beginning of hoarding treatment. If excessive acquisition is not adequately addressed from the start, any progress made in difficulty discarding and clutter will be canceled out by the continuous flow of items that enter the home. Thus, developing a strong understanding of
excessive acquisition in hoarding is essential to improve treatment outcomes for people who hoard.

Rigorous research on hoarding began in the 1990s when Frost and Hartl (1996) proposed a cognitive-behavioural (CB) model of hoarding, which was updated in 2003 (Steketee & Frost, 2003). Frost and Hartl asserted that the three core features of hoarding (i.e., excessive acquisition, difficulty discarding, and clutter) are multifaceted problems related to information-processing deficits, maladaptive beliefs about possessions, and strong emotional responses to objects. This model of hoarding suggests that because objects evoke strong emotions, discarding items can be particularly distressing. To avoid these negative emotions, many people who hoard postpone discarding indefinitely, which maintains their maladaptive beliefs and attachment to their objects.

Nearly 30 years have now passed since the CBT model for hoarding was first proposed. I will provide a review on research to identify vulnerability factors in hoarding.

**Possible Vulnerability Factors for Hoarding Disorder.** Frost and Hartl (1996) proposed information-processing difficulties as a vulnerability factor for hoarding. Hoarding clients complain of problems with attention, memory, planning, and decision making. Their homes are also typically disorganized, with piles of objects throughout the home that contain mixed categories and mixed importance of items (Frost & Hartl, 1996). Perhaps difficulties in cognition may contribute to the chaotic state of the home and inability to contain or organize the clutter. In a review paper, Woody and colleagues (2014) found that participants with hoarding problems demonstrated replicable difficulties with sustained visual attention and general spatial planning abilities compared to clinical and healthy controls. However, in a study that included a diverse battery of neurocognitive tests, participants with hoarding disorder showed no
differences from healthy controls on a wide array of domains, including visual attention and general spatial planning abilities (Woody, Lenkie, Neal, & Bogod, 2021). Interestingly, in another sample of participants with varying levels of hoarding symptoms (including those diagnosed with hoarding disorder), a strong correlation ($r = .68$) was found between hoarding symptoms and participants’ self-reported Attention-Deficit Hyperactivity Disorder symptoms. Furthermore, participants in the hoarding disorder group made more errors than a healthy control group during tasks that required attention (Woody, Lenkie, Jiang, & Bogod, 2021). Taken together, the idea that information-processing deficits is a risk factor for hoarding has received mixed support in the literature.

Difficulties with self-control, or the capacity to exert control over directed behaviour to achieve goals, may be another vulnerability factor for hoarding. Timpano et al. (2013) hypothesized that one reason why people who hoard have so much difficulty parting with objects could be related to deficits in self-control. These researchers employed an experimental design to test this hypothesis. Undergraduate participants who engaged in a laboratory task that depleted their self-control resources saved objects more often than those in a control condition ($d = 0.47$). These findings suggest that deciding to discard objects may be more taxing in terms of self-control than deciding to save them, and accordingly, people may be more vulnerable to saving when they have exerted their self-control resources. Though this study is a good first step in understanding self-control and difficulties discarding, the next step would be to replicate these findings in other samples, including clinical hoarding populations.

Experiential avoidance is another possible risk factor for hoarding. Experiential avoidance seems to be important for difficulty discarding in hoarding, as people who hoard often describe making decisions about discarding as an intense, emotionally negative experience.
In a nonclinical sample, Timpano et al. (2009) found that anxiety sensitivity was moderately correlated with self-reported hoarding severity ($r = .26$). In terms of experiential avoidance, or deliberate avoidance behaviours aimed to prevent distress, Wheaton and colleagues (2011) demonstrated that undergraduates’ self-reported emotional avoidance showed a small correlation with SI-R total ($B = -.15$), even after controlling for saving cognitions and general distress. Experiential avoidance and perfectionism have also been linked. In a community adult sample, Moroz and Dunkley (2019) found a fairly strong correlation between experiential avoidance and perfectionism ($r = .61$). Perfectionism may also be relevant to hoarding, as fears about making mistakes regarding which items to discard and wanting to avoid intense emotional experiences can result in postponing discarding decisions indefinitely.

Perfectionism has been correlated with self-reported hoarding severity in a community sample ($r = .40$; Timpano et al., 2009) and among undergraduates ($r = .25$; Frost & Gross, 1993). At this point, experiential avoidance seems to have good potential for being a vulnerability factor for hoarding, though more research within clinical hoarding samples needs to be completed.

The vulnerability factors described thus far for hoarding are highly focused on individual internal emotional states and cognitive abilities; however, social processes are also important in shaping many acquiring decisions. For example, family history includes social processes, and people who hoard often report that their own family members also have problems with hoarding. In a sample of 624 patients with obsessive-compulsive disorder (OCD), those who also had hoarding symptoms ($n = 235$) were more likely to have first-degree relatives with hoarding problems compared to their non-hoarding counterparts (49% vs. 33%; Samuels et al., 2008). In a separate study, when comparing age- and gender-matched samples ($N = 150$), those participants with OCD and significant hoarding symptoms were more likely to report having grown up in a
cluttered home than either participants with OCD without hoarding or healthy control groups (36% vs. 16% vs. 10%, respectively; Steketee et al., 2015). Thus, people with hoarding disorder are likely to have been brought up in a cluttered home environment or have other family members who modeled hoarding-related behaviours, such as excessive acquiring and difficulty discarding.

Buying can be a social process, as people often rely on social cues to help them decide which items to purchase and at what price (Kim & Kim, 2012; Kukar-Kinney & Xia, 2017). Consumerism researchers assert that social values and social motivations are integral to acquiring decisions. From imagining how one’s friends will react to certain purchases (Islam et al., 2018; Roberts et al., 2008; Xu, 2008), to buying items that will likely impress others after a recent social rejection (Mead et al., 2010), social information is related to purchasing decisions. Marketing companies have wholly accepted this notion as well. Many advertising campaigns are designed to push people to buy based on social factors. For example, many marketing campaigns use celebrity endorsements and hire YouTube and Instagram influencers to talk about products; companies often inform customers that specific products that were previously sold out are now available due to popular demand.

Given that social cues are important for acquiring decisions, what role do these social factors play in excessive acquisition? Social values and specific social motivations could be elevated for people who hoard and compulsively buy, seeing as how these factors are important for normative acquiring. Also, the degree to which these social factors are present or absent may help differentiate between these two groups. Interestingly, hoarding behaviours are often stigmatized by others (Chasson, Guy, & Corrigan, 2018), while compulsive buying can involve a more positive social context. Many popular social media videos (e.g., YouTube) are devoted to
showing off influencers’ shopping hauls, which is often received positively from the public (Noll & Ferran, 2010). In contrast, very few videos feature people showing how their newly acquired things get added to piles of clutter in the home. Because hoarding is quite stigmatized, it could be more likely that acquiring in compulsive buying may be more socially motivated than in hoarding. Looking at excessive acquisition, both within hoarding and compulsive buying, through a social lens will add to etiological models of excessive acquisition and improve treatments for this behaviour. On the other hand, if social factors are important for acquiring in one group but less so for another, or social factors are weak predictors of excessive acquisition in either group, this is also essential to know, as this may provide clues as to where the normal process of acquiring goes awry, providing guidance on where to focus efforts for future research and interventions.

**Compulsive Buying**

Kraeplin, 1899 (as cited in Müller et al., 2021) originally defined compulsive buying as a pathological propensity toward buying, involving lack of control over one’s spending behaviour, accumulation of unpaid debts, and low insight into the negative consequences of the behaviour. Despite this acknowledgement of compulsive buying as a problem behaviour worthy of clinical attention, little work was directed toward the phenomenon at that time, and even now compulsive buying is not considered a discrete disorder. Nevertheless, compulsive buying has an estimated point prevalence rate of 5% in the general population (Maraz et al., 2016).

Academic and clinical attention for compulsive buying burgeoned in the early 1990s. During this period, three independent research groups published clinical case series about compulsive buying (Christenson et al., 1994; McElroy et al., 1994; Schlosser et al., 1994). Since
then, the compulsive buying literature has steadily grown, with numerous reviews (e.g., Aboujaoude, 2014; Black, 2007) and meta-analyses (e.g., Maraz et al., 2016) on the topic.

Experts on compulsive buying now define this behaviour as excessive preoccupation with buying and repeated episodes of buying that result in severe distress and impairment (McElroy et al., 1994). Importantly, buying would be considered problematic only if the behaviour is extreme and causes serious negative consequences, which is how most pathological behaviour is defined (American Psychiatric Association, 2013). If no serious consequences occur due to buying, within this work, this behaviour would not be considered compulsive or excessive buying, but rather just normative acquiring. Behaviours that characterize compulsive buying include buying material goods that are unneeded or beyond one’s budget, purchasing unnecessarily large quantities of goods, and spending more time than intended on buying objects (Müller et al., 2015). Some researchers have classified this excessive buying behaviour as compulsive, as they hold the perspective that this behaviour is an uncontrollable and repetitive urge, which alleviates stress and negative feelings (Edwards, 1993). Some consequences of these behaviours are strained family relationships, work impairment, and decreased quality of life (Christenson et al., 1994; McElroy et al., 1994; Zhang et al., 2017).

What drives compulsive buying behaviour? Multiple research groups have put forth theoretical frameworks as possible models for compulsive buying. Two models have received particular attention in the literature. The most popular model is based on social psychological principles (Dittmar, 2005), and the other is based on cognitive theory (Kyrios et al., 2004), both of which will be outlined below.

**Two-Factor Model for Compulsive Buying.** Dittmar’s (2004) two-factor model of compulsive buying has been instrumental in advancing research in this field. Rooted in social
psychology, this model asserts that compulsive buying can be conceptualized as identity-seeking behaviour via material goods, driven jointly by two factors. The first is self-discrepancy, or a mismatch between one’s ideal and actual self. An example of self-discrepancy that Dittmar provided in her original paper was that of a young man who feels that he falls short of his masculinity ideals. The second factor is materialism, with the notion that acquiring material goods can bring one’s actual self closer to one’s ideal self. Materialism is a social value that emphasizes the centrality of material goods to one’s life, the necessity of possessions for achieving happiness, and the importance of objects as signals of success (Richins & Dawson, 1992). This conceptualization of materialism implies that acquiring has a social element, given that objects are believed to signal success to oneself and others. Thus, in Dittmar’s view, compulsive buying can be seen as attempts to achieve an “ideal self” through acquiring objects.

Studies that focus on materialism far outweigh those that investigate other constructs relevant to compulsive buying, such as self-discrepancy (Moulding et al., 2017). Many past studies have found significant correlations between self-reported compulsive buying and materialistic values (Moulding et al., 2017). Some studies have also found that materialism is still significantly correlated with compulsive buying when taking into account other factors, such as financial attitudes and financial management practices (e.g., Pham et al., 2012). In contrast, some studies found other correlates that seemed to be more strongly related to compulsive buying than materialism. For example, in a compulsive buying treatment seeking sample, Müller and colleagues (2014) found that materialism was correlated with compulsive buying, but this correlation was no longer significant when taking into account age, gender, enthusiasm for and approach tendencies toward potentially rewarding outcomes, and depression. Thus, materialism seems to be a consistent correlate of compulsive buying, but the strength of this relation is still
questionable, especially when other correlates are accounted for. Few studies have looked into self-discrepancy in relation with compulsive buying, and all are from Dittmar and colleagues (Dittmar, Beattie, & Friese, 1996; Dittmar, 2005; Dittmar et al., 2007). Given these limitations, no firm conclusions can be drawn yet in terms of self-discrepancy being a driver for compulsive buying.

Cognitive Model for Compulsive Buying. An alternative model for compulsive buying is rooted in cognitive theory. Kyrios and colleagues (2004) proposed that a combination of depressed mood, perfectionism, and dysfunctional beliefs about buying drive excessive purchasing. Specifically, four core beliefs are essential to their model: 1) buying objects is an effective emotion regulation strategy; 2) emotional attachments will form and emotional security will be attained through buying objects; 3) items are unique, so not buying an item is a lost opportunity; and 4) one must maintain sole control over what he or she buys and others have no right to advise on purchasing decisions. Notably, Kyrios and colleagues also acknowledged that some aspects of materialism may be important to acquiring (i.e., they noted the core beliefs above touch on materialism), but they would not go so far as to say people who compulsively buy show extreme endorsements of this social value (Moulding et al., 2017). Importantly, only one of the four core beliefs involves much of a social element (that others have no right to control or advise purchasing decisions).

Though this cognitive theory for compulsive buying is often the basis for CBT for compulsive buying (Hague et al., 2016), it has been the focus of few empirical studies. In a sample of 189 participants, the strength of the self-reported four beliefs were good discriminators between high and low scorers of a compulsive buying measure (\(d = 0.97\) to \(1.88\); Kyrios et al., 2004). In the same study, when any of the four beliefs was made more salient through priming,
compulsive buying participants had stronger urges to purchase than those in the control group. A decade later, McQueen, Moulding, and Kyrios (2014) conducted an experiment that included a small sample of participants \((n = 18)\) who self-identified as compulsive shoppers or shopping addicts, or endorsed the statement that they were “currently experiencing problems due to excessive buying”, and received high scores on a compulsive buying measure. Control participants \((n = 18)\) were also included who did not meet the criteria above. Participants were presented with images of a hypothetical shopping trip. Participants also read vignettes about shopping and having limited money, which were designed to maximize or minimize the relevance of the four core beliefs from the cognitive theory of compulsive buying (Kyrios et al., 2004). The compulsive buying group had stronger urges to buy than those in the control group, with financial constraints mattering less to the compulsive buying group. Also, these urges were stronger when the core beliefs were maximized for the compulsive buying group. The four core beliefs in this cognitive theory have been supported by two empirical studies, but conclusions are somewhat limited due to the small number of studies and the fact that both studies came from the same research group.

The two compulsive buying models discussed above differ on why people compulsively buy, but they both have some support, although more must be done to test these theories. One important difference between the two theories is that social factors are central to Dittmar’s two-factor theory (2004) and nearly absent from the Kyrios et al. cognitive theory (2004). Dittmar strongly believes materialism, is a driver for compulsive buying, whereas Kyrios does not necessarily agree. Moreover, Dittmar’s two-factor theory includes self-discrepancy, which can often involve desires to belong to specific groups or impressing certain people. Therefore, testing
different social factors and how they relate to compulsive buying could help support or refute each of these two theories presented.

**Acquisition Behaviour in Hoarding Disorder and Compulsive Buying**

Some aspects of excessive acquisition look quite similar in the context of compulsive buying and hoarding. As discussed, both groups acquire problematic amounts of stuff, often resulting in financial strain (Christenson et al., 1994) and experience interpersonal conflict with loved ones (Frost et al., 2000; Samuels et al., 2008). Both groups also share similar maladaptive beliefs about objects, which were discussed earlier (i.e., either buying or saving objects is important for emotional attachments, avoiding lost opportunities, and maintaining control; Kyrios et al., 2004, Steketee et al., 2003).

Research on acquiring behaviour in hoarding and compulsive buying is surprisingly limited. A clinical sample of 46 compulsive buyers indicated their most commonly purchased items were clothes (72%), shoes (16%), audio recordings (16%), and jewellery (26%), though a wide variety of other items was also described, including electronics, art, antiques, and makeup (Schlosser et al., 1994). Turning to hoarding, little information is known about what this group acquires, but the most frequently hoarded items are newspapers and magazines, junk mail, clothing, notes or lists, and receipts (Williams, 2012). Most people who have problems with compulsive buying also acquire free items, a finding that is also true for those who struggle with hoarding symptoms (Frost et al., 2009). Many of the acquired items (for both compulsive buying and hoarding) ultimately go unused (Frost & Hartl, 1996; Müller et al., 2015). Within hoarding, objects overcrowd the home, whereas the fate of where purchased items end up for people who compulsively buy is not well documented. Some knowledge gaps that still remain are to further understand acquiring in hoarding, what happens to the acquired stuff within compulsive buying,
and how the acquiring process compares between compulsive buying and hoarding (e.g., frequency of acquiring episodes, motives for acquiring).

**Materialism**

Materialism is a social value that emphasizes the importance of material goods to reach desired goals and mood states (Richins & Dawson, 1992). Indeed, materialistic values have been seen as a way for people to extend their identities through their belongings (Belk, 1984). Richins and Dawson have articulated three important components in materialism. The first is *centrality*, which refers to material goods being essential and much of life revolving around these belongings. The second facet is the number and quality of objects as a signal of *success*. The third facet is the idea that owning objects represents a pathway to achieving *happiness*.

Materialism has garnered interest from many academic fields, including economics, psychology, and business research. The Dittmar and colleagues (2014) meta-analysis on the relation between materialism and well-being included 753 effect sizes from 259 independent samples. These authors examined four categories of well-being: subjective well-being, positive and negative self-appraisals, DSM-IV Axis I disorders, and health and physical risk. Of these categories, materialism was most strongly related to negative self-appraisals, defined as dissatisfaction with oneself. Materialism is positively associated with the values of hedonism (i.e., highly focus on pleasure and gratification) and power (i.e., wanting control or dominance over people and resources) and negatively associated with conformity and benevolence values (Burroughs & Rindfleisch, 2002).

Some theorists have asserted that values influence behaviour because people are naturally encouraged and motivated to act in line with their values (Rohan, 2000; Rokeach, 1973). According to Rohan (2003), values are implicit principles that build from past experiences.
These values guide people toward their best possible ways of living. In other words, values specify to an individual what kind of beliefs he or she will be most drawn to, how he or she “should” or “ought” to behave, and which “end states” are more desirable than others (Meglino & Ravlin, 1998). Marketing companies have also taken notice of the idea that personal values act as guiding principles for people (Lowe & Corkindale, 1998), and, depending on how they are prioritized, values can weigh heavily into consumer decisions. Research has established a clear link between values and consumer behaviour. Energy conservation (Neuman, 1986), ethical consumption (Shaw et al., 2005), leisure travel (Madrigal, 1995), and fair-trade consumption (De Pelsmacker et al., 2005; Doran, 2009) have all been consistently correlated to specific personal values.

Materialism and an excess of material goods would seem to go hand-in-hand, but the research on this relation has yielded inconsistent results, with some studies showing fairly weak relations and others showing strong correlations. The correlation between self-reported materialism and compulsive buying has been investigated in samples of adolescents (Islam et al., 2017; Manolis & Roberts, 2012), undergraduates (Moschis et al., 2013; Müller et al., 2011), and clients receiving treatment for compulsive buying (Müller et al., 2013). The strength of the relation between materialism and compulsive buying is unclear due to differences between studies. For example, in one study of 370 undergraduates, self-reported materialism and compulsive buying symptoms were only weakly related ($r = .13$; Wang et al., 2012), but Ku (2009) found a much stronger correlation ($r = .70$) in a study of 97 undergraduates.

Evaluating how strongly materialism and compulsive buying are related via meta-analytic methods will be one of the goals of this dissertation. Having a clear estimate of the strength of this relation will serve as a benchmark against which to compare different populations (i.e.,
compulsive buying symptom, hoarding symptom, and healthy acquiring groups) and will set the stage for identifying moderators that may represent vulnerability factors or pinpoint potential intervention targets.

Materialism has rarely been studied in relation to hoarding. In two nonclinical samples (one undergraduate and one community adults), correlations between the SI-R and materialistic values ranged from $r = .25$ to $r = .46$ (Claes et al., 2016; Frost et al., 2007). Hoarding symptoms were only weakly associated with the three facets of materialism in another nonclinical sample (centrality $r = .13$, success $r = .16$, happiness $r = .25$; Shoham et al., 2017). The degree to which materialism may be linked to excessive acquisition behaviour in hoarding versus compulsive buying is not known. This information will be helpful in identifying vulnerability factors and developing treatment for excessive acquisition.

**Social Motivations**

Given that social processes seem important for acquiring decisions, understanding how social motivations may impact excessive acquisition seems like the next logical step. Two social motivations may be especially relevant to excessive acquisition – affiliation and status-seeking. Motivation for affiliation describes an eagerness to please others and tendency to avoid actions that could lead to exclusion from desired groups (Neel et al., 2016). Unsurprisingly, affiliation motivations lead to approval-seeking behaviours, which are carried out with the aim of impressing and being liked by others. Status seeking, on the other hand, can be defined as a drive to continuously enhance one’s social status (Kim & Pettit, 2009), with the aim of achieving influence and commanding respect from other people (Anderson et al., 2001). This section will review the literature on social motivations, identify which social motives may be most relevant
to acquiring, and then discuss how social motivations may be an important consideration when understanding excessive acquisition.

Human motivational systems serve important functions from an evolutionary perspective. These systems help humans deal with distinct problems and regulate behaviour in interactions with other people and the surrounding environment (Schaller et al., 2017). Many researchers hold the perspective that motives drive human behaviour and have been naturally selected during human evolution to manage recurrent threats and enhance reproductive fitness (Cook et al., 2021; Neel et al., 2017; Schaller et al., 2017). Thus, the motivational systems that exist today are believed to have been refined over the history of human existence to enhance the likelihood that humans typically feel and behave in beneficial ways when encountering certain environments and stimuli.

The fundamental-motives framework outlines primary human social motives (Kenrick, Griskevicius, & Schaller, 2010). Based in this framework, Neel and colleagues (2016) created the Fundamental Social Motives Inventory, which assesses 11 social motives. These social motives are self-protection (e.g., “I think a lot about how to stay safe from dangerous people), disease avoidance (e.g., “I avoid places and people that might carry diseases), affiliation (group) (e.g., “Being part of a group is important to me”), affiliation (independence) (e.g., “Having time alone is extremely important to me”), affiliation (exclusion concern) (e.g., “I worry about being rejected”), status-seeking (e.g., “I want to be in a position of leadership”), mate seeking (e.g., “I spend a lot of time thinking about ways to meet possible dating partners”), mate retention (general) (e.g., “It is important to me that my partner is emotionally loyal to me”), mate retention (breakup concern) (e.g., “I worry about others stealing my romantic/sexual partner”), kin care
(family) (e.g., “Caring for family members is important to me”), and kin care (children) (e.g., “I like to spend time with my children”).

The affiliation (specifically, wanting to be part of a group and concerns about being socially excluded) and status-seeking motives may be particularly relevant to acquiring behaviour. The group affiliation motive is essential for integrating oneself into a social group, as being ousted from a group can have serious negative consequences (i.e., limited access to resources, loneliness). Regarding status seeking, being a high-status group member confers many benefits, including respect, admiration, and voluntary deference from others. Indeed, Smith and Jordan (2015) found that experimentally-induced threats to affiliation and status motives caused emotional distress (anxiety and shame) and elevated physiological arousal (blood pressure and heart rate) in undergraduates. This type of social distress may motivate people to try to soothe themselves through various methods, including acquiring goods.

People often look to the opinion of others when deciding which items to buy. Day (1977) proposed that the satisfaction one feels about possessions can be influenced by how much approval or disapproval the items elicit from others. Approval seeking was a significant predictor of purchasing behaviour in one study of which brands participants had recently bought and at what cost (Auty & Elliott, 2001). Additionally, Lau-Gesk and Drolet (2008) found that being aware of the impression one is conveying to others and being fearful of negative evaluation (which could result in social exclusion or rejection) predicted stronger desire to purchase embarrassing products (e.g., related to flatulence) after watching advertisements that claimed the items can help prevent future embarrassment (e.g., flatulence prevention product). Using social information to sell products has also become common in western countries. Employing popular social media influencers to promote products has resulted in significant increases to consumer
demand and purchases for products (Loureiro et al., 2017). In a large sample of Amazon Mechanical Turk adult respondents, participants who were presented with “popular deals” (i.e., deals that many others have ostensibly already purchased) responded more positively in terms of their “deal attractiveness” ratings than those exposed to deals that were not portrayed as “popular”. These findings suggest that the affiliation (group) and affiliation (exclusion concern) motivations play an important role in decisions about what items to buy.

The third social motivation that may be relevant to acquiring is status-seeking. One pathway to achieving status is through showing high skill levels on tasks, which can gain the respect of other group members (Cheng, Tracy, & Henrich, 2010). Cheng and Tracy (2010) have opined that clothing, houses, cars, and other possessions signal a person’s degree of skill or success, especially in circumstances in which it is difficult to directly observe skill. The Cubeo, a small indigenous group living in the Amazon, often wear necklaces made from jaguar teeth, which signals their skill levels and brings them high status as good hunters (Goldman, 1979).

Similarly, Plourde (2008) argued that evolutionarily speaking, acquiring “prestige goods”, which are items that signal status, came into existence as a proxy to help others quickly identify who is likely to have skill and expertise. Plourde theorizes that material goods indicate the quality of a person’s skills or spheres of knowledge. Being able to ascertain skills and expertise of others quickly can be valuable. Knowing who to entrust with urgent tasks can impact both group survival and who will be considered individuals to respect and look to for future emergencies.

Sivanathan and Pettit (2010) asserted that people who feel unsatisfied with their status may turn to high-status goods to alleviate their discomfort, testing this hypothesis in a large undergraduate sample. Participants who received negative feedback on their task performance (i.e., described as being in the 10th percentile) were subsequently willing to pay higher prices for
high-status goods than participants who received no feedback or self-affirming feedback (i.e., 90th percentile). Thus, sometimes acquiring the “right” stuff may be enough to signal that someone is skillful and elevate a person to a high status without needing to demonstrate skills.

Dittmar’s (2004) two-factor model hints that social motivations play an important part in compulsive buying. Self-discrepancy, like Dittmar’s example of a young man who feels he is not masculine enough, would include unfulfilled social motivations such as desire for status or affiliation (truly belonging to a desired ideal group). Dittmar (2004) asserted that acquisition reflects identity-seeking, but acquiring can go overboard if the behaviour is motivated by persistent self-discrepancy.

One critique of Dittmar’s (2004) model is that self-discrepancy might be an overly broad construct that is difficult to measure; exploring narrower conceptually-related concepts, like specific social motivations, is a good way to move this research forward. Research on self-discrepancy in compulsive buying has been limited, partially because of complicated approaches to measure this construct. Dittmar evaluated self-discrepancy by asking respondents to list things about themselves they would like to change and then to rate the importance and magnitude of each self-discrepancy statement, resulting in a self-discrepancy score for each participant. Although no reliability or validity data were provided for this measure, Dittmar (2005) found that participants with high compulsive buying behaviours had higher self-discrepancy scores than the control group. Dittmar and colleagues (2007) replicated these findings in a separate study using an identical methodology. To the best of my knowledge, no other research groups have followed this complicated method of investigating self-discrepancy in compulsive buying. Narrower concepts, such as affiliation and status-seeking motives, could help with understanding compulsive buying in a social context. The social motives of affiliation and status-seeking are
well-established and have been linked to acquisition. These constructs have also been researched in other domains (e.g., consumerism literature, other psychopathologies) aside from excessive acquisition, with multiple high-quality options available for assessing these social motives. However, to date, these social motivations have not been rigorously examined within the excessive acquisition literature.

Past research provides preliminary clues that the first social motivation of interest, affiliation, may play a role in compulsive buying, though no studies have directly examined relations between affiliation and compulsive buying. One related concept to affiliation that has been looked at in the compulsive buying literature is public self-consciousness. Public self-consciousness refers to being aware of the impression one is conveying and seeking approval from others (Doherty & Schlenker, 1991). Using SEM techniques with an undergraduate sample, Xu (2007) found that public self-consciousness was a significant predictor of compulsive buying symptoms after accounting for materialism ($B = .26$).

Other studies have also looked at concepts related to affiliation in the context of compulsive buying, but many of these studies use compulsive buying measures that do not include items about negative consequences of excessive purchasing. Such measures are problematic, as behaviour is considered pathological only when it is extreme and causes negative emotional or functional consequences (American Psychiatric Association, 2013). An example used in several studies is the Richmond Compulsive Buying Scale (Ridgeway, 2004), which includes no items related to consequences of purchasing. This operationalization of compulsive buying is inconsistent with psychological definitions of pathological behaviour (which is typically extreme in nature and causes negative consequences), rendering the results of studies that looked at affiliation-related concepts using this measure less relevant for the study of
compulsive buying (e.g., Harnish & Bridges, 2015; Kukar-Kinney et al., 2016, Nga et al., 2011). Therefore, how well these results can speak to compulsive buying rather than normative buying is unclear. Thus, past studies provide preliminary clues that affiliation (i.e., wanting to be part of a group and concerns about exclusion) and compulsive buying may be related, but this has yet to be directly tested with these motives specifically and with good-quality measures of compulsive buying.

Within compulsive buying, some preliminary data hints at the possibility that buying decisions are influenced by the promise of being perceived as achieving high status, which is aligns with the second social motive of interest, status-seeking. A few qualitative studies (e.g., Christenson et al., 1994; Dittmar, 2005; Faber & O'Guinn, 1992; O'Guinn & Faber, 1989) revealed that people with compulsive buying symptoms often mention “improving social status” as a motivator for purchasing. In Elliott’s (1994) study, self-identified “addictive buyers” tended to endorse the belief that purchasing particular goods (e.g., clothing) would confer social status. Dittmar (2004) also found participants with compulsive buying symptoms endorsed “improving social status” as a motivation for buying. In a regression model, Dittmar found that perceived identity gains (e.g., “I like to buy things that impress other people”) was a unique predictor ($B = .22$) of compulsive online buying. Furthermore, Ertelt and colleagues (2011) identified prestige as an important psychological process underlying excessive acquisition in their model of compulsive buying. Taken together, these studies suggest that people who struggle with compulsive-buying acknowledge that their acquiring is related to status-seeking motives.

How do the affiliation and status-seeking motivations relate to excessive acquisition in another group - those who struggle with hoarding? To date, no studies have examined the degree to which affiliation and status-seeking relate to excessive acquiring in hoarding. In fact, to date,
excessive acquisition has generally received much less research attention compared to other symptoms of hoarding, such as difficulty discarding. This omission is surprising, given that addressing excessive acquisition problems is recommended as the first priority in hoarding treatment. Perhaps motives for excessive acquisition in hoarding are similar to those in compulsive buying, where the literature provides numerous examples of social factors that are relevant to acquiring decisions. If this is the case, then excessive acquiring research in hoarding will have a much-needed head start if some of the work already done with compulsive buying also applies to hoarding. However, if motivations for excessive acquisition differ between these two clinical groups, then a deeper understanding of excessive acquisition will be possible, as researchers can try to identify what makes these populations distinct, how the development and maintenance of excessive acquisition can stem from different pathways, and how to treat this problem in specific contexts.

Based on my interpretation of the literature, I propose that unfulfilled social motivations or high levels of materialism are vulnerability factors for not just acquisition, but for excessive acquisition. The experience of unfulfilled social motivations is an uncomfortable state. Highly materialistic people consider objects to be pathways to reaching happiness and success. Therefore, if someone has activated social motivations or considers objects to be the key to achieving desired goals and emotional states (i.e., materialism), then acquiring objects may be one way reach their social goals and feel better about themselves. However, excessive acquiring comes into the picture when the behaviour meant to satisfy social motivations provides only temporary relief and may even maintain feelings of unfulfillment in the long-term.

Some studies provide support for the materialism aspects of the model presented above. Participants who strongly endorse materialism values tend to be dissatisfied with their purchases
in the long-term, especially items that signal status to others compared to people with lower materialistic values (Wang & Wallendorf, 2006). Moreover, the Dittmar (2014) meta-analysis demonstrated that materialism is related to low satisfaction with oneself ($r = .28$). These two papers suggest materialism and desire to impress other people with purchased goods could paradoxically lead to dissatisfaction with both the purchased items and the self. Taken together, unfulfilled social motivations and materialistic values would seem to confer vulnerability to excessive acquisition, but this has not been established empirically. I plan to start filling this gap by examining the relation of possible vulnerability factors, materialism and social motivations, to excessive acquisition in the context of compulsively buying symptoms, hoarding symptoms, and healthy acquisition.

**Current Research**

This research had two main aims. First, I evaluated how strongly materialism is related to excessive acquisition. Second, I explored how excessive acquisition compares in hoarding and compulsive buying in terms of social motives and materialism. Materialism has long been considered a cornerstone for compulsive buying, but it is important to confirm how much this notion is justified and if materialism has a place in hoarding, too. Investigating moderators for the relation between materialism and excessive acquisition could also help identify malleable aspects of this connection and provide guidance for treatment approaches. Social motivations have also been considered important for acquiring decisions, but the role they play within excessive acquisition is still unclear. If acquiring processes are similar between hoarding and compulsive buying groups, then bringing both research streams together would reduce redundancy in future work on excessive acquisition. However, if acquiring processes differ between hoarding and compulsive buying, then understanding those differences would be useful in generating models for excessive acquisition and designing interventions.
This dissertation will explore both materialism and social motivations within excessive acquisition. Chapter 2 will use meta-analysis to quantify the strength of the relation between materialism and compulsive buying, test moderators of this relationship, and provide effect size estimates for the relation between materialism and hoarding. Chapter 3 will study materialism and social motivations and how they relate to excessive acquisition. Specifically, I will compare how well materialism correlates with excessive acquisition among samples of participants with compulsive buying symptoms, hoarding symptoms, and healthy acquiring behaviour. I will also investigate if people who excessively acquire endorse higher levels of materialism and social motivations than people who do not excessively acquire and test whether social motivations and materialism differentiate excessive acquirers who do and do not hoard objects. Last, I will see how well social motivations predict excessive acquisition when accounting for materialism.
Chapter 2: Materialism and Compulsive Buying: A Meta-analysis

Compulsive buying is characterized by strong and persistent urges to buy material goods and buying beyond both one’s needs and monetary limits (Faber & O'Guinn, 1992; McElroy et al., 1994). These behaviours result in problems such as severe financial consequences (e.g., bankruptcy) and marital conflict (Christenson et al., 1994; Faber & O'Guinn, 1992; McElroy et al., 1994). Why would someone continue to buy stuff even after experiencing these negative consequences? As discussed in the previous chapter, one factor that might play an important role is materialism. Materialism is a value in which material goods is seen as the path to happiness, success, and positive self-worth. To what degree does materialism form a cornerstone for compulsive buying? A meta-analytic approach will be taken to quantify the strength of the relation between materialism and compulsive buying.

To better understand vulnerability factors for compulsive buying behaviours, materialism can provide rich insights. As discussed previously, objects are important focal points for the lives of both highly materialistic individuals and those struggling with compulsive buying. Dittmar (2004) was one of the first researchers to suggest a link between the social value of materialism and compulsive buying. Other research groups soon began testing Dittmar’s ideas using measures of materialism (e.g., Material Value Scale, Richins & Dawson, 1992; Youth Materialism Scale, Goldberg et al., 2003) and compulsive buying (e.g., Compulsive Buying Scale, Faber & O'Guinn, 1992; Richmond Compulsive Buying Index, Ridgway et al., 2008) across cultural contexts (Ku et al., 2018; Müller et al., 2011).

Materialistic values emphasize that material goods are central to one’s life, material goods enhance the self, and objects reflect success (Richins & Dawson, 1992). Thus, people who are highly materialistic see possessions as a way to enhance their own well-being (Burroughs &
Rindfleisch, 2002). However, materialism is negatively correlated with satisfaction in many areas, including income ($r = -0.39$) and number of friends ($r = -0.31$), and it is positively correlated with envy ($r = 0.47$; Richins & Dawson, 1992).

Numerous philosophers and religions have historically condemned extreme materialism and suggested that focusing one’s life around material goods undermines quality of life (see review, Belk, 1983). For example, within Buddhism, salvation can be found by rejecting the material world and focusing on oneself inwardly. Similarly, within Christianity, the overconsumption and pursuit of material goods is captured within the *seven deadly sins* under the broader concept of *greed*.

In contrast, some theorists have asserted that materialism has advantages, especially in a capitalist system. Because materialistic people typically engage in high consumption, these individuals may be motivated to work increased hours, resulting in high incomes and high living standards (Kasser et al., 2007). An alternative perspective is also that people who are highly materialistic are more likely to consume products, which produces demand and fuels job growth. Both of these lines of thought have the same consequence - high levels of consumption can increase a country’s gross domestic product (GDP), which is often seen as an indicator of economic health (Layard, 2006). Indeed, materialism has implications for numerous academic fields, including business (Wang & Wallendorf, 2006), economics (Ridgway et al., 2008), and psychology (Müller et al., 2011).

Both materialism and compulsive buying appear to be steadily increasing over the last decades. One study reviewed materialism trends over the years, and found that in the USA, materialistic values rose from 1981-1999 (Bartolini & Sarracino, 2017). Furthermore, some researchers partially attribute a rise in psychopathology over 1938-2007 to increased extrinsic
goals, such as materialism (e.g., Twenge et al., 2010). Similarly, compulsive buying behaviours have been demonstrated to be on the rise as well (Maraz & Yi, 2022; Neuner et al., 2005). The surge of online shopping, same-day delivery, and constant stream of advertisements likely plays a part in fuelling excessive acquiring. Whether this rise in both compulsive buying and materialism is connected or coincidental is still under question. To date, outcomes of interventions to help people decrease their compulsive buying behaviours have been modest (see review Hague et al., 2016). Shining a light on possible vulnerability factors for compulsive buying, like materialism, is an important step to improve the well-being of those struggling with these buying behaviours.

The current meta-analysis primarily aims to provide an accurate estimate of how strongly materialism and compulsive buying are related. To date, two studies published in English have included partial meta-analyses on compulsive buying and materialism. Though Dittmar et al. (2014) primarily investigated the relation between materialism and personal well-being, they included some articles on compulsive buying behaviours. Based on 30 articles, Dittmar et al. calculated an estimated pooled effect size of the relation between compulsive buying and materialism as $r = .43$, 95% CI [.39, .48]. Another research group attempted to identify antecedents and consequences of materialism (de Olivieri Santini et al., 2017). Secondary to their goal, de Oliveira Santini et al. calculated a pooled effect size from 17 studies and found a mean correlation of $r = .38$, which is likely similar to Dittmar et al.’s findings.

Another goal of this meta-analysis is to explore moderators of the relation between materialism and compulsive buying, which could be helpful when designing and implementing targeted interventions. Looking to the two partial meta-analyses described previously, Dittmar et al. (2014) did not examine moderators for materialism and compulsive buying. On the other
hand, de Oliviera Santini et al. (2017) ruled out five possible moderators: student vs. non-student sample, data collected in the laboratory vs. in the field, Eastern vs. Western country, and sample size. Other moderators are certainly worthy of investigation, which will be outlined below.

Whether one grows wiser with age in relation to materialism and compulsive buying is still under question and could be an important moderator to consider. Materialism seems to change throughout the lifespan. In a longitudinal study, Kasser et al. (2014) collected materialism self-reports from 118 participants at the age of 18 years and again at 30 years old. The findings suggested that materialistic values decreased over time ($d = -0.66$). Jaspers and Pieters (2016) conducted a meta-analysis of 23 cross-sectional studies and found a modest negative correlation between age (15 to 90 years) and materialism, $r = -0.16$; 95% CI [-0.14, -0.18]. In the same publication, Jaspers and Pieters reported on a large longitudinal study that spanned 9 years with participants aged 16 to 90 years. Using a latent growth model, their findings suggested that materialism was lowest during middle age and higher before and after this time period. Furthermore, in most compulsive buying studies, participants’ age ranges from 18 to the late 30s (e.g., Ching et al., 2016; Claes et al., 2016; Donnelly et al., 2013). Given that materialism seems to vary with age and that compulsive buying samples tend to include young to middle-aged adults, perhaps the relation between materialism and compulsive buying is weaker at certain age periods.

Gender has been a contentious factor when trying to understand both materialism and compulsive buying, especially when making recruitment decisions for research. Numerous studies have included women-only samples with the justification that compulsive buying is more prevalent and severe in women than men (Harnish & Bridges, 2015). Black (2007), on the other hand, pointed out that women are more likely to volunteer for research and women tend to be
more open to acknowledging that they enjoy and engage in shopping compared to men. This raises questions of whether purposely using women-only samples for compulsive buying studies is justified, whether important information is being missed by this practice, and whether gender moderates any relations between compulsive buying and other correlates like materialism.

Three studies have reported no significant differences between men and women on compulsive buying symptoms. In a mixed sample of participants in a self-help organization for compulsive buying \((n = 136)\) and community-matched controls \((n = 194)\), compulsive buying symptoms did not differ among participants who identified as women or men \((B = 0.14;\) Dittmar, 2005). In a large undergraduate sample, Ching et al. (2016) found that women \((n = 373)\) and men \((n = 232)\) were not significantly different in their compulsive buying symptoms \((d = 0.22)\). One study also recently assessed gender differences in compulsive buying and found that clinical samples of men and women did not differ in compulsive buying severity \((d = 0.21;\) Nicoli de Mattos et al., 2016), though the number of women who participated \((n = 151)\) greatly outweighed the number of men who participated \((n = 20)\). Notably, all three studies showed no significant differences between men and women on compulsive buying, suggesting that this well-accepted “gender difference” may not be a strong justification for recruiting women-only samples for compulsive buying studies. Moreover, most studies of materialism are also majority-women samples, also making it difficult to identify any gender differences in materialism across genders. Taken together, the extent to which gender moderates the link between materialism and compulsive buying is not yet clear but could be important for study recruitment decisions and tailoring treatments.

To date, knowledge is lacking about how materialism may relate to the development of compulsive buying symptoms. If the relation between materialism and compulsive buying is
stronger among participants with a diagnosis or symptoms of compulsive buying, then this would suggest the possibility of materialism as a maintaining factor for compulsive buying. However, if the connection between materialism and compulsive buying is stronger in unscreened samples, then this would suggest that materialism could be important during the early stages of compulsive buying, but not necessarily for maintenance of the problem.

With massive changes in the past few decades toward creating convenient shopping environments and sophisticated advertisement strategies, publication year may also moderate the association between materialism and compulsive buying. Researchers have been reporting a relation between materialism and compulsive buying since the early 1990s. The ensuing decades have seen substantial changes in how people interact and make purchases, which might have important implications for materialism and compulsive buying. Advertising strategies have also been refined and improved over time, as online browsing patterns are tracked to facilitate targeted advertisements. Online shopping has changed the landscape of acquiring, too, as people can buy items at any time relatively hassle-free. Furthermore, social media offers new and popular ways for people to show off their material goods and admire other people’s belongings. Therefore, publication year is an important moderator to examine, as advertising strategies and online shopping has made it easier than ever to indulge in excessive acquisition and embrace materialistic values.

The normative consumer spending habits of a given country may also encourage or discourage materialism and buying behaviour. Consumer spending is an index of the amount that individuals and families spend acquiring goods and services to satisfy their needs and wants (World Bank, 2010). Examples of consumer spending include food, clothing, and vehicles. In countries with high levels of consumer spending, people are generally buying beyond their basic
needs, which would logically create an accepting environment for materialism and excessive acquisition. High consumer spending also creates more demand for products, increasing the availability and variety of items available for purchase. Taken together, the relation between materialism and compulsive buying may be stronger in high consumer-spending countries.

**Current Study**

The meta-analysis for this dissertation will address limitations from the previous partial meta-analyses. Previous meta-analyses did not apply a comprehensive and replicable literature search for materialism and compulsive buying. This meta-analysis will include a thorough and replicable systematic search for relevant articles and will cast a wider net than the two previous studies. A moderator analysis will also be completed to evaluate the role of age, gender, symptom pre-screening (compulsive buying symptoms vs. unselected samples), publication year, and consumer spending level for the country in which the data collection occurred. This meta-analysis will also separately analyze effect sizes for studies that used the most well-established measures of materialism and compulsive buying, including problematic consequences to acquiring.

**Method**

**Literature Search and Inclusion Criteria**

A systematic search for empirical papers and reports that describe associations between materialism and compulsive buying was completed for papers up until December 14, 2023. The databases selected for this search were PsycInfo (which includes PsycArticles and PsycBooks), Medline (OVID), Web of Science, OAIster, and PsycExtra. The reference sections of collected articles were also searched to identify additional relevant articles. Some of the databases target unpublished findings. Specifically, the OAIster database includes over 30 million open-access digital resources for over 1,500 international institutions and is a rich resource for dissertations.
For grey literature, the PsycExtra database was an important resource. I also contacted authors who are well published in the topics of materialism and compulsive buying to request that they provide any unpublished work that would be relevant to this meta-analysis.

The search terms included “Materialis* OR Consumerism” paired with different variations of the term “compulsive buying”. These variations included “buying” within five words of the following terms: “pathological or disorder or compulsive”; “shopping” within five words of the following terms: “pathological or disorder or compulsive or addiction”; and “spending” within five words of the following terms: “problem or excessive”. The term “consumerism” was included because this word has commonly been used for searches on materialism.

Because of the simplicity of the research question (i.e., What is the magnitude of the relation between materialism and compulsive buying?), studies were included as long as they reported data on these two constructs and provided enough information to retrieve or calculate a Pearson correlation coefficient. This meta-analysis also included studies that were written in any language, provided the paper could be translated to English. Both treatment-seeking and unselected samples were included in this meta-analysis, as the majority of research has been done on nonclinical samples. Please see Figure 1 for additional details on the study selection process.

Data Synthesis

For data extraction, two researchers independently completed the data harvesting and data entry protocol. These researchers scoured the articles that were included in the initial pre-screening stages of the literature search. They extracted the following data: article authors, sample screening method, publication year, number of participants included in the Pearson r
coefficient calculations, which compulsive buying and materialism measures were used in the study, Cronbach’s alpha coefficients for the two measures, the Pearson r coefficients for materialism and compulsive buying, proportion of women per sample, mean sample age, country in which data were collected, and publication type (e.g., journal article, dissertation, conference proceeding). Any discrepancies in data entry between the two independent researchers were resolved via discussion and consensus.

Data Analysis

Pearson r coefficients were used as an indicator of effect size. When this effect size could not be extracted from a study directly, the effect size was calculated based on the information available. Confidence intervals were also calculated around the effect sizes. Moreover, each correlation was corrected individually prior to analysis using measure reliability data, as recommended by Schmidt & Hunter (1990). For the correction in this meta-analysis, Cronbach’s alpha was used for each compulsive buying and materialism measure reported for the specific sample. If this information was unavailable, Cronbach’s alpha coefficients were taken from the original psychometric article that introduced the measure.

The basic meta-analysis was conducted using a combination of SPSS 28 and R. Though SPSS is not usually ideal for meta-analyses, Field and Gillett (2010) have written SPSS syntax specifically to overcome these issues. They also provide R code where no SPSS code exists for certain aspects of the analysis.
Study Selection Process

Records identified through database searching
\( n = 476 \)

Additional records identified through other sources
\( n = 29 \)

Records after duplicates removed
\( n = 313 \)

Records screened
\( n = 313 \)

Records excluded because abstracts were not relevant to meta-analysis
\( n = 204 \)

Full-text articles assessed for eligibility
\( n = 109 \)

Full-text articles excluded because not enough data to calculate a Pearson correlation coefficient or no original data presented
\( n = 40 \)

Studies included in quantitative synthesis (meta-analysis)
\( n = 69 \)
A random-effects approach was chosen because the samples were somewhat heterogenous and the research question intends to generalize beyond the present samples. Furthermore, applying a fixed-effects model when a random-effects model is more appropriate can result in wildly inflated Type I error rates (Fields, 2005). On the other hand, applying a random-effects model to fixed-effect data has comparatively minor consequences (i.e., slight conservative bias). The specific random-effects approach used was the Hedges-Vevea method, which is recommended for meta-analyses of more than 20 samples (Fields, 2005). Random effects approaches were planned for all moderator analyses, except for publication year, which used a fixed-effects approach because the results are not expected to generalize to future years of publication. When possible, weighted regression analyses assessed the impact of moderator variables on effect sizes.

Last, risk-of-bias analyses were conducted to estimate the influence of publication bias on the meta-analysis. The fail-safe $n$ was calculated as an indicator of the number of unpublished null findings that would need to exist to negate a conclusion that the effect size is significantly larger than zero. A funnel plot of the individual effect sizes was also examined, as asymmetry on this plot indicates possible biases in the effect sizes included in the meta-analysis. Sensitivity to bias analyses were conducted to correct for moderate to extreme publication biases.

**Results**

**All Available Samples**

As seen in Table 1, 69 papers involving 89 independent samples were included in the initial analysis. Of the 89 samples, 84 were from journal articles, 3 from theses, and 2 from conference proceedings. The sample sizes ranged from 31 to 1,329 ($M = 396.70$, $SD = 313.28$). Only two of these samples involved participants that were selected for high levels of compulsive buying symptoms; the rest were unscreened samples. Mean participant age ranged from 13.70 to
48.80 ($M = 26.70$, $SD = 9.34$). The proportion of women ranged from 0 to 100% ($M = 57.77$, $SD = 19.75$). These articles were published from 1995 to 2023, with data collected from 21 countries. Approximately one-third of the samples were collected in the United States. Numerous measures were used to evaluate compulsive buying and materialism. Fifteen compulsive buying measures were used across studies, with the most popular being the Compulsive Buying Scale (Faber & O’Guinn, 1992). Though 13 measures were utilized for materialism, the vast majority of studies (83%) used various versions of the Material Value Scale (Richins, 2004; Richins & Dawson, 1992).

**Effect Size Estimation**

The main meta-analysis included 89 raw Pearson correlation coefficients that ranged from $r = .13$ to $r = .86$ with a normal distribution, skewness = .35, $SE = .26$, kurtosis = .69, $SE = .51$. Based on Hedges and Vevea’s random-effects method, the mean correlation between compulsive buying and materialism was $r = .45$, 95% CI [.42, .48], $p < .001$. When the correlations were corrected for reliability of the measures, the average effect was larger, $r = .55$, 95% CI [.51, .59], $p < .001$. According to Lipsey et al. (1990), both effect sizes are considered large.

**Moderator Analyses**

The homogeneity tests for both uncorrected and corrected mean effect sizes showed no significant variability across effect sizes based on a random-effects approach, $\chi^2(73) < 77.80$, $p > .328$. The confidence intervals were small for the mean effect sizes (range = .06 to .08), suggesting high precision across studies for the estimate of Pearson $r$. Due to the homogeneity in effect sizes among studies, the planned random-effects moderator analyses were not pursued for
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<td>Female</td>
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<td>CBS, modified</td>
<td>MVS-15, modified</td>
<td>.35</td>
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<td>CBS</td>
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<td>GABS, modified</td>
<td>MVS-18, modified</td>
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<td>.57</td>
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<td>Materialism Measure</td>
<td>r</td>
<td>pb</td>
<td>% Women</td>
<td>Mean Age (SD)</td>
<td>Population</td>
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<td>Rindfleisch 1997*</td>
<td>261</td>
<td>CBS</td>
<td>MVS-18</td>
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<td>174</td>
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<td>MVS-18, modified</td>
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<td>Community adolescents</td>
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<td>Compulsive Buying Measure</td>
<td>Materialism Measure</td>
<td>r</td>
<td>p&lt;sup&gt;b&lt;/sup&gt;</td>
<td>% Women</td>
<td>Mean Age (SD)</td>
<td>Population</td>
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<td>MVS-9</td>
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<td>.70</td>
<td>59.6</td>
<td>26.6(11.0)</td>
<td>Community adults</td>
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<td>Journal Article</td>
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<td>YMS</td>
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<td>.74</td>
<td>51.0</td>
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<td>Community adolescents, adults</td>
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<td>Journal Article</td>
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<td>Tarka 2023</td>
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<td>MVS-18, modified</td>
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<td>MVS-15, modified</td>
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<td>Watson 2003</td>
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<td>Journal Article</td>
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<td>Weaver 2011</td>
<td>129</td>
<td>CBS(3), modified MVS-9</td>
<td>MS(2), modified</td>
<td>.52</td>
<td>.61</td>
<td>41.0</td>
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<td>Undergraduates</td>
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<tr>
<td>Yang 2006</td>
<td>501</td>
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<td>.46</td>
<td>.52</td>
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<td>24.7 (6.2)</td>
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<td>305</td>
<td>ECBS</td>
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<td>.63</td>
<td>.75</td>
<td>84.6</td>
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<tr>
<td>Zerach 2016*</td>
<td>204</td>
<td>CBS</td>
<td>MVS-18</td>
<td>.37</td>
<td>.56</td>
<td>52.5</td>
<td>45.8 (10.6)</td>
<td>Undergraduates, community adults</td>
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<td>Zheng 2023</td>
<td>831</td>
<td>CCBMS, modified MVS in Chinese</td>
<td>MVS in Chinese</td>
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<td>.57</td>
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<td>20.2 (1.5)</td>
<td>Undergraduates</td>
<td>China</td>
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Notes. **Compulsive buying measures:** G-CBI = German Compulsive Buying Index (Raab et al., 2005); ATBS-CBS = Attitudes Toward Buying Scale – Compulsive buying subscale (Luna-Arocas & Ferres, 1998); CB = Compulsive Buying Scale (d’Astous, 1990); CBS = Compulsive Buying Scale (Faber & O’Guinn, 1992); ECBS = Edwards Compulsive Buying Scale (Edwards, 1993); RCBS = Richmond Compulsive Buying Scale (Ridgeway, 2008), PRCBS = Polish Richmond Compulsive Buying Scale (Tarka & Kukkar-Kinney 2022), BSAS (Andreassen et al., 2015) = Bergen Shopping Addiction Scale; CCBMS = Canadian Compulsive Buying Measurement Scale (Valence, 1988); German Addictive Buying Scale (Raab et al., 1990); CBS(2) = Compulsive Buying Measure (Babin et al., 1994), STS = Spending Tendency Scale, CBS(3) = Compulsive Buying Measure (Roberts et al., 2000). **Materialism Measures:** MVS = Materialistic Value Scale (Richins, 2004), YMS = Youth Materialism Scale; MS = Materialism Scale (Jaleez, 2007), MS(2) = Materialism Scale (Wong et al., 2003), MVS in Chinese = Material Value Scale in Chinese (Li & Guo, 2009), BMS = Belk Materialism Scale (Belk, 1984).

* Indicates articles that were included in the sub-analysis involving measures with established psychometric properties and consequences of buying behaviour.
age, Household Financial Consumption Expenditure (HFCE; an indicator of consumer spending level for each country; World Bank Group, 2023), gender, or symptom pre-screening.

Fixed-effects homogeneity tests for both uncorrected and corrected mean effect sizes did show significant variability, $\chi^2(88) > 1,971.45, p < .001$, so moderation analysis was conducted for the one variable (publication year) suitable for a fixed-effects model. The basic fixed-effect model with 89 samples revealed the mean $r = .47$, 95% CI [.46, .48], $p < .001$. The year of publication significantly moderated this effect, $B(71) = 0.004$, 95% CI = [0.003, 0.006], $p = .01$, though the effect size was very small. From 1995 to 2023, the relation between materialism and compulsive buying became slightly stronger over time.

**Publication Bias**

Risk of publication bias was also assessed. According to the fail-safe $N$ analysis for the uncorrected meta-analyses, 143,792 unpublished studies with null findings would need to exist to overturn the current finding of a significant relation between materialism and compulsive buying. Furthermore, a correction for publication bias was applied based on Vevea and Woods’ (2005) R code for a publication sensitivity analysis. Under both moderate one- and two-tailed selection bias, the population effect size estimate was unchanged to two decimal places. Even applying a severe selection bias model, the population effect size remained at $r = .45$. The results were identical for the mean corrected effect size. As such, these results are likely not influenced by publication bias.

**Sub-Analysis: Measures with Established Psychometrics and Buying Consequences**

In the previous section, the results showed the mean correlation between materialism and compulsive buying had very little variation and was medium to strong. However, a weakness to the previous meta-analysis is that it included many studies that used measures with questionable
or unexamined psychometric properties. The next step will be to ensure the conclusions from the previous meta-analysis would be the same when examining only studies that used measures with established psychometric properties and that include problematic consequences of the buying behaviour. Narrowing the studies down to those that take advantage of the best measures available can give a more trustworthy estimate of the strength of the relation between compulsive buying and materialism if only measures with established reliability and validity are used.

Several inclusion criteria were used for these analyses. As recommended by Cochrane Reviews, excluding studies based on measurement quality should be done with care due to the difficulty of judging “quality”. Accordingly, this sub-analysis included studies using compulsive buying and materialism measures that had been introduced with a publication that had a primary focus of presenting psychometric information about the relevant measure. Modified measures were accepted if psychometric information had been published about the modified version. Moreover, the compulsive buying measure had to include items that relate to negative consequences from buying, which aligns with definitions of pathological behaviour (DSM-5, American Psychiatric Association, 2013). Accordingly, although the Richmond Compulsive Buying Scale (Ridgeway, 2004) is a popular measure, especially in the consumerism literature, studies using this measure were excluded because it does not include any items that relate to negative consequences of compulsive buying. Moreover, any studies that included the MVS-6 or MVS-3 were also excluded, as the creators of these measures specifically recommended that these two shortened versions of the MVS-18 were not psychometrically strong (Richins & Dawson, 2004). The studies included in this secondary analysis are denoted with an asterisk in Table 1.
**Effect Size Estimation and Moderator Analyses**

In total, 17 articles and 22 independent samples were included in the analysis. The results were nearly identical to the main meta-analysis. The mean uncorrected correlation between compulsive buying and materialism was \( r = .43, 95\% \text{ CI} [.37, .48], p < .001 \), and the corrected coefficient was \( r = .53, 95\% \text{ CI} [.45, .60], p < .001 \).

Fixed-effects homogeneity tests for both uncorrected and corrected mean effect sizes did show significant variability, \( \chi^2(21) > 228.92, p < .001 \), so moderation analysis was conducted for the one variable (publication year) suitable for a fixed-effects model. The basic fixed-effect model with 22 samples revealed the mean \( r = .47, 95\% \text{ CI} [.45, .48], p < .001 \). The year of publication significantly moderated this effect, \( B(19) = 0.01, 95\% \text{ CI} = [0.01, 0.01], p = .01 \), though the effect size was still small. Again, between 1995-2023, the relation between materialism and compulsive buying strengthened slightly over time.

**Discussion**

How do people get to the point where they continue to buy things, even when they cannot afford new items and their families are strongly protesting the purchases? Materialism, a social value that emphasizes objects as important for well-being and success, has long been considered an essential factor in compulsive buying (Dittmar, 2014). This meta-analysis sought to measure how strongly materialism and compulsive buying are related. A literature search identified papers that reported correlations between materialism and compulsive buying. A pooled effect size based on 89 independent samples revealed a raw correlation of \( r = .45, 95\% \text{ CI} [.42, .48] \) and, corrected for measurement reliability, \( r = .55, 95\% \text{ CI} [.51, .59] \). A supplementary meta-analysis that included only those papers that had used measures with established psychometric properties showed similar estimates of the strength and variability of the relation. Because of the
consistency of correlation coefficients across studies, only publication year was examined as a moderator. This moderation analysis showed that the relation between compulsive buying and materialism strengthened slightly between 1995-2023, but the effect size was weak.

The random-effects homogeneity tests and confidence intervals around the mean effect sizes suggested very little variability across studies in the magnitude of the correlation between materialism and problematic acquisition. Moreover, the samples included in the meta-analyses differed in many ways (e.g., age, country, consumer spending level, participants who were pre-screened or not pre-screened for compulsive buying symptoms, and gender), yet no significant variability was found for the mean correlation coefficient. Despite limitations outlined below, the results were quite stable and provide some support for Dittmar’s (2004) model of the role of materialism in compulsive buying.

On the other hand, the study samples were more homogenous than would be optimal for good generalizability. Mean sample age was quite varied across studies for adolescents and young adults, but the highest mean age was 49, indicating that the meta-analysis does definitively not speak to the relation between materialism and compulsive among older adults. Although data were collected from participants in 23 countries, roughly two-thirds of these were majority-Caucasian countries and only about one-quarter were Asian countries, suggesting limitations on generalizability beyond western industrialized nations. Also, over three-quarters of the samples included in the meta-analysis were not screened for compulsive buying symptoms, meaning that the meta-analytic results are most generalizable to nonclinical populations at this time.

Some of the current meta-analytic results go against certain stereotypes. For example, some researchers have theorized that highly materialistic people will likely work more hours,
earn high incomes (Kasser, 2007), and rapidly consume products. Thus, it seems likely in countries with high consumer spending, the relation between materialism and compulsive buying may be relatively stronger, but the low variability in mean correlation suggests otherwise. Furthermore, many compulsive buying studies specifically recruit female participants (Harnish & Bridges, 2015; Zheng, 2023) based on a stereotype that women are more likely to struggle with compulsive buying than men (Reisch, 2001). This gender justification for study inclusion has been made numerous times for compulsive buying samples (Harnish & Bridges, 2015; Otero-Lopez & Villardefrancos, 2013), despite some researchers discovering the opposite findings, with no significant differences in gender found in terms of compulsive buying (Ching et al., 2016; Dittmar, 2005; Mattos et al., 2016). The low variability in the mean correlation between compulsive buying and materialism suggests that the relation between materialism and compulsive buying seems to be stable across studies that vary in gender distribution.

Publication year was the only moderator that was specifically examined for the relation between materialism and compulsive buying. The results suggested that materialism and compulsive buying were more strongly related from 1995 to 2023, but the effect size was small. This small effect was surprising, given the radically changing landscape of shopping over the years, with advertisement strategies becoming more sophisticated and the advancements of online shopping methods over the years. These changes impact not only buying behaviour, but may send the message that objects are essential for happiness and success (e.g., advertisements that imply buying Axe spray will result in droves of women approaching the wearer), or that people need to buy certain things to keep up with peers (Shrestha, 1997). Moreover, some studies have suggested an increase in materialism over the years (Bartolini & Sarracino, 2017) and a rise in compulsive buying as well (Maraz & Yi, 2022; Neuner et al., 2005). Given the small effect
size, this likely speaks to how the relation between materialism and compulsive buying remains relatively steady in the face of many factors.

The current meta-analysis also concurs with earlier findings. Recall that Dittmar’s (2014) partial meta-analysis of compulsive buying and materialism yielded a mean effect size of $r = .43$, 95% CI [.39, .48] from 30 articles. Additionally, de Oliveira Santini et al. found a pooled effect size from 17 articles, $r = .38$. The current meta-analysis found a mean effect size and 95% confidence intervals that were within range of both these papers, which provides further support that the relation between materialism and compulsive buying is consistently in the moderate range.

Materialism seems to be important to compulsive buying, but materialism could also be important for excessive acquiring in other contexts, too. People who hoard struggle with discarding or letting go of their objects, despite their homes being so full of stuff that they cannot sleep in their bed, cook in their kitchen, or entertain friends (American Psychiatric Association, 2013). Most people who hoard also struggle with excessive acquisition, including purchasing items or acquiring items for free. Furthermore, motivations behind the three main symptoms of hoarding (i.e., difficulty discarding, clutter, excessive acquisition) may not be the same. Common reasons for saving items (e.g., fear of losing important information/memories, sentimental feelings about objects, fear of wasting an object’s potential, appreciation of the item’s aesthetic qualities) do not seem to mirror motivations for acquiring (Dozier & Ayers, 2014; Frost, Steketee, Tolin, Sinopoli, & Ruby, 2014; Timpano et al., 2020).

Only two studies have examined the correlation between materialism and hoarding symptoms. In an undergraduate sample, Frost et al. (2007) found that materialism was moderately correlated with overall hoarding symptoms ($r = .46$) and excessive acquisition
specifically ($r = .59$). In an adult community sample, Claes and colleagues (2016) reported a somewhat smaller correlation between materialism and overall hoarding symptoms ($r = .25$), but materialism was not a unique predictor when accounting for depression and identity confusion. Thus, there is some support for the idea that materialism may be relevant to excessive acquisition in hoarding. Chapter 3 will extend the findings from the current meta-analysis and further investigate the role of materialism in excessive acquisition in samples of participants with compulsive buying and hoarding symptoms.

This meta-analysis had several strengths, as it included a rigorous literature search and efforts were made to include unpublished research as recommended for meta-analysis (Tetzlaff, Moher, Pham, & Altman, 2006). This meta-analysis used a replicable and thorough literature search process. Furthermore, two reviewers scoured the articles that were selected for thorough readings, independently extracted data, and discussed any discrepancies. When articles had included measures of both materialism and compulsive buying, but not enough information was available to calculate the correlation, I emailed the authors to request additional relevant information (two effect sizes were added with this method.) When possible, relevant non-English studies were translated and evaluated for inclusion.

One important methodological issue is that all papers included in the meta-analyses involved Likert-type self-reported levels of materialism and compulsive buying. Likert-type measures are a convenient and efficient way to collect data on these constructs, but self-report has some limitations. For example, social desirability bias may interfere with how accurately people respond to such measures (Latkin, Edwards, Davey-Rothwell, & Tobin, 2018). Moreover, one study showed self-evaluation had only a modest relationship with actual behaviour and performance (Dunning et al., 2004). The literature search identified only one study that
experimentally manipulated materialism levels (Ku, Wu, Lao, & Lam, 2018). However, this study did not report enough information to calculate a Pearson $r$ coefficient between materialism and compulsive buying symptoms. The Ku et al. study used a prime for materialism, which could be inspiration for future studies to rely on multiple methods to assess materialism and compulsive buying.

This study was able to consider only moderators that reflect differences between studies, not individual differences. Other possible moderators to explore in the future could be impulsivity and present vs. future time perspective. In a study that included both people who did and did not struggle with compulsive buying disorder, impulsivity scores were correlated with compulsive buying severity ($r = .44$; Black et al., 2012). Thus, impulsivity may strengthen the relation between materialism and compulsive buying, as some people may not think through their purchases or find it difficult to resist urges to give into materialistic values. Present-time perspective and future-time perspective is also another moderator to consider. Present-time perspective represents hedonistic, sensation-seeking, risk-taking attitudes towards life, while future-time perspective describes a general orientation towards thinking about the future (Zimbardo & Boyd, 1999). In the Ku et al. (2018) study mentioned earlier, researchers reported an interaction in which the relation between self-reported materialism and compulsive buying was stronger for people with a present-time perspective than for those with a future-time perspective. These findings hint that having people focus on the future may help loosen connections between materialism and compulsive buying. Taken together, impulsivity and temporal focus may have good potential as moderators for the relation between compulsive buying and materialism.
Given that materialism has a strong social comparison component (i.e., objects are benchmarks of success for oneself and others), looking to other social factors to understand excessive acquisition is an important next step. For example, some research provides clues that social motivations, like affiliation and status-seeking, are important to acquiring. For example, Kukar-Kinney et al. (2016) found that the degree to which people base their decisions (like acquiring) on whether they anticipate others will approve was a unique predictor of compulsive buying symptoms ($B = 0.32$). Guo et al. (2011) had similar findings across two samples of adolescents and young adults ($Bs = 0.18$ to $0.25$). Moreover, Dittmar (2004) found in a sample of participants with compulsive buying symptoms that buying to impress other people was uniquely correlated with compulsive buying ($B = 0.22$). The next chapter will focus on testing social motivations as possible correlates for excessive acquisition.

The results of the meta-analysis can speak to how strongly materialism and compulsive buying are related, but the directionality of this relationship is still unknown. Currently, Dittmar’s (2004) model suggests that materialism is an antecedent to compulsive buying, but no studies have yet demonstrated this clearly. To understand the directionality of materialism and compulsive buying, a longitudinal study that follows materialistic values and shopping habits over time may elucidate this relationship further. This will help with understanding the trajectory of compulsive buying and materialistic values and if certain time periods weaken or strengthen this relation.

Furthermore, little is known about the development of materialistic values. Do such values form early in life? What strengthens or weakens these values over time? Some researchers suggest that materialism has increased over the past decades (Bartolini & Sarracino, 2017), which may be related to changes in advertising strategies and convenience of shopping methods.
available. Shresthra (1997) suggested that if people are persistently around other materialistic individuals, then they may feel pressure to give into materialistic urges to keep up with their peers. In contrast, Inglehart (2008) offered two hypotheses on how materialism may evolve over time. The first is a scarcity hypothesis: when resources are scarce, people prioritize materialistic values, but under conditions of prosperity, people may emphasize other goals, like esteem and intellectual satisfaction. The second is the socialization hypothesis: one’s basic values reflect whatever conditions were dominant during pre-adult development, and materialism only changes through intergenerational population replacement. To support or refute each of the theories above, assessing materialistic values multiple times throughout the lifespan may be useful in terms of understanding when materialistic values seem to form. Identifying correlates of materialism would be the next step, which then could form the basis for experimental studies that could attempt to weaken or strengthen such theories.

Overall, the current meta-analysis indicates that compulsive buying and materialism are moderately related, but gaps still exist in the literature. The next step is to see if materialism is also important in other contexts of excessive acquisition, like hoarding disorder. Moreover, given that materialism has a strong social aspect, it would be informative to investigate what kind of role other social factors play in excessive acquisition, as well. The next chapter will explore these research gaps further.
Chapter 3: Social Values and Social Motivations as
Vulnerability Factors for Excessive Acquisition

Most people who hoard have something in common with those who compulsively buy; they both bring home too much stuff (i.e., excessive acquisition), resulting in distress, financial hardships, and interpersonal problems. In addition, people with hoarding problems cannot bear to let go of their objects, which results in mounting clutter to the point where they can no longer carry out daily activities in the home, like sleeping in bed or cooking in the kitchen (American Psychiatric Association, 2013). On the surface, the acquiring patterns of people who hoard and people who compulsively buy look quite similar. Are the drivers of excessive acquiring the same for people who compulsively buy and those who hoard? Are they different? Understanding similarities and differences between excessive acquisition within hoarding and compulsive buying is an important step in figuring out how these problem behaviours develop and are maintained over time. A good place to start with understanding these two groups is to understand how social values and social motivations relate to excessive acquisition.

When people bring home too many items, what else are they trying to acquire besides objects? Knowing how acquiring can fulfill a person beyond the material goods themselves can help with identifying, and ultimately addressing, vulnerability factors for excessive acquisition. As outlined below, the degree to which people are acting consistently with their social values and fulfilling their own social motivations may be key to understanding what people may get out of bringing home too much stuff. To date, excessive acquisition in hoarding has not been rigorously researched. In contrast, much research has focused on vulnerability factors for people who compulsively buy. This difference in research focus offers clues for where the research should progress in compulsive buying and also with furthering our understanding of excessive
acquisition in hoarding. For example, can we identify potential vulnerability factors for people who excessively acquire, whether the person would be grouped within compulsive buying or hoarding populations? If so, our ability to identify and design treatments for excessive acquisition can be streamlined and improved. If not, perhaps we can learn more about excessive acquisition in general by learning what distinguishes these behaviours when they occur in the context of one problem versus another.

The last chapter examined materialism, a social value, which is a potential vulnerability for compulsive buying; now let us turn our attention to another potential contributor to excessive acquisition – social motivations. Social motivations are known to play an important role in acquiring decisions. In fact, advertising companies have heartily embraced the notion that social factors influence buying choices. For example, many companies design their advertising campaigns to involve a barrage of social information, including identifying their best sellers, notifying customers of how many other people have viewed certain products, and employing celebrities as brand ambassadors. These efforts are taken to enhance the likelihood that customers will do one thing over and over: buy, buy, and buy.

Materialism involves social processes. Indeed, highly materialistic people use personal belongings to judge their own and other people’s level of success (Richins & Dawson, 1992). Moreover, social cognition is an important part of both daily life and acquiring things (Auty & Elliott, 2001). Therefore, social motivations likely play an important role in acquisition. A brief overview of social motivations will be provided before exploring how social motivations may be connected to excessive acquisition.

Maslow originally posited a hierarchical set of human motivations (Maslow, 1943). His model included what he believed to be essential motivations of physiology (thirst and hunger),
safety (protection from physical harm), love (affection and belongingness), esteem (respect and achievement), and self-actualization (reaching one’s potential). These motivations were ordered in terms of human development, with some motivations being the focal point at early stages of life and others becoming prominent as the life span progressed. Thus, Maslow’s hierarchy is often depicted as a triangle, with early motivations appearing on the bottom and later-life motivations portrayed at the top.

Since Maslow’s (1943) seminal model of motivations, the fundamental-motives framework (Kenrick, Griskevicius, & Schaller, 2010) has gained traction. The fundamental-motives framework is rooted in the idea that human ancestors encountered recurring problems that gave rise to a suite of motivational systems that helped humans to deal successfully with social life. Similar to Maslow’s model, the fundamental-motives framework is depicted as a pyramid, with developmental life stage taken into account. As an adult, each of these motivational systems can become activated by environmental threats and opportunities, which influence cognition and behaviour in functionally specific ways (Kenrick et al., 2010; Neel et al., 2016). Neel and colleagues developed the Fundamental Social Motives Inventory to measure social motivations such as status-seeking, kin care, and affiliation (see Kenrick et al., 2010; Neuberg et al., 2010).

I propose that unmet social motivations and materialistic values could play important roles for excessive acquisition. Acquiring can serve many purposes, as owned items can signal status, level of success, and expertise (Cheng & Tracy, 2013). Thus, acquiring may help meet social motivations by enhancing social connections, maintaining or elevating status, and increasing affiliation with others. Furthermore, materialism has long been seen as a driver of excessive acquisition due to the importance placed on material objects as a source of self-worth.
and admiration from others (Dittmar, 2014). The results from Chapter 2 partially support this notion, as the findings suggest materialism and compulsive buying are related, although they cannot speak to the directionality of this relationship. For people experiencing activated social motivations or high materialistic values, acquiring objects could be an avenue to feel closer to their personal goals, at least temporarily. Thus, materialism and certain social motivations are hypothesized vulnerability factors for excessive acquisition.

This idea of social motivations or high levels of materialism as vulnerability factors seems to make the most sense within compulsive buying, as social cognition has been an area of interest among researchers who study compulsive buying (e.g., Dittmar, 2005). However, as discussed previously, little is known about excessive acquisition in hoarding. This gap is notable, given that intervention recommendations for hoarding (Steketee & Frost, 2013) strongly encourage clinicians to prioritize helping the client get their excessive acquiring under control at the beginning of treatment. If excessive acquisition is not adequately addressed from the outset of treatment, any progress made in the other main symptoms of hoarding, difficulty discarding and clutter, will be canceled out by the continuous stream of items that are brought into the home.

How materialism and social cognition fit into the excessive acquiring associated with hoarding is currently unknown, but this line of inquiry could provide useful insight into this difficult-to-treat problem. Indeed, at first glance, social motivations do not seem strongly connected to hoarding disorder. Hoarding behaviours often spark conflict between people who hoard and their loved ones (Ayers, Saxena, Golshan, & Wetherell, 2010; Grisham, Steketee, & Frost, 2008, Timpano et al., 2011). High levels of clutter can frustrate household members and loved ones when the home cannot be used for daily activities and the clutter poses safety risks.
Excessive acquiring in the context of hoarding can also cause interpersonal conflict. Acquiring excessive items may add to mounting clutter. Feelings of hopelessness from loved ones may arise if any gains made towards discarding objects or decreasing clutter results in new objects simply filling the spaces that were just made. However, much consumerism literature has pointed to acquiring as an activity that can be pleasant, mood-boosting, and social. Thus, perhaps social values and social motivations do play a role in excessive acquiring for hoarding disorder, but unfortunately, bringing home more stuff works against some of the person’s goals because the home is already so full.

Some social motivations may be more related to excessive acquisition than others. Past research provides clues that affiliation and status-seeking motives might be correlated with compulsive buying. Compulsive buying has been linked to susceptibility to peer influence \( r = .27 \); Kukar-Kinney et al., 2016); image consciousness (i.e., social approval can bolster self-esteem; \( B = 0.34 \); Nga et al., 2011), public self-consciousness (i.e., being aware of oneself as a social object; \( B = 0.26 \); Xu, 2008), and need for approval \( r = .25 \); Harnish & Bridges, 2015). People with self-reported compulsive buying symptoms also acknowledge that one motivation for buying is to improve their social status (e.g., Christenson et al., 1994; Dittmar, 2005; Faber & O’Guinn, 1992). Dittmar (2004) found that self-reported compulsive buying symptoms were associated with endorsement of “improving social status” as a motivation for buying. If people have an unfulfilled motivation for affiliation or status, acquiring objects could be an attempt to fulfill these social motivations.

To extend our understanding of status-seeking in excessive acquisition, how status-seeking is measured needs to be broadened. The studies mentioned above all measured status-seeking via self-report methods, which are vulnerable to social desirability bias (e.g., Dittmar,
Recent research has demonstrated the ubiquity of status-striving in daily life, yet many people are reluctant to admit to such a motivation, despite their behaviour seeming to reflect otherwise (Kim & Pettit, 2015). These findings suggest that if more is to be learned about status-seeking within excessive acquisition, methods that minimize socially desirable response styles are essential in moving this research forward.

As mentioned earlier, excessive acquisition is a problem for most people who hoard, and it is essential to understand motivations behind this behaviour. A qualitative study ($N = 11$) of retrospective reflections of emotional experience during acquiring episodes found that participants felt pleased, gratified, and clever about their acquisitions (Taylor, Theiler, Nedeljkovic, & Moulding, 2018). These positive reactions to acquiring are consistent with the idea that buying may provide a boost to self-worth. Indeed, the common use of the term “retail therapy” suggests that many people consider buying to be an activity that can boost one’s mood.

In sum, social values and social motivations are plausible vulnerability factors for excessive acquisition, but this line of work has yet to be fully explored. Furthermore, the literature provides some clues that these social factors play an important role in compulsive buying but is largely silent on how these same constructs relate to excessive acquiring in hoarding. Given that treatment outcomes for both compulsive buying and hoarding are modest (Hague et al., 2016; Tolin et al., 2015), our understanding of excessive acquisition is clearly limited. Exploring the extent to which materialism and social motivations relate to excessive acquisition may extend the knowledge base on how excessive acquisition is conceptualized, how it develops over time, and how it is best managed.

Depression, however, is an important confound that needs to be considered. Depression is highly comorbid with hoarding disorder, as Grisham and colleagues (2010) found 53% of their
hoarding participants also received diagnoses for major depressive disorder. Similarly, within a compulsive buying sample, Müller et al. (2010) found that 50% of their sample also met criteria for major depressive disorder. Therefore, if depression does account for variance in excessive acquisition, this is important to know for conceptualization and treatment.

Age should also be considered as a potential confounding variable. The average age of hoarding-disordered research volunteers in previous research is about 50 years old, whereas the average age for compulsive buying samples tends to be fairly young, typically around mid-20s. Several age factors could account for variation in excessive acquisition, such as changes in materialism over the lifespan (Kasser et al., 2014) or cohort effects in the changing landscape of online shopping. Furthermore, several social motivations decline with age, such as motivations for affiliation and mate seeking (Neel et al., 2016). People seem to become less concerned with being socially excluded as they get older. A possible explanation for this relation is that younger adults may still be establishing themselves and forming their social identity (Scales et al., 2016). Social relationships may become more stable and durable as one grows older, possibility resulting in exclusion concerns being less salient than in young adulthood (Neel et al., 2016). Reproductive factors may also play a role, as people in their 50s and older (especially women, who are likely past childbearing age) could have fewer mate-related motives. Therefore, if social motivations and social values can predict excessive acquiring, it is important to understand any age-related differences.

In summary, these findings on social values, social motivations, and excessive acquiring reveal some gaps in the literature. As shown in Chapter 2, materialism and compulsive buying are consistently moderately correlated across many studies. The fundamental-motives framework is a comprehensive theory about human motivations that can bring together previous findings on
social motivations and guide future research. Three correlational studies (described in more detail in Chapter 1) hint that social motivations are related to buying decisions and compulsive buying symptoms. For example, buying decisions and compulsive buying symptoms are correlated with approval-seeking, susceptibility to peer influence, and status-seeking (Kukar-Kinney et al., 2016; Nga et al., 2011; Xu, 2008), but none have adequately and systematically explored associations between fundamental social motives and excessive acquisition specifically. Though materialism and social motivations (to a limited extent) have been explored in compulsive buying, these social factors have not been thoroughly examined in hoarding. Hoarding behaviours are often stigmatized by society and can become a point of contention between those who hoard and their loved ones (Grisham et al., 2011). Thus, acquiring in the context of hoarding disorders may be at odds with fulfilling social values and social motivations. However, if excessive acquisition in hoarding is socially motivated, then it is essential to help individuals find other ways to fulfill their social values and social motivations for long-term social success.

The goal of this research was to compare excessive acquisition for those who hoard and those who do not. Specifically, this work sought to identify how strongly materialism relates to excessive acquisition across symptom groups and how well materialism and social motivations uniquely predict excessive acquisition.

Thus, the main research questions for this chapter are:

1) How strongly are materialism and excessive acquisition correlated for people with hoarding symptoms? How does that compare to people with compulsive buying symptoms and healthy acquirers?
2a) Do people who excessively acquire endorse higher levels of materialism and social motivations compared with people who do not excessively acquire?

2b) Among excessive acquirers, do materialism and social motivations differentiate those with and without hoarding symptoms?

3) How well do social motivations predict acquisition when accounting for materialism?

**Method**

**Participants**

Participants were recruited using many approaches. The symptom groups were recruited through advertisements on social media (i.e., Facebook, Twitter, Reddit, Instagram, LinkedIn). To recruit hoarding participants, I also contacted members of a hoarding research registry that included previous hoarding research participants who had consented to being contacted again for future studies. Additional compulsive buying symptom participants were recruited via advertisements in online compulsive buying self-help groups and via a notice sent to clients by a clinician who treats compulsive buying. Some compulsive buying symptom participants were also recruited through the University of British Columbia’s Psychology Department Human Subject Pool (HSP). This platform allows undergraduate psychology students at UBC to participate in research for partial course credit. Healthy controls were also recruited via Prolific, a study platform that has a large base of potential research participants. To approximate the typical age range for hoarding participants, I recruited Prolific participants who were at least 38 years old. The UBC Psychology Department HSP was used to recruit healthy controls with a comparable age as the compulsive buying group, which typically involves samples in their early 20s. See Figure 2 for a flow diagram of participant recruitment.
Figure 2

*Recruitment Flowchart*

- Enrollment
  - N = 404 pre-screened (symptom groups) or signed up for healthy control group
  - 77 screened for a symptom group but not eligible
  - 260 eligible for a symptom group
  - N = 50 in hoarding symptom group included for analyses
  - 77 met hoarding criteria
    - 27 excluded
      - incomplete survey = 20
      - failed attention checks = 3
      - did not meet self-report inclusion criteria = 4
  - 144 healthy control participants eligible
  - N = 119 in healthy control group included for analyses
  - 55 excluded
    - incomplete survey = 15
    - failed attention checks = 5
    - did not meet self-report inclusion criteria = 36

- Allocation

- Analyses

N = 106 met compulsive buying criteria

- 55 excluded
  - incomplete survey = 15
  - failed attention checks = 5
  - did not meet self-report inclusion criteria = 36

N = 119 in healthy control group included for analyses

- 25 excluded
  - incomplete survey = 22
  - failed attention checks = 3

N = 51 in compulsive buying symptoms group included for analyses

N = 50 in hoarding symptoms group included for analyses
Exclusion criteria included age less than 19 years, lack of fluency in English, inability or refusal to complete a phone screen prior to the study (excessive acquisition symptom groups only), and inability to complete an online study. Data were included in analyses if the participant completed both the survey and the Q-sort task and passed three out of four attention check questions, with one of those passed attention check questions being on the Q-sort task. Inclusion criteria for the hoarding disorder symptom group were Saving Inventory-Revised (SI-R) total score greater than 38 and SI-R clutter subscale score greater than 16. These SI-R cut-offs were based on cut-off scores established by Kellman-McFarlane et al. (2019). For the compulsive buying symptom group, the SI-R acquisition subscales score had to be greater than 10 and the SI-R clutter score less than 17. Table 2 shows means and standard deviations for the main study variables, for both the full sample and each symptom group (i.e., hoarding symptoms, compulsive buying symptoms, and healthy control).

Table 2

Means and Standard Deviations for Symptom Groups and Full Sample

<table>
<thead>
<tr>
<th></th>
<th>Hoarding</th>
<th>Compulsive Buying</th>
<th>Healthy Acquiring</th>
<th>Full Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 50</td>
<td>n = 51</td>
<td>n = 119</td>
<td>N = 220</td>
</tr>
<tr>
<td>Age</td>
<td>46.52a(16.88)</td>
<td>24.67b(9.79)</td>
<td>31.39c(14.56)</td>
<td>33.27(15.21)</td>
</tr>
<tr>
<td>Saving Inventory-Revised</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excessive Acquisition</td>
<td>18.30a(5.36)</td>
<td>17.00a(3.78)</td>
<td>8.55b(4.72)</td>
<td>12.90(6.52)</td>
</tr>
<tr>
<td>Clutter</td>
<td>26.08a(4.85)</td>
<td>10.14b(4.32)</td>
<td>7.96c(6.40)</td>
<td>12.92(9.15)</td>
</tr>
<tr>
<td>Difficulty Discarding</td>
<td>21.32a(3.99)</td>
<td>14.51b(5.77)</td>
<td>10.13c(5.04)</td>
<td>13.87(6.61)</td>
</tr>
<tr>
<td>Total</td>
<td>65.70a(11.53)</td>
<td>41.65b(9.79)</td>
<td>26.64c(14.56)</td>
<td>39.69(20.08)</td>
</tr>
<tr>
<td>CES-D</td>
<td>15.02a(4.61)</td>
<td>15.61a(5.46)</td>
<td>10.69b(4.11)</td>
<td>12.87(5.05)</td>
</tr>
<tr>
<td>Material Value Scale-9</td>
<td>44.30a(11.63)</td>
<td>48.67b(6.23)</td>
<td>43.31a(7.01)</td>
<td>43.70(8.63)</td>
</tr>
<tr>
<td></td>
<td>Hoarding</td>
<td>Compulsive Buying</td>
<td>Healthy Acquiring</td>
<td>Full Sample</td>
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</tr>
<tr>
<td></td>
<td>$n = 50$</td>
<td>$n = 51$</td>
<td>$n = 119$</td>
<td>$N = 220$</td>
</tr>
<tr>
<td><strong>Q-sort</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reputation Preservation</td>
<td>5.06&lt;sub&gt;a&lt;/sub&gt; (8.78)</td>
<td>5.14&lt;sub&gt;a&lt;/sub&gt; (8.20)</td>
<td>1.64&lt;sub&gt;b&lt;/sub&gt; (7.91)</td>
<td>3.23 (8.33)</td>
</tr>
<tr>
<td>Competitive Orientation</td>
<td>-0.74&lt;sub&gt;a&lt;/sub&gt; (6.93)</td>
<td>0.69&lt;sub&gt;a&lt;/sub&gt; (7.70)</td>
<td>0.07&lt;sub&gt;a&lt;/sub&gt; (6.88)</td>
<td>0.03 (7.08)</td>
</tr>
<tr>
<td>Sufficient Status</td>
<td>-2.02&lt;sub&gt;a&lt;/sub&gt; (6.99)</td>
<td>-2.98&lt;sub&gt;a&lt;/sub&gt; (6.08)</td>
<td>-2.29&lt;sub&gt;a&lt;/sub&gt; (5.61)</td>
<td>-2.39 (6.03)</td>
</tr>
<tr>
<td><strong>Fundamental Social Motives Inventory</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Protection</td>
<td>5.23&lt;sub&gt;ab&lt;/sub&gt; (1.12)</td>
<td>5.43&lt;sub&gt;b&lt;/sub&gt; (1.51)</td>
<td>4.80&lt;sub&gt;a&lt;/sub&gt; (1.09)</td>
<td>5.04 (1.23)</td>
</tr>
<tr>
<td>Disease Avoidance</td>
<td>5.34&lt;sub&gt;a&lt;/sub&gt; (1.32)</td>
<td>4.99&lt;sub&gt;b&lt;/sub&gt; (1.51)</td>
<td>4.73&lt;sub&gt;b&lt;/sub&gt; (1.20)</td>
<td>4.93 (1.32)</td>
</tr>
<tr>
<td>Affiliation (Group)</td>
<td>4.90&lt;sub&gt;a&lt;/sub&gt; (1.17)</td>
<td>4.98&lt;sub&gt;a&lt;/sub&gt; (0.98)</td>
<td>4.94&lt;sub&gt;a&lt;/sub&gt; (1.03)</td>
<td>4.94 (1.05)</td>
</tr>
<tr>
<td>Affiliation (Exclusion Concern)</td>
<td>5.37&lt;sub&gt;a&lt;/sub&gt; (1.09)</td>
<td>5.73&lt;sub&gt;a&lt;/sub&gt; (1.20)</td>
<td>4.75&lt;sub&gt;b&lt;/sub&gt; (1.23)</td>
<td>5.12 (1.26)</td>
</tr>
<tr>
<td>Affiliation (Independence)</td>
<td>4.95&lt;sub&gt;a&lt;/sub&gt; (1.23)</td>
<td>4.70&lt;sub&gt;a&lt;/sub&gt; (1.23)</td>
<td>4.61&lt;sub&gt;a&lt;/sub&gt; (1.10)</td>
<td>4.71 (1.61)</td>
</tr>
<tr>
<td>Status</td>
<td>4.62&lt;sub&gt;a&lt;/sub&gt; (1.13)</td>
<td>4.37&lt;sub&gt;a&lt;/sub&gt; (1.42)</td>
<td>4.28&lt;sub&gt;a&lt;/sub&gt; (1.19)</td>
<td>3.44 (1.24)</td>
</tr>
<tr>
<td>Mate Seeking</td>
<td>3.17&lt;sub&gt;a&lt;/sub&gt; (1.76)</td>
<td>3.64&lt;sub&gt;a&lt;/sub&gt; (1.96)</td>
<td>3.47&lt;sub&gt;a&lt;/sub&gt; (1.60)</td>
<td>3.44 (1.73)</td>
</tr>
<tr>
<td>Mate Retention (General)*</td>
<td>5.97&lt;sub&gt;a&lt;/sub&gt; (0.92)</td>
<td>6.19&lt;sub&gt;a&lt;/sub&gt; (0.93)</td>
<td>5.91&lt;sub&gt;a&lt;/sub&gt; (0.98)</td>
<td>5.99 (0.96)</td>
</tr>
<tr>
<td>Mate Retention (Breakup Concern)*</td>
<td>3.45&lt;sub&gt;a&lt;/sub&gt; (1.90)</td>
<td>3.81&lt;sub&gt;a&lt;/sub&gt; (2.04)</td>
<td>2.94&lt;sub&gt;a&lt;/sub&gt; (1.45)</td>
<td>3.25 (1.73)</td>
</tr>
<tr>
<td>Kin Care (Family)</td>
<td>5.68&lt;sub&gt;a&lt;/sub&gt; (1.34)</td>
<td>5.80&lt;sub&gt;a&lt;/sub&gt; (1.24)</td>
<td>5.86&lt;sub&gt;a&lt;/sub&gt; (1.05)</td>
<td>5.80 (1.16)</td>
</tr>
<tr>
<td>Kin Care (Children)*</td>
<td>5.89&lt;sub&gt;a&lt;/sub&gt; (0.84)</td>
<td>6.61&lt;sub&gt;a&lt;/sub&gt; (0.35)</td>
<td>5.83&lt;sub&gt;a&lt;/sub&gt; (0.96)</td>
<td>5.89 (0.91)</td>
</tr>
<tr>
<td>Female gender %</td>
<td>68&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>80&lt;sub&gt;b&lt;/sub&gt;</td>
<td>65&lt;sub&gt;a&lt;/sub&gt;</td>
<td>69</td>
</tr>
<tr>
<td>Non-binary gender %</td>
<td>2&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1&lt;sub&gt;a&lt;/sub&gt;</td>
<td>2</td>
</tr>
</tbody>
</table>

*Note.* CES-D = Centre for Epidemiological Studies – Depression Scale. Different subscripts indicate significant group differences based on simple effects ANOVAs or chi-square analyses, $p < .05$. 

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* These subscales were completed only if relevant to the participant. Sample sizes for the Mate Retention subscale: Hoarding $n = 26$, Compulsive Buying $n = 26$, Healthy Acquiring $n = 62$, and Full Sample $N = 114$. For the Kin Care (Children) subscale: Hoarding $n = 15$, Compulsive buying $n = 3$, Healthy Acquiring $n = 39$, Full Sample $N = 57$.

**Measures**

**Saving Inventory-Revised (SI-R; Frost et al., 2004)**

This 23-item measure is a widely-used self-report tool for assessing hoarding symptom severity. Higher scores indicate greater hoarding severity. This scale is comprised of three subscales: excessive acquisition, difficulty discarding, and clutter. The measure has demonstrated excellent psychometric properties, including good test-retest reliability and internal consistency in multiple settings (Frost et al., 2004) and good evidence of convergent validity with another measure of hoarding symptom severity, the Hoarding Rating Scale (Tolin et al., 2010). The SI-R has also been found to discriminate between hoarding and healthy controls (Frost et al., 2004). Although diagnostic decisions cannot be made based on questionnaire responses alone, the SI-R does have an empirically established clinical cut-off score that represents a clinically significant level of symptoms. A recent psychometric evaluation suggests that a SI-R total score of 39 may be an optimal cut-off for broad populations, and for the subscales, the optimal cut-off score for excessive acquisition is 11 (Kellman-McFarlane et al., 2019). Furthermore, the SI-R acquisition subscale has demonstrated good test-retest reliability ($r = .78$), as well as good sensitivity (81%) and specificity (79%) in differentiating hoarding and non-hoarding cases (Kellman-MacFarlane et al., 2019). Cronbach’s alpha for the SI-R acquisition subscale in the present study was .89.
Material Value Scale-9 (MVS-9; Richins, 2004)

This is a short form version of the Material Value Scale, which was originally 18 items (Richins & Dawson, 1992). The MVS-18 was later replaced by a more psychometrically sound 15-item measure and 9-item scale. The 9-item measure is recommended when researchers are interested in measuring materialism at a general level, whereas the original, longer version is used if the researcher is interested in the three facets of materialism (centrality, happiness, and success). Based on the current research questions, the MVS-9 seems to be an appropriate choice. A 7-point Likert-type scale was used for participant responses, with higher scores indicating stronger materialistic values. The MVS-9 has good internal consistency and good convergent and divergent validity (Richins, 2004). Internal consistency in the present study was .82.

Status Seeking Q-sort

Because social desirability can influence self-report of status-seeking motivations (Kim & Pettit, 2009), traditional Likert-type scale measures are suboptimal to measure this construct. Larson et al. (2019) recommends several methods to reduce social desirability bias, including using the Q-sort method, which has demonstrated resistance against socially desirable response styles (e.g., Fluckinger, 2014). The basic procedure involves asking participants to sort words or statements into a predetermined quasi-normal distribution ranging from statements that are strongly uncharacteristic of the individual to statements that are strongly characteristic of the individual. Thus, this measure goes beyond typical Likert-scale measures, as respondents are forced to use the entire range of items and prevents persistent extreme responding styles (i.e., respondents can only give extreme ratings to a limited number of items). The ipsative nature of the task promotes careful consideration of each statement.
Items used in a Q-sort are often drawn from items in Likert-scale measures that tap into relevant constructs (Fluckinger, 2014). Within the current study, item development began with a large pool of statements from relevant status-seeking measures. Similar to other studies that have utilized the Q-sort, members of our research group (who are very familiar with excessive acquisition) selected items that seemed most suitable for the Q-sort method (Ramlo, 2008), resulting in a pool of 30 items that were presented to participants. As a first step in data analysis, all 30 items were submitted to an exploratory factor analysis (allowing for correlated factors) to reduce the number of variables included in the main analyses. This factor analysis identified three factors that reflected conceptually important aspects of the status-seeking motive. An exploratory non-constrained analysis suggested three factors, which was followed by a constrained analysis of three factors, which yielded nearly identical results. Table 3 shows the constrained-factors results. Items were considered to be part of a factor when factor loadings were at least 0.395 and no substantial (> .30) cross-loadings were evident. The three factors were labeled as Reputation Preservation (nine items), Competitive Orientation (six items), and Sufficient Status (four items). Table 3 also shows the zero-order correlations between each Q-sort item and the SI-R acquisition subscale.

**Table 3**

*Factor Loadings for Oblimin Rotated Three-Factor Solution for Q-sort items, as well as Correlations with SI-R acquisition (N = 220)*

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Reputation Preservation</th>
<th>Competitive Orientation</th>
<th>Sufficient Status</th>
<th>SI-R Acquisition</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Win or lose, people accept me anyway</td>
<td>.73</td>
<td>- .10</td>
<td>-.04</td>
<td>-.24</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>If I make mistakes, I know other people will still like me (R)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.65</td>
<td>.06</td>
<td>-.02</td>
<td>-.26</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Factor Loading</td>
<td>SI-R Acquisition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reputation Preservation</td>
<td>Competitive Orientation</td>
<td>Sufficient Status</td>
<td>$r$</td>
<td>$p$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If I fail at something, I know others will help me try again (R)</td>
<td>.62</td>
<td>-.02</td>
<td>-.08</td>
<td>-.19</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>I don’t feel under pressure to prove myself to others (R)</td>
<td>.52</td>
<td>.11</td>
<td>.13</td>
<td>-.11</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>I struggled to achieve things so that other people will not look down on me</td>
<td>.48</td>
<td>.04</td>
<td>-.20</td>
<td>.23</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>I worry about failure because it means I can’t keep up and compete with others</td>
<td>.47</td>
<td>-.01</td>
<td>-.13</td>
<td>.09</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>To be valued by others, I have to strive to succeed</td>
<td>.47</td>
<td>.10</td>
<td>.04</td>
<td>.10</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Acceptance is something I have to earn and compete with others for</td>
<td>.46</td>
<td>.01</td>
<td>.01</td>
<td>.11</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>If I don’t strive to achieve, I’ll be seen as inferior to other people</td>
<td>.44</td>
<td>-.23</td>
<td>.10</td>
<td>.17</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>I do not care about status (R)</td>
<td>.15</td>
<td>.63</td>
<td>.05</td>
<td>-.14</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>I actively strive for status</td>
<td>.14</td>
<td>.61</td>
<td>.13</td>
<td>.13</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>I dislike being the centre of attention (R)</td>
<td>-.05</td>
<td>.61</td>
<td>.13</td>
<td>-.09</td>
<td>.09</td>
<td></td>
</tr>
<tr>
<td>I pursue status</td>
<td>.08</td>
<td>.60</td>
<td>-.04</td>
<td>.11</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>I would like an important job where people looked up to me</td>
<td>-.10</td>
<td>.45</td>
<td>.17</td>
<td>.07</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>Life is a competition for me</td>
<td>.27</td>
<td>.41</td>
<td>-.13</td>
<td>.03</td>
<td>.33</td>
<td></td>
</tr>
<tr>
<td>I do not desire a higher social status</td>
<td>.04</td>
<td>.01</td>
<td>.67</td>
<td>.03</td>
<td>.33</td>
<td></td>
</tr>
<tr>
<td>I am not motivated to have higher prestige</td>
<td>-.06</td>
<td>.10</td>
<td>.59</td>
<td>.08</td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td>I do not feel motivated to compete</td>
<td>.02</td>
<td>.13</td>
<td>.49</td>
<td>.08</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>I don’t have to succeed to prove myself to others</td>
<td>.10</td>
<td>.05</td>
<td>.46</td>
<td>-.07</td>
<td>.14</td>
<td></td>
</tr>
</tbody>
</table>

*Note. SI-R is the Saving Inventory – Revised. (R) denotes reverse-scored items. $p$-values reflect one-tailed tests.*
**Fundamental Social Motives Inventory (FSMI; Neel et al., 2016)**

This self-report inventory includes 11 subscales, including Self-Protection, Disease Avoidance, Affiliation (Group), Affiliation (Exclusion Concern), Affiliation (Independence), Status, Mate Seeking, Mate Retention (General), Mate Retention (Breakup Concern), Kin Care (Family), and Kin Care (Children). Following Neel et al.’s recommendations, participants did not complete the Kin care (Child) or Mate Retention (Breakup Concern) subscales if they did not have children or romantic partners, respectively. The FSMI has demonstrated good internal consistency (Cronbach’s alpha = .71 to .95 in the current study) and good convergent and divergent validity. Within the current study, only 52% of the sample completed the Mate Retention (Breakup Concern) subscale. Accordingly, this subscale was excluded from main analyses, but supplementary analyses involving this subscale are included in a separate section.

**Center for Epidemiological Studies of Depression Short Form-10 (Björgvinsson et al., 2013)**

On this 10-item scale, participants report frequency of depression symptoms over the past week on a 4-point scale from 0 (rarely or none of the time) to 3 (most or all of the time). This widely-used measure has strong psychometric properties, with good internal consistency (Cronbach’s alpha in the present study = .69) and good divergent/convergent validity (Björgvinsson et al., 2013).

**Procedure**

**Online screening**

Study recruitment occurred between August 2021 and April 2022. Prospective participants completed an online screening form in which they answered questions about their age and English proficiency. Some of the compulsive buying symptom participants were recruited via the UBC HSP system. Pre-screening for the UBC HSP system compulsive buying
participants included four questions: 1. How hard is it for you to stop thinking about buying things? (1 = easy for me, 5 = extremely difficult); 2. How often do you buy more things than you need or than you can afford? (1 = never, 5 = very frequently); 3. How often do you experience financial problems or conflict with loved ones because of how much stuff you bring home? (1 = never, 5 = very frequently); 4. If you buy more than you need or than you can afford, how long has this been going on? (1 = I don’t buy more than I need/can afford, 5 = a year or longer). These questions were designed for this study and are based on an expert consensus study that identified essential symptoms of compulsive buying (Müller et al., 2021). Participants who met the inclusion criteria (i.e., at least 19 years of age, individuals could read comfortably in English, and responded at least four or higher to each question) received a link to complete the Q-sort and self-report measures.

For the compulsive buying symptom participants who were recruited from the community and all potential hoarding symptom participants, these same excessive acquisition screener questions were used in a more conversational fashion during a phone screen. As long as responses were equivalent to a four or higher on the Likert-type scale above, community participants who struggled with excessive acquisition symptoms received access to the study information and an opportunity to sign up for the study.

All participants recruited for the symptom groups were also asked a series of hoarding symptom questions: 1. Do you experience more difficulty discarding things than other people do? 2. Is your home cluttered with a large number of possessions? 3. Does clutter get in the way of using one or more rooms in your home? 4. Do you and your family or other people living in your home experience distress or conflict due to clutter or difficulty getting rid of things? If participants responded “yes” to each of these questions and could provide examples that were
consistent with hoarding disorder, then participants were categorized into the hoarding symptom group, and were sent a link to participate in the study.

For the healthy acquiring groups, both Prolific Academic and a university HSP were utilized to recruit a wide range of ages. HSP participants were required to be aged 19 or older. Prolific Academic was used to recruit midlife adults, as this is the typical age range for hoarding research samples. The Prolific prescreen filter stipulated that participants must be 38 years old or older and fluent in English. Participants who scored above the clinical cut-offs for the SI-R Acquisition and SI-R Clutter were removed from the healthy acquiring group for analyses.

**Telephone screening**

In a screening phone call, participants who called the lab or who were contacted by the researchers (i.e., members of the Hoarding Research Registry) were asked about excessive acquisition symptoms, age, and about their English fluency. Participants who met the eligibility criteria received a link to the study.

**Self-report measures and Q-sort**

Participants completed online demographic questions (i.e., age, gender), self-report measures (i.e., social motivations, materialism, excessive acquisition symptoms, depression symptoms) and the Q-sort task for status seeking. The order of the self-report measures and the Q-sort task was counterbalanced.

As recommended by Huang et al. (2014), effort questions were added to ensure participants were paying careful attention to the study. The following attention check questions were used: “Please choose sometimes”, “Please leave this question blank”, “Please choose strongly agree”, and for the Q-sort task, one of the cards had instructions to place a square in a specific location on the distribution. If participants answered more than one attention check
question incorrectly or answered the Q-sort attention check incorrectly, their data were excluded from analyses.

Data Analysis

The analysis plan examined the extent to which materialism and social motivations predicted excessive acquisition, after controlling for depression and age. Furthermore, I also investigated how well these factors predicted hoarding symptoms. Data were analyzed with Pearson correlations, multiple regression, and logistic regression. For the Q-sort data, subscales were calculated as the sum of items on each of the three factors identified in the factor analysis detailed above.

Sample size was determined based on the main analytic approaches for this study and previous work on how sample size relates to stable correlations. An a priori power analysis was conducted to estimate the needed sample size for adequate power. The effect size chosen for the power analysis was derived from two previous studies that used self-report measures to predict self-reported excessive acquisition ($f^2 = .27$ to .42; Rose & Segrist, 2014; Yoshino et al., 2021). Thus, power analysis ($f^2 = .27$, $\alpha = .05$, power = .80, 7 predictors) suggested 61 participants were needed for the regression analyses. However, Schönbrodt and Perugini (2013) recommend approximately 200 participants to maximize accuracy of effect size estimates. Thus, this study aimed to recruit 200 participants.

Results

Statistics and Data Analysis

The subsequent sections will present data analyses for each research question, both preliminary (when necessary) and main analyses. All variables met the assumptions for each analytical approach. The meta-analysis in Chapter 2 showed that materialism and compulsive
buying symptoms are consistently moderately correlated, with little variability across studies, with a raw correlation of \( r = .45, 95\% \text{ CI} [.42, .48] \) and, corrected for measurement reliability, \( r = .55, 95\% \text{ CI} [.51, .59] \). Is the story of materialism and excessive acquisition the same when the acquiring occurs in the context of hoarding and in healthy acquiring groups? The next section attempts to answer that question.

**Question 1: Materialism and Excessive Acquisition Correlations Across Groups**

*How strongly are materialism and excessive acquisition correlated for people with hoarding symptoms? How does that compare to people with compulsive buying symptoms and healthy acquirers?*

To understand the degree to which materialism and excessive acquisition relate, separate Pearson correlations were computed between the SI-R acquisition subscale and MVS-9 scores for each group (i.e., hoarding symptoms, compulsive buying symptoms, and healthy acquirers). See Table 3 for means and standard deviations. For participants within the hoarding symptom group, materialism and excessive acquisition were positively correlated, \( r = .57, 95\% \text{ CI} [.37, .76] \). Looking to the compulsive buying symptom group, the correlation was \( r = .34, 95\% \text{ CI} [.09, .59] \). As expected, materialism and excessive acquisition were also positively correlated in the healthy acquiring group, \( r = .36, 95\% \text{ CI} [.20, .52] \). The 95% CIs within each symptom group all overlap, and the 95% CIs are quite wide for the relation between acquisition and materialism for all three groups.

A Fisher’s \( r \) to \( z \) transformation was used to test for significant differences between these correlations. When comparing the materialism and acquisition correlation coefficients for the hoarding symptom group versus the healthy acquirers, the difference was marginally significant, Fisher’s \( z = 1.63, p = .05 \). The coefficients were more similar for the hoarding and compulsive
buying symptom groups, Fisher’s $z = 1.42$, $p = .08$, and the compulsive buying and healthy control groups were clearly not different, Fisher’s $z = -.05$, $p = .48$. These findings hint that the relation between materialism and acquisition may be stronger in the hoarding symptom group than the healthy acquiring group, but the 95% CIs overlap substantially; any differences appear to be weak at best.

To further test the degree to which materialism and excessive acquisition relate to one another distinctly among the groups, a moderator analysis was also conducted using two multiple regression analyses.

The first moderator analysis evaluated if the strength of the relation between materialism and excessive acquisition depended on whether the participant was in an excessive acquiring group (either the compulsive buying symptom or the hoarding symptom group) or the healthy acquiring group. The data ($N = 220$) were submitted to a multiple regression, with excessive acquisition (SI-R Acquisition) as the dependent variable. The predictor variables were materialism (MVS-9 mean centred), group (0 = healthy acquiring group, 1 = hoarding symptom or compulsive buying symptom group), and an interaction term for materialism and group. At least one of these variables significantly predicted SI-R acquisition, $F(3, 216) = 94.56$, Adj$R^2 = .56$, $p < .001$. The results indicate that materialism, $B = 0.32$, and being in the acquiring group, $B = 0.61$, were uniquely and positively correlated with excessive acquisition, $ps < .001$. On the other hand, no significant interaction was found, $B = -0.02$, $p = .77$, suggesting that the relation between materialism and excessive acquisition was not significantly different for those in the acquiring or healthy acquiring groups.

The second moderator analysis tested to what degree being in the hoarding symptom group or compulsive buying group strengthened the relation between materialism and excessive
acquisition. Again, a multiple regression was completed \((n = 101)\) with SI-R Acquisition as the dependent variable. The predictor variables were materialism (MVS-9, mean centred), group \((0 = \text{compulsive buying symptom}, 1 = \text{hoarding symptom group})\), and an interaction term for materialism and group. At least one of these variables significantly predicted SI-R acquisition, \(F(3, 97) = 11.73, \text{Adj}R^2 = .24, p < .001\). The results indicate that materialism, \(B = 0.42\), and being in the hoarding symptom group, \(B = 0.23\), were uniquely and positively correlated with excessive acquisition, \(ps < .03\). In contrast, no significant interaction was found, \(B = 0.10, p = .59\), suggesting that the relation between materialism and excessive acquisition was not significantly different for those in the compulsive buying symptom and the hoarding symptom groups.

Taking a different perspective, can social motivations and materialism help distinguish between people who engage in excessive acquiring (i.e., hoarding symptom and compulsive buying symptom groups) from people in the healthy acquiring group? The next set of analyses will explore this possibility.

**Question 2a. Comparing Excessive Acquiring With Healthy Acquiring Groups**

*Do people who excessively acquire endorse higher levels of materialism and social motivations compared with people who do not excessively acquire?*

To address this research question, preliminary analyses were conducted to minimize the number of predictors that would be included in the main analyses. The steps for this process will be outlined below.

**Data Reduction.** To reduce the number of variables carried forward to the main analyses, correlates of SI-R acquisition subscale scores were identified first. Next, these
Correlates underwent additional preliminary analyses (which depended on each research question being asked), which identified predictors to be included in main analyses.

**Correlates of Excessive Acquisition.** Correlational analyses were conducted between potential predictor variables and SI-R acquisition subscale scores. *A priori* criteria for including a predictor in the main analyses were $r > .19$ and $p < .05$ between the predictor and SI-R acquisition. This effect size was chosen based on Ferguson’s (2016) Recommended Practically Minimum Effect Size (RPME), which represents a practically meaningful effect for social science data. See Table 4 for correlation results. Based on these criteria, the following predictor variables were identified for inclusion in the main analyses: materialism (MVS-9) and social motivations of Self-Protection, Affiliation (Exclusion Concern), and Status. Depression symptoms (CES-D) and age were included in the main analyses because both variables show significant differences between groups, as can be seen in Table 2. At this point, six predictor variables have been identified for consideration.

**Table 4**

*Correlations Between SI-R Acquisition and Social Value/Social Motivations and Control Variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>SI-R Acquisition</th>
<th>$p$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Value Scale – 9</td>
<td>.48</td>
<td>&lt;.001</td>
<td>220</td>
</tr>
<tr>
<td>Fundamental Social Motives Inventory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Protection</td>
<td>.21</td>
<td>.002</td>
<td>220</td>
</tr>
<tr>
<td>Disease Avoidance</td>
<td>.15</td>
<td>.02</td>
<td>220</td>
</tr>
<tr>
<td>Affiliation (Group)</td>
<td>-.04</td>
<td>.28</td>
<td>220</td>
</tr>
<tr>
<td>Affiliation (Exclusion Concern)</td>
<td>.29</td>
<td>&lt;.001</td>
<td>220</td>
</tr>
</tbody>
</table>
Unique FSMI Subscale Predictors for SI-R Acquisition. Three FSMI subscales – Self-Protection, Affiliation (Exclusion Concern), and Status – were flagged in the above analyses as possible predictor variables to carry forward in the main analyses. To further reduce the number of predictor variables included in the main analysis, I conducted a multiple regression analysis to identify which of these three FSMI subscales are *unique* predictors of acquisition (SI-R acquisition) and should be included in the main analyses. As expected from the results in Table 4, the three FSMI subscales significantly predicted SI-R acquisition scores, \( F(3, 216) = 9.65, p < .001, R^2 = .11 \). The \( B \) coefficients, presented in Table 5, suggest that only Affiliation (Exclusion Concern)
Concern) is a unique predictor of SI-R acquisition responses, so only this FSMI subscale was included in the main analysis. The intercorrelations among the identified predictor variables going forward in the main analyses are included in Table 6.

**Table 5**

*Simultaneous Multiple Regression for FSMI Subscales Predicting Acquisition (N = 220)*

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>B [95% CI]</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSMI Affiliation (Exclusion Concern)</td>
<td>0.24 [0.10, 0.32]</td>
<td>3.65</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>FSMI Status</td>
<td>0.12 [-0.02, 0.22]</td>
<td>1.70</td>
<td>.09</td>
</tr>
<tr>
<td>FSMI Self-Protection</td>
<td>0.12 [-0.16, 0.22]</td>
<td>1.71</td>
<td>.09</td>
</tr>
</tbody>
</table>

**Table 6**

*Pearson Correlations Among Predictor Variables in Main Analyses (N = 220)*

<table>
<thead>
<tr>
<th>Material Values Scale - 9</th>
<th>FSMI Affiliation (Exclusion Concern)</th>
<th>Q-sort Reputation Preservation</th>
<th>CES-D</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSMI Affiliation (Exclusion Concern)</td>
<td>.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q-sort Reputation Preservation</td>
<td>.29</td>
<td>.34</td>
<td></td>
</tr>
<tr>
<td>CES-D</td>
<td>.14</td>
<td>.41</td>
<td>.33</td>
</tr>
<tr>
<td>Age</td>
<td>-.12</td>
<td>-.19</td>
<td>-.15</td>
</tr>
</tbody>
</table>

*Note.* Correlations greater than .11 were significant at p < .05. CES-D = Center for Epidemiological Studies - Depression scale

**Main Analysis**

A logistic regression was completed to evaluate how well the five predictor variables predicted membership in the excessive acquiring (i.e., compulsive buying symptom and hoarding symptom groups) versus the healthy acquiring group. The five predictor variables, social
motivations (both the Q-sort Reputation Preservation subscale and the FSMI Affiliation (Exclusion Concern) subscale), materialism (MVS-9), depression (CES-D), and age, significantly predicted group membership, \( \chi^2(5) = 82.37 \), Nagelkerke \( R^2 = .40 \), \( p < .001 \). The first two columns of Table 7 present the odds ratios for this analysis. The analysis suggests that materialistic values, depression, and higher age differentiate the acquiring groups from healthy controls, but concerns about reputation preservation or social exclusion do not.

**Table 7**

*Predictors of Group Membership and SI-R Acquisition Subscale Scores*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Healthy vs. Acquiring Symptoms (N = 220)</th>
<th>Compulsive Buying vs. Hoarding (N = 101)</th>
<th>SI-R Acquisition (N = 220)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q-sort Reputation Preservation</td>
<td>1.00 [0.96, 1.04]</td>
<td>1.05 [0.98, 1.12]</td>
<td>0.01 [-0.08, 0.10]</td>
</tr>
<tr>
<td>FSMI Exclusion</td>
<td>1.06 [1.00, 1.12]</td>
<td>1.02 [0.94, 1.11]</td>
<td>0.06 [-0.05, 0.15]</td>
</tr>
<tr>
<td>Materialism</td>
<td>1.09 [1.04, 1.14]</td>
<td>1.00 [0.93, 1.06]</td>
<td>0.44 [0.25, 0.42]</td>
</tr>
<tr>
<td>Depression</td>
<td>1.23 [1.14, 1.34]</td>
<td>0.97 [0.87, 1.09]</td>
<td>0.37 [0.33, 0.62]</td>
</tr>
<tr>
<td>Age</td>
<td>1.05 [1.02, 1.07]</td>
<td>1.17 [1.09, 1.25]</td>
<td>0.22 [0.05, 0.14]</td>
</tr>
</tbody>
</table>

*Note.* OR is odds ratio. FSMI Exclusion is the Affiliation (Exclusion Concern) subscale of the Fundamental Social Motives Inventory, and SI-R is the Saving Inventory - Revised. Materialism was measured with the MVS-9, and depression was measured with the CES-D. The dependent variables were coded as follows: Healthy Acquisition group = 0, Symptom Groups = 1, Compulsive Buying Symptom Group = 0, Hoarding Symptom Group = 1.
Having established that materialism, depression, and age distinguish healthy acquirers from those with excessive acquisition problems, the next step was to test whether social motivations and values distinguish hoarding from compulsive buying.

**Question 2b: Predicting Compulsive Buying Symptom or Hoarding Symptom Group**

**Membership**

Among excessive acquirers, do materialism and social motivations differentiate those with and without hoarding symptoms?

Logistic regression suggested that the two symptom groups could be differentiated based on at least one of the five predictor variables: Q-sort Reputation Preservation subscale, FSMI Affiliation (Exclusion Concern) subscale, materialism (MVS-9), depression (CES-D), and age, \( \chi^2(5) = 57.95, R^2 = .58, p < .001 \). See the second two columns of Table 7 for odds ratios. Only age differentiated the two groups, with hoarding symptom participants being older than the compulsive buying symptom participants (consistent with samples in previous research). Social motivations and materialism did not differentially predict membership in the compulsive buying or hoarding group.

Having explored social motivations and materialistic values in relation to symptom groups, the next step was to conduct a continuous analysis into how much social motivations/values are associated with a full range of acquisition behaviours.

**Question 3: Correlates of excessive acquiriing behaviour**

How well do social motivations correlate with excessive acquisition when accounting for materialism?

Multiple regression was conducted to specify the best linear combination of materialism (MVS-9), social motivations (Q-sort Reputation Preservation, FSMI Affiliation (Exclusion...
Concern), age, and depression (CES-D) for predicting excessive acquisition severity (SI-R Acquisition subscale). At least one of these variables significantly predicted SI-R acquisition, $F(5, 214) = 31.57$, Adj$R^2 = .43$, $p < .001$. As shown in the final two columns of Table 7, materialism, depression, and older age uniquely predicted self-reported excessive acquisition. On the other hand, concerns over social exclusion and reputation preservation were not significantly predictive of excessive acquisition. For correlations between MVS-9, social motivations, and control variables, see Table 8.

Table 8

Correlations Between Materialism and Social Motivations

<table>
<thead>
<tr>
<th></th>
<th>MVS-9</th>
<th>$p$</th>
<th>$n$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fundamental Social Motives Inventory</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Protection</td>
<td>.23</td>
<td>&lt;.001</td>
<td>220</td>
</tr>
<tr>
<td>Disease Avoidance</td>
<td>.12</td>
<td>.04</td>
<td>220</td>
</tr>
<tr>
<td>Affiliation (Group)</td>
<td>.003</td>
<td>.48</td>
<td>220</td>
</tr>
<tr>
<td>Affiliation (Exclusion Concern)</td>
<td>.28</td>
<td>&lt;.001</td>
<td>220</td>
</tr>
<tr>
<td>Affiliation (Independence)</td>
<td>.11</td>
<td>.05</td>
<td>220</td>
</tr>
<tr>
<td>Status</td>
<td>.41</td>
<td>&lt;.001</td>
<td>220</td>
</tr>
<tr>
<td>Mate Seeking</td>
<td>.17</td>
<td>.01</td>
<td>220</td>
</tr>
<tr>
<td>Mate Retention (General)</td>
<td>-.21</td>
<td>.41</td>
<td>114</td>
</tr>
<tr>
<td>Mate Retention (Breakup Concern)</td>
<td>.29</td>
<td>&lt;.001</td>
<td>114</td>
</tr>
<tr>
<td>Kin Care (Family)</td>
<td>-.03</td>
<td>.34</td>
<td>220</td>
</tr>
<tr>
<td>Kin Care (Children)</td>
<td>-.22</td>
<td>.051</td>
<td>57</td>
</tr>
<tr>
<td><strong>Status Seeking Q-sort</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reputation Preservation</td>
<td>.28</td>
<td>&lt;.001</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>MVS-9</td>
<td>p</td>
<td>n</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------</td>
<td>-------</td>
<td>----</td>
</tr>
<tr>
<td>Competitive Orientation</td>
<td>.44</td>
<td>&lt;.001</td>
<td>220</td>
</tr>
<tr>
<td>Sufficient Status</td>
<td>-.14</td>
<td>.02</td>
<td>220</td>
</tr>
</tbody>
</table>

*Note.* MVS-9 is the Material Value Scale-9. Sample sizes vary because some subscales of the Fundamental Social Motives Inventory are only completed if the content is relevant for participants. *p*-values reflect one-tailed tests.

**Supplemental Analysis: Mate Retention**

The FSMI Mate Retention (Breakup Concern) subscale was also of interest in this study. Mate Retention (Breakup Concern) was a significant correlate for SI-R acquisition, *r* = .35, which means it would have been chosen as a predictor variable going forward in the main analyses. However, only 52% of study participants identified being in a romantic relationship and therefore completed this subscale, a proportion that did not differ across groups, $\chi^2(1) < .02$ ps > .92. To ensure I did not miss any important findings related to the social motivation Mate Retention (Breakup Concern), all main regression analyses were repeated with the Mate Retention (Breakup Concern) subscale included as a predictor. This variable was not a significant predictor in any of the analyses, $B = .07$, ORs = 0.99 - 1.04, ps > .05, suggesting that concerns over retaining a mate were not a unique motivator of excessive acquisition above and beyond the other predictor variables.

**Discussion**

The current study was motivated by the question of how acquiring in hoarding is similar or different to other types of excessive acquiring. Data were collected from participants who struggle with hoarding symptoms, those who struggle with compulsive buying symptoms, and people who reported not experiencing problems related to acquisition (i.e., healthy acquiring
group). First, this study sought to compare how strongly materialism and excessive acquisition correlated across the three participant groups. Materialism and excessive acquisition were moderately to strongly correlated in each of the three groups. Moreover, the relation between materialism and excessive acquisition was not moderated by membership to any of the groups. Although the main interest of this study was to examine whether social motives could contribute to excessive acquisition, none of these factors emerged as a significant unique predictor of excessive acquiring behaviour or symptom group when controlling for materialism, depression, and age. Rather, materialism, depression, and age were positively related to excessive acquisition, both when measured continuously and when examined categorically as membership in one of the excessive acquiring groups (i.e., compulsive buying symptom or hoarding symptom group) compared to the healthy acquiring group. The two symptom groups did not differ on social motivations, depression, or, for the most part, materialism. The results and implications will be discussed in additional detail below.

Chapter 2 established that materialism was correlated with compulsive buying symptoms; the next step was to learn how strongly materialism related to excessive acquisition and to test whether this relation is similar in magnitude for those who struggle with hoarding, compulsive buying, or neither. Consistent with the meta-analysis in Chapter 2, the current study revealed moderate correlations for participants in the compulsive buying symptom and healthy acquiring groups. Interestingly, for the hoarding symptom group, the correlation was strong between materialism and excessive acquisition. When considering the 95% CI for each of these correlations, the ranges were wide and they all overlapped, suggesting no distinct differences between groups. However, Fisher’s z-tests hinted that materialism and excessive acquisition are more strongly related in the hoarding symptom group than the other two groups, with
compulsive buying symptom and healthy acquiring looking much the same. Further regression analyses revealed no significant interaction effects, meaning the relation between materialism and excessive acquisition was not significantly different across the groups. Thus, the relation between materialism and excessive acquisition was also not significantly or meaningfully different for people who have problems with acquiring than for people who do not have problems with acquiring; the same can be said for people with hoarding problems and people with excessive acquisition but no hoarding.

Materialism and excessive acquisition are significantly correlated, and this finding was replicated in three samples within the current study. This supports previous findings that materialism is related to compulsive buying in the context of healthy adults and compulsive buying symptoms. Moreover, these correlations reveal that materialism and excessive acquisition are also significantly related in the presence of hoarding symptoms, which to the best of my knowledge, is the first time this has been found. Indeed, materialism was correlated with excessive acquisition for hoarding symptom participants, \( r = .57 \), and higher scores on the materialism measure predicted membership in one of the excessive acquisition groups (OR = 1.09), which included both hoarding symptom and compulsive buying participants. These findings indicate that materialism applies not just to compulsive buying, but to hoarding, as well.

Notably, these regression analyses suggest that members of the hoarding symptom group had higher excessive acquisition scores than members of the compulsive buying symptom group. In Table 2, excessive acquisition was not significantly different between the compulsive buying symptom and compulsive buying symptom group. The follow-up multiple regression accounted for materialism, which may have decreased the error variance involved in the analyses in the
ANOVAs for Table 2. Thus, excessive acquisition does seem to be higher in the hoarding symptom group than the compulsive buying symptom, though the effect size is weak ($d = 0.28$).

Furthermore, materialism was a significant predictor of excessive acquisition even when accounting for depression, age, concerns of being socially excluded, and concerns about preserving status. On average, every one-point increase on the materialism measure corresponded to a SI-R acquisition subscale score that was 0.44 points higher and a 9% greater chance of being in one of the excessive acquisition groups (hoarding symptom or compulsive buying) rather than the healthy acquiring group. Despite this connection between materialism and acquiring, materialism has taken center stage in compulsive buying and has been an afterthought in hoarding research. One other study found a correlation between materialism and SI-R acquisition (Frost et al., 2007) in an adult community sample, but the researchers did not examine other candidates that could account for relations between materialism and excessive acquisition (e.g., depression). Another study found materialism scores were correlated with hoarding symptoms generally (i.e., SI-R total, $r = .25$), but this relationship was no longer significant when accounting for depression and identity confusion (Claes et al., 2016). However, Claes et al. used a materialism measure that was classified as not psychometrically ready for research by the creators of the measure (Richins, 2004), making it difficult to interpret these results. Claes et al., 2016 also looked at hoarding symptoms generally, and not acquisition specifically, which is the symptom that seems most theoretically connected to materialism.

The finding that materialism is a unique correlate of excessive acquisition (which can include both free and purchased items) is novel, and materialism could be more carefully considered in etiological models of hoarding. Moreover, some aspects of materialism are already articulated in conceptual models of hoarding, but this specific term is not used. For example,
researchers in hoarding do acknowledge that objects are a source of self-worth (i.e., what one owns says something about the person, and belongings are important to the owners). Moving forward, actually using the term materialism within hoarding may help draw similarities between acquiring in hoarding and other types of acquisition (e.g., compulsive buying). Moreover, the materialism literature is vast and could provide inspiration for future studies in hoarding, as well. Focusing future research on how malleable materialism is would provide a fresh take on treatment approaches for both hoarding and compulsive buying.

Depression is common among people who compulsively buy (e.g., 50%; Müller et al., 2010) and those who hoard (53%; Grisham et al., 2010). In this study, every additional point on the CES-D corresponded to an average increase of 0.37 points on the SI-R acquisition subscale and a 23% greater risk of being in one of the excessive acquisition groups rather than the healthy acquiring group. Shopping can often be seen as a mood-boosting activity, so low mood could potentially lead to purchasing behaviours to alleviate depression symptoms, at least temporarily. Indeed, Kyrios and colleagues (2004) identified common beliefs within compulsive buying, with one being that buying objects is a way to evoke pleasant emotions. Supporting this line of thinking, in a sample of women who scored high on a compulsive buying measure, Miltenberger and colleagues (2003) found that participants recalled negative emotions (e.g., sadness) before shopping episodes, then feelings of relief, happiness, or calm during buying episodes, and afterwards, many participants recalled feeling guilty and depressed. These same participants then self-monitored their emotions during shopping episodes, and this emotional trajectory was consistent with how they recalled past shopping episodes. Other studies have observed similar patterns before, during, and after buying episodes in compulsive buying samples (Christenson et
al., 1994). These findings suggest that depression or low mood may both be an antecedent and consequence of excessive acquisition.

Age was also a unique correlate for excessive acquisition in the current study. With each additional year of age, SI-R Acquisition subscale scores on average increased by 0.22 and participants were at 5% increased risk of being in a symptom group rather than the healthy acquiring group. Note that these effect sizes are small. Some explanations for this relation could be due to how consequences of excessive acquisition unfold over time. These consequences may be more obvious as time goes on (e.g., growing debt, poor credit scores, stuff piling up in the home), which could result in more conflicts with loved ones, and thus, more external pressures to acknowledge and get help for acquiring. Another explanation is that over time, people may become desensitized to the stress of maxing out credit cards, receiving overdue bills, and complaints from loved ones about their buying. One study showed that continued exposure to aversive materials resulted in diminished negative reactions towards these same materials (Fanti, Vanman, Henrich, Avraamides, 2009). Thus, acquiring may get even more out of control if the consequences of excessive acquisition become more “normal” and less of a deterrent in the long run.

If older adults have a greater chance of experiencing excessive acquisition, why did the older hoarding symptom and younger compulsive buying symptom group look so similar for SIR-acquisition? When inspecting age and excessive acquisition data closely, the hoarding symptom group was older than the compulsive buying group (see Table 2), and no significant differences were found between the two symptom groups for excessive acquisition (SI-R Acquisition subscale scores). Some clues to help understand these results is that both symptom groups have similar struggles with excessive acquisition, but the older hoarding group reported
higher clutter levels than the younger compulsive buying group (see Table 2). When these individuals present for research or for treatment, younger adults may identify compulsive buying to be their main concern, whereas older adults tend to see their clutter as the biggest concern, or at least their loved ones do (even though acquisition is still a present problem). In other words, this could be a matter of perception, where the younger age group of excessive acquirers (i.e., compulsive buying symptom group) may perceive their acquiring to be a pressing concern, whereas the older group (i.e., hoarding symptom group) perceive their clutter to be most problematic, even though acquiring problems are present too.

Concerns over being socially excluded and preserving status were related to excessive acquisition, but surprisingly, this relation was no longer significant when taking into account age, depression, and materialism. At the outset of this study, it was hypothesized that acquiring may be a way to meet social motivations – objects can signal status and expertise to others and enhance affiliation within a group. The consumer literature also provides numerous examples of social factors being related to buying decisions (e.g., Harnish & Bridges, 2015; Kukar-Kinney et al., 2016; Roberts et al., 2008). Moreover, many western advertisements rely heavily on this notion to encourage consumer behaviour. These unexpected results for these two social motivations could have several explanations.

Depression or low mood was a stronger correlate for excessive acquisition than concerns over being excluded and wanting to preserve status. Depression was uniquely related to excessive acquisition after accounting for age, materialism, concerns about being socially excluded, and concerns over preserving one’s status. Moreover, depression symptoms were moderately correlated with FSMI Affiliation (Exclusion Concern), $r = .41$, and Q-sort Reputation Preservation scores, $r = .33$. When looking to how well depression correlated with other social
motivations of interest for the current study (i.e., the rest of the FSMI subscales and the Q-sort Competition Orientation and Sufficient Status subscales), all relations were weak or non-significant. This provides some clues that depression has a relatively stronger relation with these two social motivations than others, perhaps especially worries about exclusion. These correlations raise the question about directionality – does depression drive concerns about exclusion or vice versa? Much research has looked at links between depression and perceived social exclusion from others (Li, Zhao, & Yu, 2018; Niu, Shi, Yao, Yang, Jin, & Xu, 2023; Niu, Sun, Tian, Fan, & Zhou, 2016), but very little has been said about how depression and concerns about exclusion are connected. Regardless, within the current study, depression accounted for more variance in acquisition than concerns about exclusion and preserving status.

The timing of data collection for this study may be important to consider. The data were collected from 2021-2022, during the COVID-19 pandemic. During the pandemic, many people were expected to limit their in-person socializing and traveling, resulting in fewer social interactions overall. These safety measures likely impacted their social motivations. Indeed, compared to a large sample of participants (N = 1,560) who completed the FSMI (Neel et al., 2016) before the pandemic, the overall sample in the current study scored higher on the Disease Avoidance (d = 0.63) and Affiliation (Exclusion Concern; d = 0.92) subscales, but lower on the Status subscale (d = .60). Thus, pandemic-related disruptions in social networks may have influenced some of the results.

One social motive that did not show a significant correlation with excessive acquisition was Affiliation (Group). This motive is about wanting to be part of a team, to maintain group harmony, and to work collaboratively with others toward common goals. Some past studies suggest that people may acquire to help themselves fit into groups. Braun and Wicklund (1989),
for example, found that novice tennis players were more likely to acquire and wear designer tennis clothing compared to expert tennis players. In a more recent study, participants who experienced a threat to their intelligence displayed greater interest in intelligence-related items such as fountain pens (Gao, Wheeler, & Shiv, 2009). Dittmar (2004) also hypothesized that excessive acquiring may be related to the use of objects to bridge any discrepancies between their current self and ideal self. These studies suggest that people actively seek out objects that may help them fit in with others. However, the current study’s findings contradict these previous results.

The current study examined 11 social motives from the FSMI, but no measure provides an exhaustive list of all motivations, and the FSMI leaves out some social motivations that may be important to excessive acquisition. For example, the FSMI does not include power-prestige motivations (i.e., dominating other people or controlling resources). Mishra (2014) found in a sample of young software professionals and that power/prestige was significantly correlated with excessive acquisition \( r = .61 \). Within the same study, when controlling for retention time (i.e., carefully planning and monitoring one’s budget), distrust, and anxiety, power-prestige emerged as a unique predictor of compulsive buying symptoms, \( B = .62, 95\% \text{ CI} \ [0.33, 0.91] \). Thus, power-prestige is one social motivation that would be important to study in relation to excessive acquisition.

Another potential social motivation that may be relevant to excessive acquisition (especially within hoarding) would be related to preserving memories of past relationships. Some people acquire items because they belonged to someone they once knew (e.g., someone who recently died). Other objects may be acquired for nostalgic reasons, as a reminder of a meaningful relationship. For example, one client who struggled with hoarding symptoms
collected all published materials from her artist friends and felt that doing so supported them and helped their work live on. Within hoarding, saving for sentimental reasons seems common, but sentimentality has not been fully investigated when it comes to acquiring. Given that many social motives have yet to be examined with excessive acquisition, social motivations should not be ruled out prematurely as important within these populations.

Across the current study findings, something major sticks out – although compulsive buying symptom and hoarding symptom participants shared many correlates, they differed quite a bit from healthy acquiring. Materialism and more severe depression seemed to characterize the excessive acquiring groups, regardless of being grouped in the compulsive buying symptom or hoarding symptom group. These findings address a main knowledge gap in the literature – excessive acquisition in hoarding and compulsive hoarding are viewed as distinct problem behaviours (i.e., separate research fields, etiological and treatment models developed in silos for each disorder), but it is unclear that this division is justified. The source of this great divide may be because core symptoms in hoarding also include difficulty discarding and clutter, but the presence of these two factors does not definitively mean that excessive acquisition must be qualitatively different in hoarding than it is in compulsive buying. Within the current study, no clear differences were found between the compulsive buying and hoarding groups for preserving status, social exclusion concerns, depression, and to some extent, materialism. These results suggest that how excessive acquisition is understood can be generalized across different contexts, at least to a certain degree.

These study results suggest that bringing hoarding and compulsive buying research streams together would be beneficial. Collaboration between researchers who focus on compulsive buying and hoarding would be consistent with one approach that has gained momentum, called
the Research Domain Criteria (RDoC; National Institute of Mental Health, 2024). The RDoC is a research framework that examines dysfunction in psychological and biological systems rather than studying diagnostic categories. Based on the RDoC approach, if compulsive buying and hoarding research were brought together, then the problem behaviour they have in common (i.e., excessive acquisition) would be the primary focus, rather than the diagnoses themselves. This collaborative work may be an efficient path to better understanding excessive acquisition and developing improved treatment approaches.

The current study had several strengths. Data were collected from an ample sample and efforts were made to recruit participants across a wide age range for the healthy acquiring group, given the differing ages often seen in hoarding and compulsive buying samples. Participants were also carefully screened, which provides confidence that each symptom group was categorized as accurately as possible in this online study. Furthermore, status-seeking motives were measured using an alternative method rather than a Likert-type measure to decrease social desirability problems seen in previous studies. Attention check questions also helped ensure that participants made good efforts to respond to the online survey items. Researchers were also available via telephone if participants were confused about any aspects of the survey and needed guidance.

Some limitations of the current study should also be considered. The Q-sort task can be difficult to complete, especially when a participant is unfamiliar with the instructions. This difficulty was enhanced by the online nature of the study, as many participants struggled with understanding the Q-sort instructions and finishing this task. Because of the necessity of conducting this research online due to the COVID-19 pandemic, online studies were the only option in collecting study data during this time.
Another weakness to this study is related to methodology. As mentioned previously, status-seeking motives can be subject to social desirability bias, a problem that is not completely eliminated with use of the Q-sort method. Furthermore, participants were expected to self-report many other social motivations (not just status-seeking motivations), which is a difficult task. One review concluded that self-evaluations have only a modest relationship with actual performance and behaviour (Dunning et al., 2004). Thus, understanding and reporting one’s own motives can be difficult, and may not have been optimally measured in the current study.

This work can be taken in many future directions. Recall that depression scores were positively correlated with concerns about being socially excluded and that depression was a unique correlate for excessive acquisition when accounting for materialism, age, and two social motivations. Perhaps this pattern of results suggests that low mood may mediate relations between concerns about being socially excluded and excessive acquiring. To see if this pattern exists, future studies need to observe the following sequence of events: people feeling concerned about being socially excluded, an increase in depressive symptoms, and then acquiring behaviour. One way to explore this possibility is to supplement what has already been done in the literature. Mueller et al. (2011) used an Ecological Momentary Assessment (EMA) approach to assess affect before, during, and after buying episodes within a sample of compulsive buying participants. They found an increase in negative affect right before a buying episode and a decrease in negative affect immediately afterward. To better understand the role of depression in excessive acquisition, an EMA study could include reports of current social context (e.g., current affiliation with others, satisfaction with their own status, feelings of rejection or exclusion), which would support or refute if changes in social motives precede mood changes and buying episodes.
Another approach for future studies could be to experimentally activate specific social motivations (e.g., status preservation, exclusion concerns), assess mood levels, and then observe buying decisions. Mead (2011) conducted an experiment in which some participants were “rejected” prior to a buying task, while others were told their “partner left early due to an appointment”, leading to all participants completing the main study task alone. The participants who had been rejected were more likely to express they would buy items from a mock store that represented symbolic membership to a group (i.e., spirit bands) rather than a practical (e.g., stationary, coffee mug) or self-gift item (e.g., cookies, shower gel). Future studies on this topic could replicate Mead’s study procedure, but also include clinical groups that struggle with excessive acquisition and compare their buying choices to healthy acquiring groups. Creating similar studies for other social motivations (e.g., preserving memories of social relationships) would also push the field forward in terms of understanding social motivations and their role in excessive acquisition.

Additionally, investigating how social values, like materialism, are instilled and strengthened over time would build on the current study’s work and contribute strongly to building conceptual models about excessive acquisition. For example, Christopher et al. (2005) found that adults who were primed to feel supplication (i.e., helpless and in need of assistance of others) and ingratiation (i.e., wanting to be perceived as likeable) rated their materialism as significantly higher ($ds = 3.73$ to $4.61$) than controls who did not receive these primes. Christopher et al. concluded that personal insecurities may be a precursor to materialism. Though no studies have replicated Christopher et al.’s findings, these results hint at the possibility that self-report measures of materialism in other studies (including the current study) could be impacted by how people felt prior to completing materialism measures (e.g., supplication and
ingratiation). Questions still remain on the extent to which materialism is malleable (which is relevant to interventions), how long the effects of a prime last, if there any other social factors (i.e., motivations for power-prestige, status-seeking) that may enhance materialism, and if this boost in materialism leads to increased buying behaviours. Replicating this study design (priming supplication and ingratiation), including the addition of more social motives that could be primed, testing how long any effects last on materialism, and if buying decisions are subsequently impacted within clinical populations (i.e., hoarding and compulsive buying) may shed a great deal of light on materialism and excessive acquisition.

In sum, the study findings provide important first steps toward understanding vulnerability factors for excessive acquisition in multiple contexts. Materialism and depression are likely important focal points for understanding excessive acquisition and considering possible treatment options. Moreover, the results suggest that excessive acquisition has some similarities in compulsive buying and hoarding, but these groups do show differences from healthy acquiring. Continuing to explore both compulsive buying and hoarding will provide added value to developing models for excessive acquisition and improving treatment effectiveness.
Chapter 4: Discussion

Deep Dive into Materialism and Social Motivations

Materialism

Materialism, a social value, is consistently moderately correlated with excessive acquisition, an effect that shows some signs of strengthening over the past 18 years. Materialism is related to acquisition, higher materialism scores increased the chances that participants would be in one of the excessive acquiring groups compared to being in the healthy acquiring group, but materialism did not distinguish people with compulsive buying from those with hoarding. The next paragraphs will consider why materialism may be stronger for people who have problems keeping their acquiring in check.

To date, materialism has been a cornerstone for compulsive buying research, but materialism has received minimal attention in the hoarding literature. The current study results show that materialism is related to excessive acquisition for participants who struggle with hoarding symptoms. At the surface level, materialism and hoarding may not seem obviously connected. Materialism has been described as emphasizing luxury objects as a pathway for happiness and a way to signal success to oneself and others (Richins, 2004). Within hoarding, however, acquiring and saving too much stuff is often stigmatized by society and can push loved ones away (Grisham et al., 2011). However, objects are an important part of identity for some individuals, which is a basic premise of materialism according to researchers (e.g., Belk, 1984). Within hoarding, much of life revolves around one’s objects. People who struggle with hoarding disorder also have strong attachment to their objects (Yap & Grisham, 2020). Additionally, those who hoard often express that these objects are a part of them (Yap & Grisham, 2019). Thus, materialism could very well play a role within hoarding disorder.
The conceptualization of materialism has changed across time. The definition of materialism used throughout the current work is consumerist in that it reflected desires for luxury objects and beliefs that objects bring status to oneself and others (Richins, 2004). One early definition of materialism held the view that the only way people know who they are is by looking at what they own (Satre, 1943). This conceptualization speaks to how objects can help define the self. About three decades later, Ward and Wackman (1971) defined materialism as an orientation in which objects are important for social progress and happiness. Ward and Wackman’s conceptualization of materialism incorporates some social factors, where one’s social stature and happiness can be improved by owning objects. Cizkszentmihhalyi and Rochberg-Halton, 1981 (as cited in Belk, 2015) coined the term “terminal materialism”, which was described as materialism that served “grotesque” attempts to purchase human connections, as material goods can become a pathway to achieve love and friendship from others. Here, materialism is seen as a bridge for human connection.

A few years later, one popular materialism definition comes from Belk (1984), who defined materialism as a trait in which objects are an extension of the self, with three facets. These facets are: 1) possessiveness, referring to wanting control over objects and tendencies to save objects; 2) non-generosity, which involves negative views about charity and sharing objects; and 3) envy about other people’s objects and feeling sore when one does not have as much as others. Belk’s version of materialism adds element of wanting to control one’s objects through saving and keeping them away from others, while also maintaining some social context of being envious of others’ belongings. Thus, over time, all the definitions above suggest that materialism is related to identity, with social factors playing varying roles within materialism.
What could be so appealing about the act of acquiring, especially when someone cannot afford to acquire more things, when loved ones continually argue against it, or the home has run out of space? Greed has been described as an insatiable hunger for more of everything (e.g., food, clothes, money, love, information) and never feeling like one has enough (Seuntjens et al., 2015). Mercadante and Tracy (2023) hypothesized that less greedy people may acquire because they enjoy or make use of the acquired item, whereas greedy people may acquire because they want the experience of acquiring, as the feeling of acquiring makes them feel closer to their ideal self rather than the actual thing they acquired. Thus, if acquiring is related to identity fulfillment, then acquiring for greedy people should elicit pride. In a series of four studies with community adults, Mercadante and Tracy found that high scorers on a greed measure experienced higher boosts of authentic pride (i.e., pride due to specific accomplishments and goal attainments) after acquiring, which quickly faded compared to low scorers on the greed measure.

Mercadante and Tracy’s (2023) results may provide clues for why acquiring may be so appealing for people who are highly materialistic, as well as those who struggle with acquiring excessively. Greed is considered a broad term for wanting more of everything (both material and non-material), while materialism is typically seen as related to objects exclusively. Notably, Seuntjens (2015) found that greed was strongly related to materialism across four undergraduate samples (rs = .56 to .72). All the conceptualizations of materialism mentioned previously include some aspect of objects being important for self-worth, suggesting that acquiring excessively could help people feel positively about themselves or convey a positive impression to others, at least temporarily. Moreover, Mercadante and Tracy’s results hint that experiencing bursts of pride drives acquiring for people who continually want more of everything. Thus, problematic
acquiring may be rewarding because it aligns with materialistic values and could provide opportunities to feel boosts in pride.

_Social Motivations_

Turning to social motivations, a small set of social motivations were examined in terms of how they relate to excessive acquisition. Two social motivations stood out specifically. Concerns about being socially excluded and wanting to preserve one’s reputation were related to acquiring too much. However, this relation was no longer significant after controlling for materialism, depression, and age. The next paragraphs will describe what was surprising about these results and what factors may be important to investigate for future research on social motivations and acquiring.

Why did materialism account for the relations between acquiring and these two social motivations? In terms of materialism, the concept of status-seeking is folded within the study’s materialism measure, as it includes items that describe objects as a way to gauge status for oneself and others. Additionally, in a sample of children 8-11 years old, concerns about social rejection and wanting to preserve status levels were linked to materialism (Banerjee & Dittmar, 2008). Participants were asked explicitly about their endorsement of social motives (e.g., do you buy to avoid peer rejection or to gain peer favour? Do you ask your parents to buy you things so that you don’t get left out by other children? If you haven’t got the right things/clothes, will other children laugh at you?) Responses on this social motivation measure were significantly correlated with materialism, $r = .46$. Within the current study, materialism was also correlated with exclusion concerns and wanting to preserve one’s reputation, $rs = .28$ to .29. Materialism also has been consistently related to excessive acquisition throughout the current work. Taken together, these results suggest that wanting to preserve one’s reputation and concerns about
social exclusion are quite connected to materialism, so it makes sense that materialism would account for more variance in acquiring than these two social motives.

Additionally, why would depression and age account for correlations between acquiring and these two social motivations? As discussed in chapter 3, depression was significantly correlated with both wanting to preserve one’s reputation, $r = .33$, and concerns about exclusion, $r = .33$. Experiencing threats against one’s status level has also been shown to elevate physiological responses and can induce negative emotions (Smith & Jordan, 2015). Moreover, a large body of research has confirmed a link between perceived social exclusion and depression (Li et al., 2018; Niu et al., 2023; Niu, et al., 2016), but it is difficult to find studies that examine how concerns about social exclusion and depression are connected. Thus, depression does seem to be related to these two social motives, but exactly how (e.g., strength, directionality) still needs to be clarified. In terms of age, older age was related to decreased concerns about exclusion and wanting to preserve one’s status. These age results fit with Neel et al.’s (2015) findings, as these researchers found that concerns about exclusion were negatively related to age ($B = -0.27$) when controlling for the other social motivations subscales in the FSMI, sex, parental status, relationship status, childhood stability, and childhood resources. These researchers concluded that relationships are likely to become more stable over time, so exclusion concerns may become less of a priority as one ages. Along the same lines, perhaps people may be less concerned about status if they feel more comfortable in their social situation over time, as well.

What are some other reasons for why social motivations were not uniquely related to acquiring when considering other factors in the current research? The status motivations results were particularly surprising. Past research has shown that people who struggle with compulsive buying openly admit to acquiring to impress others and to elevate their status (Christenson et al.,
1994; Dittmar, 2006; Elliott, 1994; Faber & O’Guinn, 1992). One reason why status motivations (and possibly others) did not emerge as strong correlates of excessive acquisition could be related to how the data were collected for this study. The current study asked participants to self-report or complete a q-sort task on their social motivations at one moment in time, which may not provide a full picture of how one’s social motivations impact long-term persistent behaviours, like acquiring. Indeed, for many people, not every purchase may be driven by status-related motivations at all times.

Another explanation for the weak social motivations results could be related to individual differences among people who excessively acquire. For example, perhaps people who struggle with acquiring too much might have a small menu of motivations for their acquiring, with one person wanting to maintain or gain status, while another person acquires to fit in with others, and yet another person acquires to keep their love interest engaged. In this case, it would be hard to identify specific social motivations that are clearly and strongly related to excessive acquisition with the methods used in this study (e.g., regression, correlation). Rather, understanding different profiles of excessive acquiring may be one way to investigate social motivations within acquiring further. That is, an alternative methodology to understand social motivations and excessive acquisition would be to see if subsets of people with shared social motivations exist within the broader group of people who excessively acquire.

One possible approach to creating profiles of acquiring in terms of social motivations could be to use similar methods to Tinlin, Beckwith, Gregory, and Lomax (2022). These researchers used q-methodology to create profiles of hoarding disorder participants based on their beliefs about objects. Their results revealed some heterogeneity within hoarding populations and provided interesting insights on groups that exist within hoarding disorder. One
identified profile in Tinlin et al.’s study, called *stability and predictability*, was distinguished by fears of rejection, with participants in this group making statements like, “Objects won’t reject me like people do”. This profile suggests that some individuals who hoard are so afraid of rejection from people that they take comfort in the idea that this situation is impossible with objects. Another profile, *expression of identity*, was distinguished by people believing objects portrayed their identity, with participants making statements like, “My things represent who I dream of being; a better version of me”. The expression of identity profile sounds quite similar to materialism in that objects are considered extensions of the self. For future research, to understand social motivations within excessive acquisition, this q-methodological approach could be taken to better understand if a small set of social motivations are particularly relevant for subsets of people who acquire too much.

Life history theory is a framework that outlines changes in resource allocation throughout the lifespan, which might give some clues about when certain motivations are activated and why. Infants are primarily concerned with thirst, hunger, and staying warm. Eventually, children begin showing signs of fear of potentially dangerous strangers, and later, developing friendships becomes essential. Once older children establish friendships, then garnering respect from peers and mate acquisition concerns become relevant post-puberty. After successful mate acquisition takes place, then caring for offspring take priority. As an adult, a suite of social motivational systems is available and can become activated by environmental threats and opportunities, which influences cognition and behaviour in functionally specific ways (Kenrick et al., 2010). For example, the self-protection motivation, which involves keeping oneself safe from others, increases perception of anger when interpreting male outgroup members’ faces (Maner et al., 2005) while also increasing agreeableness toward ingroup
members (White et al., 2012). Accordingly, life history theory suggests that certain factors will impact which social motivations are active at what life stage, resulting in prioritized efforts to fulfill specific motivations at a given time.

Life history theory can help enhance understanding between social motivations and behaviours. Neel et al. (2015) outlined that life history trajectories in social motivation activation may be faster for people with much uncertainty in their early life experiences. For example, in environments that are unpredictable and dangerous, delaying reproductive efforts can be costly. One could die before having offspring, so mate-seeking motivations may be activated sooner in this case than others. Therefore, considering where someone is in their life stage could improve understanding of when and why some motivations are more active than others.

When certain social motivations are activated, this may kick start the activation of other social motivations, which further influences behaviour. Neel et al. (2015) found that status motivations tended to be activated alongside mate-seeking motivations. Neel et al. found that when people were motivated to find a romantic partner, they were more likely to report status-related behaviours, like starting a new job ($OR = 1.15$), even after controlling for other social motivations (nine other social motivations from the FSMI) and the Big Five personality traits. In another study, activated mate-seeking resulted in status-related behaviours, including purchasing decisions that would impress others (Griskevicius et al., 2007). Griskevicius and colleagues recruited a sample of undergraduates, who were primed to either be in a romantic frame of mind (i.e., activating their mate-seeking motivations) or who had received cues unrelated to mate-seeking. Afterward, participants were asked to make a series of hypothetical acquiring decisions. Compared to participants who did not receive the mate-seeking prime, men who received the mate-seeking prime were more willing to buy and spend more money on purchases that signaled
status (e.g., car, watch) than on purchases that were less status-signaling (e.g., basic toiletries, headache medication, bedroom alarm clock, groceries, cleaning products). These showy purchases seem consistent with how compulsive buying is typically portrayed, as people who compulsively buy tend to make purchases meant to impress others and look appealing to potential romantic partners.

In contrast, when looking to another social motive, like wanting to protect oneself from dangerous others, this motive would likely be demonstrated differently than mate seeking motives. For example, in a sample of undergraduates, participants received one of three primes: 1. The motivation to protect oneself from others (i.e., a scenario of being alone at home one night and hearing what sounds like an intruder), 2. The motivation to seeking a mate (e.g., a scenario of a romantic date), or 3. A neutral prime where the person finds a lost item (Li, Kenrick, Griskevicius, & Neuberg, 2011). Those who were primed to feel self-protective were more loss-averse, in that they weighed hypothetical financial losses more heavily than financial gains, compared to the other two groups. Notably, within compulsive buying, Kyrios et al. (2004) posited that beliefs about losing out on opportunities may be one reason why people acquire too much. Similarly, this aversion to losses resonates with hoarding, as fears about lost opportunities have been proposed as one contributor to heightened saving and acquiring behaviours in hoarding (Steketee & Frost, 2003). These studies suggest that life history theory may impact research on motivations and acquiring, such as trying to understand when certain social motivations could become activated, and how these motivations may have a stronger impact on what people choose to buy at different time points. Perhaps the current study’s results on social motivations may have looked differently if life stage (e.g., time period where someone is strongly seeking or mate or is prioritizing keeping oneself safe from others) was taken into
account, as these factors may moderate relations between social motivations and excessive acquisition.

Status seeking has also been defined in multiple ways. One conceptualization of status-seeking takes a proactive perspective. For example, status-seeking has been defined as a motive to enhance one’s status (Kim & Pettit, 2009) with the goal of achieving influence and respect from others (Anderson et al., 2001). This definition was closely aligned with the Status subscale from the FSMI (Neel et al., 2016), which was used for the current study. Status motivation can be seen from a reactive perspective; saving face is a common Asian concept that involves avoiding being publicly exposed as an underperformer or someone who is less than others (Eriksson, Mao, & Villeval, 2017). This view of status motivation suggests that some people might not be actively seeking high status, but rather, they just want to avoid being low status. For the current study’s alternative measure of status-seeking, the Status-Seeking Q-sort, many of the items from the Reputation Preservation subscale tapped into this notion of avoiding low status. Thus, status motivations may look distinct for different people, as some may focus on attaining high status, while others just do not want to be considered a low status person.

Wanting to avoid low status positions fit well with Shrestha’s (1997) thoughts about low status people within high materialistic/consumerist cultures. Shrestha expressed that people who are considered “poor” in these contexts are forced to spend their scarce and valuable resources on senseless consumer objects rather than basic necessities to avoid social humiliation. Shrestha made this conclusion on the basis of fieldwork in Nepal during which Westernization began sweeping across Nepal. Westernized retail chains started appearing, locals were being shown advertisements to start buying consumer products, and Western visitors implied that the locals’ lives would improve by embracing this new lifestyle. Shrestha noted that during this process, the
disparity between rich and poor in Nepal began growing substantially. People who were poor and did not consume Western products were treated with disdain and contempt by others who had embraced these Western efforts. Thus, some individuals bought products that they did not need, despite having little resources to spare, to conform with the consumerism that had absorbed Nepal and avoid social humiliation.

Being perceived as low status can have negative consequences. Cohen and colleagues (2006) found in a sample of community adults ($N = 193$) that lower socioeconomic status (i.e., income and education) was related to higher levels of cortisol ($B = -2.5$), which was independent of ethnicity, age, gender, and body mass. Moreover, in a study of undergraduate participants, Smith and Jordan (2015) found that experimentally inducing threats to affiliation and status resulted in anxiety, shame, elevated blood pressure, and increased heart rate. These studies suggest that feeling as though one is in a low status position has negative impacts on both mental and physical well-being.

Social humiliation has also been linked to mental health concerns. Social humiliation has been defined as feeling lessened in pride or dignity by others (Lindner, 2007) or perceiving oneself to be unjustly demeaned and devalued (Hartling & Luchette, 1999). Humiliation has been associated with anxiety and depression. In one large study from a population-based twin register ($N = 7,322$), researchers conducted diagnostic interviews and recorded stressful life events in the past year (Kendler, Hettema, & Butera, 2003). These stressful life events were placed in four categories: 1. Loss (e.g., loss of a loved one, material possessions, health), 2. Humiliation (i.e., feeling devalued in relation to others), 3. Entrapment (i.e., ongoing circumstances of substantial difficulties for at least 6 months with little hope of improvement), and 4. Danger (i.e., level of potential future loss, in which a traumatic event will recur or a full
threat or dire outcome has yet to be realized). Among the four categories of stressful life events, humiliation uniquely predicted the onset of major depression, generalized anxiety disorder, and mixed episodes of depression and anxiety. Similarly, Farmer and McGuffin (2003) found for participants who were diagnosed with current major depression via clinical interview, 31% identified experiencing a humiliating event in the last year. In contrast, only 11% of people in the control group identified such an event. These studies indicate that social humiliation is linked to both depression and anxiety.

Past studies have also suggested that people will pay to avoid low status or to reclaim a sense of status. Indeed, one study found that 75% of participants were willing to pay money to avoid being exposed as the lowest performer in a group task (Erikson et al., 2017). Along the same lines, Sivanthan and Pettit (2010) found that when participants were (randomly) informed they were the bottom performers of a group, they were willing to pay more for high-status goods than people who were told they were top performers. Altogether, these findings suggest people have strong negative reactions to being perceived as low status, and to avoid social humiliation, some people may be more than willing to pay the price of acquiring something to improve their status, as the consequences of being low status can be detrimental.

These different perspectives on status motivations and life history factors could provide additional insight into excessive acquisition. For example, life history theory may give clues on why excessive acquiring behaviours may be more or less socially motivated throughout the lifespan. If increased acquiring coincides with boosts to specific social motivations (e.g., mate-seeking, status (either status-seeking or avoiding low status), protecting oneself others, worries about being excluded), this may indicate what kind of environmental stressors the person is facing and suggest why specific acquiring choices might be made at a given time.
When social connection needs are thwarted, people may turn to objects as a source of comfort, safety, and security (Kings, Moulding, & Knight, 2017; Yap & Grisham, 2021), which could fulfill certain social motivations, like wanting to belong or wanting to take care of others. Some researchers have suggested that strong object attachment may be a compensatory response to unfulfilled social connections (Yap & Grisham, 2021). In addition, people who hoard are more likely to have an insecure attachment style (Grisham, Martyn, Kerin, Baldwin, & Norberg, 2018; Medard, 2014), which has been linked to social disconnection (Akbag & Immagolu, 2010; Bernardon, Babb, Hakim-Larson, & Gragg, 2011; Carr, Colthurst, Coyle, & Elliott, 2013). People who hoard have also been observed to experience indiscriminate and strong emotional attachments to their belongings, even ones that seem to have little value to other people (Mogan, Kyrios, Schweitzer, Yap, & Moulding, 2012).

Anthropomorphizing may be an avenue for people to bond with objects, at least in some ways, like they would with people. Epley and colleagues (2008) suggested that people are more likely to anthropomorphize objects when they lack a sense of social connection to other humans. In experimental studies, people who are made to feel lonely ascribe more mental capacities to robots (Eyssel & Reich, 2013) and gadgets (Epley et al., 2008). Anthropomorphizing belongings could activate social cognitive processes that underlie person-to-person interactions, which might make objects proxy social targets. Supporting this notion, some neuroimaging data suggest that mental processes similar to those involved in perceiving humans are also triggered when people anthropomorphize objects (Waytz et al., 2010). Thus, projecting human-like qualities onto non-human agents could result in opportunities to satisfy at least some of the human need for connection with others.
Anthropomorphism is more likely to be a mechanism of acquisition in hoarding than in compulsive buying. Anthropomorphizing has been positively associated with hoarding severity ($r = .44$), emotional attachment to objects ($r = .44$), and feeling responsible for the fate of objects (e.g., feeling guilty if the item is discarded, $r = .45$; Burgess, Graves, & Frost, 2018). Chandler and Schwars (2010) also found that people are more reluctant to replace products that have been anthropomorphized, which has been opined as one reason why people who hoard have difficulties discarding items (Stewart, 2019). In compulsive buying, acquiring seems less about the stuff specifically and more about what kind of impression the objects can make to other people (e.g., objects can send the message that someone is successful; Dittmar, 2005). On the other hand, in hoarding, people seem to have a deep connection with the objects themselves. Indeed, in one study, people who hoard made statements like, “Once I see an object’s soul and feel the connection, I cannot hurt it” (Tinlin et al., 2022). Therefore, if anthropomorphism elevates the importance of possessions and makes them targets for social connection, then these factors seem most fitting with clinical observations of people who hoard compared to people who compulsively buy.

Re-evaluating Excessive Acquisition Models

A major aim of this research was to clarify social values and social motivations for acquiring and to compare compulsive buying and hoarding. Based on the degree to which materialism, depression, and specific social motivations (including preserving one’s reputation and concerns about being socially excluded) correlated with excessive acquisition, no clear differences were found between these two groups. For decades, research on excessive acquisition has been isolated into two camps – compulsive buying or hoarding. As stated previously, treatment outcomes for both compulsive buying and hoarding have been somewhat
underwhelming (Hague et al., 2016; Tolin et al., 2015). The pattern of results found thus far suggests that it may be time for these isolated research teams to start collaborating more to reduce redundancies and make more progress on understanding excessive acquisition.

**Social and Cognitive Models of Excessive Acquisition**

The current study results provide support for some aspects of Dittmar’s (2004) two-factor model for compulsive buying. Dittmar’s model, which takes a social psychological perspective, suggested two key factors for excessive acquisition: 1. discrepancies between one’s actual and ideal self and 2. materialism. Dittmar proposed that materialistic people will resolve their self-discrepancies through excessive acquiring, whereas less materialistic people will resolve this discrepancy through other means. The current research supported Dittmar’s theory in terms of materialism being consistently related to excessive acquisition.

The current study results also partially support popular cognitive models for acquiring: Kyrios and colleagues’ (2004) cognitive model for compulsive buying and the Steketee and Frost (2014) cognitive-behavioural model for hoarding. As discussed in Chapter 1, Kyrios et al. (2004) posited that compulsive buying is driven by a combination of perfectionism, depressed mood, and dysfunctional beliefs (e.g., buying objects is an effective way to boost one’s mood, emotional security will be attained through buying objects; items are unique, so not buying an item is a lost opportunity; and one must maintain sole control over their objects). Moreover, as mentioned previously, the cognitive-behavioural model of hoarding suggests that acquiring and saving are problems that are driven by low mood, information-processing deficits, maladaptive beliefs about possessions, strong emotional responses to objects, and postponing discarding decisions to avoid negative emotions. In the current research, the depression aspect of both cognitive models was supported. Depression was a unique correlate of excessive acquisition in
the current study and helped differentiate between those who did and did not excessively acquire when accounting for age, materialism, concerns about being excluded, and wanting to preserve one’s reputation.

What are some implications of depression being linked to excessive acquisition? Both the cognitive models discussed suggest that people will acquire when they feel depressed because of beliefs that acquiring will boost one’s mood. However, this hypothesized directionality has yet to be fully established. Depression could have a bidirectional relationship to excessive acquisition. Christenson et al. (1994) observed negative emotions before episodes of compulsive buying, feelings of relief and positive emotions during the buying episodes, and depression, guilt and shame afterward. These observations support the idea that people may get into a cycle where depression bookends the beginning and end of buying episodes. Thus, it seems possible that excessive acquiring may provide relief from low mood, but acquiring could also paradoxically contribute to low mood.

Dittmar’s model also suggests that materialism is an antecedent to compulsive buying, but this directionality has not yet been confirmed. Materialism may lead to excessive acquisition, but excessive acquisition may also feed materialistic values, as well. For example, Dittmar (2004) proposed that seeing objects as pathways to happiness and success would result in excessive acquisition (Dittmar, 2005). Some research does suggest that acquiring evokes positive emotions, as people who compulsively buy and hoard often experience pleasant emotions while acquiring (Kyrios et al., 2004; Taylor et al., 2018). When looking to the opposite direction of this relation, after people acquire objects, they may receive compliments about the items, others might make positive assumptions about the acquirer for owning certain objects, and others may openly express envy about the ownership of certain items. All of these social
reactions to acquired objects may evoke positive emotions about the acquirer’s self-worth. Thus, acquiring may be a response to materialism, but acquiring itself may strengthen values that equate self-worth with objects.

Notably, Dittmar’s theory implies that social factors are central to compulsive buying, based on her emphasis on materialism and how she defines materialism as a social value; In contrast, Kyrios et al.’s cognitive theory barely focuses on social factors at all and does not necessarily agree that compulsive buying is driven by materialism. In this cognitive model, values such as materialism may play a role, but Kyrios asserts that beliefs about objects (as discussed previously) are more central to compulsive buying behaviour. The current study results suggest that Dittmar’s hunch about social factors, and specifically materialism, has quite a bit of support, suggesting that Kyrios et al.’s model may be missing this social piece.

In the future, an integrated model for excessive acquisition, that includes both compulsive buying and hoarding, would be helpful in furthering understanding of how these behaviours form and are maintained. As discussed above, materialism and depression have support from both past literature and the current study to be candidates in this integrated model, as they are correlates to excessive acquisition. However, little can be said about if materialism and depression are vulnerability factors for excessive acquisition, consequences of excessive acquisition, or both. Adding any social motivations to this future integrated model is premature at this point, but it seems possible that with future research and continued focus on the role of social factors in excessive acquisition, some social motivations could have a spotlight in future etiological models. Overall, the current study results have provided some clarity on which aspects of past models may be carried forward for future conceptual models of excessive acquisition (i.e., materialism and depression).
Behavioural Addiction Model

A tentative addiction model for both compulsive buying and hoarding has been put forth recently (Pickering, Dylan, & Norberg, 2023). These authors suggest that compulsive buying and hoarding (i.e., acquiring and saving behaviours) could be candidates for behavioural addictions. In their review, Pickering et al. mapped evidence about compulsive buying and hoarding onto two common addiction models: the Component Model of Addiction (Griffiths, 2005) and the Interaction of Person-Affect-Cognition-Execution (Brand et al., 2019). The authors suggest that more work needs to be done before firm conclusions are made, but this alternative perspective on compulsive buying and hoarding has potential for taking these fields in new directions.

Despite the early stages of Pickering and colleagues’ (2023) work, considering the Chapter 3 study results in the context of an addiction model is certainly interesting. Both positive and negative urgency (i.e., acting impulsively when feeling extremely positive or negative) have been considered important correlates for substance use over time. (See review by Smith & Cyders, 2016.) Positive and negative urgency have also been identified as correlates of compulsive buying symptoms in a community sample of adults ($B = .27$ and $B = .34$, respectively), independent of age, sex, income, education, neuroticism, and extraversion (Rose & Segrist, 2014). Abilities to resist acquiring urges may be impaired for people who compulsively buy and hoard. Moreover, from a behavioural addiction standpoint, both negative mood and positive moods would be important triggers for acquiring episodes.

The behavioural addiction model also has some implications for social factors. Dingle, Cruwys, and Frings (2015) found that some people felt they gained a social identity with the onset of their addictions, especially if they had previously been socially isolated. With this lens, it seems possible that people who excessively acquire may find kinship with others who engage
in similar addictive behaviour. Thus, expecting people to suddenly curb their excessive acquisition could result in losing an important part of their identity and social connections. This kinship with others may be especially important in compulsive buying, seeing as this group is often portrayed as being more public with their behaviours compared to those who hoard.

**Stigma**

Television shows that feature people with extreme hoarding problems, like the reality television show *Hoarders*, stigmatize those who hoard by presenting the protagonists as warnings of the consequences of overconsumption (Cheadle, 2016). One study involved adults watching the show *Hoarders* or two other shows that involved lower levels of household clutter (Bates, Leonidis, Corrigan, & Chasson, 2020). Participants who watched *Hoarders* rated people who hoard as very different from the general population, more so than participants who watched the other two shows. This finding is troubling because stigma may be a barrier for treatment seeking in hoarding. One study found that perceived stigma (i.e., believing that others will judge one negatively) and self-stigma (i.e., judging oneself negatively) were negatively correlated with treatment seeking attitudes ($r = -.49$ and $-.67$, respectively; Jennings et al., 2015). In a qualitative study of participants who were actively seeking hoarding treatment, some common themes were that participants felt overlooked (i.e., people were too busy looking at the stuff and not the individual), they felt service providers were rejecting, and they had difficulties knowing whom to trust (McGrath, Russell, & Masterson, 2023). However, this perceived stigma in hoarding does not seem to have the same flavour in compulsive buying.

Compulsive buying is often depicted by popular media with a much lighter tone than hoarding. Indeed, the popular book series and blockbuster movie, *Confessions of a Shopaholic* written by Sophie Kinsella, has been quite well received. The movie grossed over $100 million
worldwide (IMDbPro, 2009), the books have sold over 45 million copies, and the books have been translated into over 40 languages (Kinsella, 2024). The main character, Becky Bloomwood, is a charming woman who gets lost in fantasies about how much her life will improve with each newly acquired item. She buys far too much and then experiences amusing consequences, which she is largely able to overcome. This type of media portrayal humanizes people who struggle with excessive acquisition. Interestingly, reactions to Becky Bloomwood and to people who appear in Hoarders are quite different. Many people relate to Becky Bloomwood, feel positively about her, and some scholars have gone so far as to assert that Becky Bloomwood is a victim of consumerist culture, which is where they argue the real change needs to start happening (Sriastuti, 2015). This reaction is at odds with the stigma observed for people who hoard.

Like Sophie Kinsella has done so well with her Becky Bloomwood character, it is important to look beyond the abundance of stuff in hoarding disorder to see the person at the centre. Few consistent differences were found when looking at correlates of excessive acquisition in the context of compulsive buying and hoarding. Drawing similarities between those who hoard and people that others find relatable, like Becky Bloomwood, could help decrease stigma for individuals struggling with hoarding, which may in turn extend to a reduction in self-stigma. Indeed, Ferrari et al. (2019) showed that psychological interventions that feature a self-compassion component are associated with greater improvements in self-compassion, depression, self-criticism, and anxiety compared to interventions that focus less on self-compassion.
**Future Directions**

**Clinical Implications**

More effective treatment options are urgently needed for people who excessively acquire. As mentioned previously, to date, underwhelming treatment outcomes have been seen so far for both compulsive buying and hoarding (Hague et al., 2016, Tolin et al., 2015). Some researchers argue that progress has stalled in developing effective treatments for compulsive buying and hoarding. Pickering et al. (2023) suggest reconsidering extant conceptualizations of these problems to gain new momentum on developing effective treatment approaches.

Materialism might fluctuate based on adult development and situational cues. In terms of situational cues, capitalistic ideals may amplify materialistic values. In capitalist cultures, people who have problems with excessive acquisition may be particularly vulnerable when faced with sophisticated advertising strategies. For example, advertisements that suggest a happier and more successful life if the person just chooses to buy more things could trigger materialistic values and acquiring problems. Interestingly, some studies support the notion that materialism may fluctuate throughout the lifespan. Kasser et al. (2014) collected materialism self-report data from 118 participants at age 18 and again at 30 years old. They found a moderate decline in materialistic values over the years ($d = -0.66$). A meta-analysis of cross-sectional data found a modest negative correlation between age and materialism, $r = -.16$; 95% CI [-.14, -.18] across the lifespan (15 to 90 years), with a latent growth model analysis suggesting that materialism may be lowest in middle-aged participants (Jaspers & Pieters, 2016). These articles suggest that materialism might not be a fixed state and give hints on what is still missing from the knowledge base: how do materialistic values form and what strengthens and weakens them?
Clinically, materialism could be considered during interventions. Clinicians could be attentive to client expressions of materialistic values (e.g., I need luxury items to impress people, people will think I am a loser if I do not own anything from that brand, I need these things to fake it until I make it) and help clients challenge such thoughts. Taking a Motivational Interviewing approach or an Acceptance and Commitment Therapy approach could also help clients articulate their values, explore ambivalence, and grapple with competing values, such as fitting in versus having control over one’s budget. Additionally, clinicians could be aware that acquiring excessively may strengthen materialistic values in a bidirectional manner that is not beneficial to the client; perhaps reducing acquiring may subsequently reduce materialism, too.

Last, helping clients find their identities and self-worth outside of their owned objects would be an important treatment target. This could involve helping clients to articulate the many facets of their identity – acknowledging that owning stuff and acquiring more stuff is just one part of their identity. Examining how big this part is when compared to other parts of their identity could be illuminating for the person. Also, clients may benefit from highlighting other ways to express their identity aside from acquiring. This approach may help redirect acquiring behaviours to other interests and perhaps make room for other values in their life.

Depression was another correlate for excessive acquisition in both symptom groups. Currently, specialized cognitive-behavioural therapy for hoarding (Steketee & Frost, 2013) recommends that if hoarding and depression are both present, clinicians should treat hoarding first if the depression is mild to moderate. Perhaps this recommendation should be reconsidered, given the underwhelming treatment outcomes thus far (Tolin et al., 2015). Alternatively, clinicians could follow Steketee and Frost’s recommendations and complete hoarding protocols, and simultaneously incorporate other approaches that have been linked to improving depression,
such as enhancing self-compassion (Ferrari et al., 2019) and improving interpersonal relationships (Zlotnick, Kohn, Keitner, & Della, 2000). A similar process can be taken with compulsive buying as well – carefully considering if depression treatment should be integrated or sequenced with compulsive buying treatment.

When treating compulsive buying, clinicians should attend to acquisition of free items and address this behaviour if it is problematic. Even if the home is not cluttered, acquiring too much free stuff can have consequences. For example, people may spend an excessive amount of time searching online for opportunities to acquire free things (e.g., Facebook Marketplace, Buy Nothing group posts) or dedicate excessive time and resources to going out and acquiring these free items. Many posts for free items are first come, first serve. So not only do people who want many free items need to be diligent for finding these posts or ads, they often need to be fast, compete with others, and have enough resources (e.g., time, transportation) to do so. Therefore, acquiring free things is not always problematic, but could turn into a problem if so much time and resources are taken up by this endeavour that one becomes distressed or important aspects of their lives suffer as a result. Williams et al. (2012) found that roughly half of people who compulsively buy may also struggle with acquiring too much free stuff. Neglecting this aspect of excessive acquisition could result in missed opportunities for targeting core issues and making sure that any successes with reducing buying do not simply transition to acquiring free things.

**Research Recommendations**

Studies of compulsive buying may unknowingly include many participants with hoarding disorder. It would not be surprising that people who hoard would respond to research advertisements that request volunteers who struggle with buying too many things. One way to remedy this possible confound would be to assess hoarding among prospective participants in
compulsive buying studies. The vast majority of compulsive buying studies do not assess hoarding symptoms at all. This is one strength of the current study, as both symptom groups were carefully screened for difficulty discarding and clutter volume in the home. Adding either a screening process or measures on both compulsive buying and hoarding within studies on excessive acquisition could be a first step in integrating these research streams. Continuing to compare compulsive buying and hoarding will also be an efficient way to learn more about excessive acquisition, incorporate new information into conceptualizations of excessive acquisition, and provide fresh perspectives on possible treatment approaches.

What happens to all the stuff people acquire during compulsive buying episodes if their homes are not being filled up with belongings? One clue may be the age difference found between groups for the Chapter 3 study – the hoarding symptom group was significantly older than the compulsive buying group, which is consistent with past literature (McElroy, 1994; Woody et al., 2020). Young people tend to move homes more frequently than older adults (e.g., move for school, new jobs, and serial rental homes). These moves likely result in regular offloading of stuff. Once people settle into a more permanent home, persistent excessive acquisition could result in mounting clutter, and decisions to discard may be more difficult and also less urgent (i.e., no need to pack up and move any time soon). Thus, it seems possible that one pathway to hoarding disorder in middle age could be the presence of compulsive buying in young adulthood. Closely investigating what happens to objects over time within compulsive buying will help with understanding if compulsive buying is an early version of hoarding, and if not, then researchers should identify what factors can stop this transition.
Conclusions

One broad goal for the current research was to understand what people who excessively acquire could be acquiring beyond the stuff and if this answer was distinct for those who hoard and those who do not. The study results suggest that people who excessively acquire are acting consistently with their social value of materialism and overvaluing the link between what they own and their worth as a person. Moreover, the results indicate that depression is linked to excessive acquiring, but the degree to which acquiring may relieve low mood or contribute to low mood is still under question. Social motivations that may deserve further study are concerns about being socially excluded and wanting to preserve one’s reputation. When looking at correlates of excessive acquisition, participants with compulsive buying or hoarding symptoms did not differ in materialism, depression, nor any of the examined social motivations. These results suggest the compulsive buying and hoarding research streams may benefit from greater collaboration to streamline progress for understanding these problem behaviours.
References


https://doi.org/10.2174/13816128113199990618


Chasson, G. S., Guy, A. A., Bates, S., & Corrigan, P. W. (2018). They aren’t like me, they are bad, and they are to blame: A theoretically-informed study of stigma of hoarding disorder


Christopher, A. N., & Schlenker, B. R. (2004). Materialism and affect: The role of self-
https://doi.org/10.1521/jscp.23.2.260.31022


https://doi.org/10.1097/01.psy.0000221236.37158.b9


Kellman-McFarlane, K., Stewart, B., Woody, S. R., Ayers, C., Dozier, M., Frost, R. O.,
Inventory - Revised: Psychometric performance across the lifespan. *Journal of Affective

dimensions of loss, humiliation, entrapment, and danger in the prediction of onsets of
major depression and generalized anxiety. *Archives of General Psychiatry, 60*(8), 789-796.
https://doi.org/10.1001/archpsyc.60.8.789

of needs: Contemporary extensions built upon ancient foundations. *Perspectives on

*Social and Personality Psychology Compass, 13*(7). https://doi.org/10.1111/spc.12488

Kim, J. E., & Kim, J. (2012). Human factors in retail environments: A review. *International
Journal of Retail and Distribution Management, 40*(11), 818-841.
https://doi.org/10.1108/09590551211267593

Kings, C. A., Moulding, R., & Knight, T. (2017). You are what you own: Reviewing the link
between possessions, emotional attachment, and the self-concept in hoarding disorder.
https://doi.org/10.1016/j.jocrd.2017.05.005

extensions of self and links to significant others in hoarding: The Possessions as Others


https://doi.org/10.1037/cps0000120


https://doi.org/10.1016/j.jad.2019.06.004

https://doi.org/10.1097/CXA.0000000000000156


https://doi.org/10.1080/15534510802185687*


https://doi.org/10.1097/NMD.0b013e31823f678b


https://doi.org/10.1023/A:1025428631552

https://doi.org/10.1002/da.22393


Tarka, P., & Harnish, R. J. (2023). Toward better understanding the materialism-hedonism and the Big Five personality-compulsive buying relationships: A new consumer cultural
https://doi.org/10.1080/08911762.2023.2188509*


https://doi.org/10.1002/da.20469


https://doi.org/10.1017/S1352465822000261


https://doi.org/10.1016/j.psychres.2009.05.001


https://doi.org/10.1016/j.psychres.2007.08.008


https://doi.org/10.1002/da.22327


https://doi.org/10.1177/0092070306289291*


https://doi.org/10.1016/j.joep.2003.06.001*


https://doi.org/10.1037/a0020240


https://doi.org/10.1016/j.ausmj.2011.04.007*


https://doi.org/10.1037/per0000200


https://doi.org/10.1108/17473610810857309


https://doi.org/10.1016/j.copsyc.2020.07.022


https://doi.org/10.1016/j.paid.2021.110927


*Note.* Articles denoted with an asterisk were included in the full meta-analysis in Chapter 2.