

Investigating the Motivations Behind Acquiring and Saving Behaviours

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Abstract

Motivational theories state that our lives are organised around the pursuit of affective outcomes; that is, we behave in ways to achieve emotionally positive outcomes or avoid negative outcomes. In the hoarding and compulsive buying literatures, motivations for saving and acquiring have been studied from the perspective of affect (e.g., buying something because it is exciting, or saving to avoid the distress associated with throwing something away), and also from the perspective of cognitions (e.g., buying or saving something because it may be useful). Rarely have cognitions and affect been examined together, as theoretical models would suggest. Thus, the current study aimed to develop measures of acquiring and saving motivations that linked cognitions with their corresponding affective states. Two self-report measures (an 89-item acquiring motives measure and a 90-item saving motives measure) were written based on a review of the literature and consultation with 22 experts in the field. With the aim of facilitating comparison between motivations for acquiring and saving behaviours, eighty-two motives items were identical for both measures. A total of 432 participants completed these measures, along with measures of compulsive acquiring and hoarding symptoms. Exploratory factor analyses were run on both motives measures resulting in a seven-factor solution for acquiring motives and a nine-factor solution for saving motives. The following preliminary subscales were derived for both acquiring and saving motives measures; coping, alleviating social insecurity, helping others, avoiding mistakes, sentimental, and history. The subscale labelled ‘goals and achievements’ was unique to acquiring motives, while the following subscales were unique to saving motives; self-identity, instrumental, and completion. The preliminary motives subscales showed small to large correlations with measures of hoarding and compulsive buying symptoms. Future research will continue to refine and develop the measures.

Declaration of Originality

The works found within this thesis are original and have not been submitted for publication, written by another person, nor submitted for a higher degree to any other university or institution. The empirical research contained within this thesis was approved by the Human Research Ethics Committee at Macquarie University (reference number: HREC 5201950509440).

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Investigating the Motivations Behind Acquiring and Saving Behaviours

The acquiring and saving of possessions is thought to be evolutionarily adaptive because it helps humans survive when resources are limited; however, many individuals acquire and save more possessions than they actually need (Grisham & Barlow, 2005). For instance, many people collect large sets of specific objects that they do not use for their intended purposes (e.g., coin collectors, postage stamp collectors; McIntosh & Schmeichel, 2004). These collections are typically well organised and do not interfere with everyday functioning (Nordsletten & Mataix-Cols, 2012). However, in more extreme cases, acquiring and saving can be detrimental, leading to financial hardship, distress, and disorganised clutter. Thus, for some individuals, possession consumption can become maladaptive.

Maladaptive possession consumption is a central feature of both hoarding disorder and buying-shopping disorder. Hoarding disorder (HD) is characterised by extreme difficulties with discarding possessions, which results in heavily cluttered living spaces and significant distress (American Psychiatric Association, 2013). Approximately 85% of individuals with HD have acquisition problems that also contribute to clutter (Frost, Tolin, Steketee, Fitch, & Selbo-Bruns, 2009). Excessive acquisition, however, is considered to be a specifier in the DSM-5 and is not part of the core HD diagnostic criteria (American Psychiatric Association, 2013). On the other hand, buying-shopping disorder (BSD), is characterised by the uncontrollable and compulsive buying of possessions (Black, 2007; Faber, 2010; McElroy, Keck, Pope, Smith, & Strakowski, 1994; Müller et al., 2019). BSD can result in significant emotional, interpersonal, and financial consequences for individuals (Dittmar, 2004; Miltenberger et al., 2003; Müller et al., 2019; O'Guinn & Faber, 1989). The main difference between acquisition problems in HD and BSD is that BSD is defined primarily by problems with buying possessions (Kellett & Bolton, 2009), whereas HD is

associated with buying possessions and also acquiring things for free (e.g., taking flyers or picking up things off the street; Frost et al., 1998; Müller et al., 2007).

Treatment outcomes for individuals with HD and BSD are poor. Recent meta-analyses have concluded that for both HD and BSD, group cognitive behavioural therapy (CBT) shows the most promise in terms of therapeutic efficacy (Bodryzlova, Audet, Bergeron, & O'Connor, 2018; Hague, Hall, & Kellett, 2016; Leite, Pereira, Nardi, & Silva, 2014; Tolin, Frost, Steketee, & Muroff, 2015). For both HD and BSD, group CBT focuses on changing problematic behaviours (i.e., acquiring and/or saving) with various cognitive and behavioural strategies, such as cognitive restructuring, non-acquiring shopping trips, and discarding exercises (Burgard & Mitchell, 2000; Müller & Mitchell, 2011; Muroff, Underwood, Steketee, 2014). However, this treatment is ineffective for many individuals. After completing treatment, 61% of individuals with BSD and 73% of individuals with HD continue to report clinically significant symptoms (Frost, Ruby, & Shuer, 2012; Gilliam et al., 2011; Moulding, Nedeljkovic, Kyrios, Osborne, & Mogan, 2017; Müller et al., 2008; Muroff et al., 2012). These poor treatment outcomes could be a result of not fully understanding the motivations behind these problematic behaviours.

Examining the motivations behind acquiring and saving behaviours may lead to the development of better treatments for HD and BSD. In this thesis, I will first review theories of motivation, which will then inform a review of the theoretical models of hoarding and compulsive buying. I will then review previous measures of acquiring and saving motivations and discuss the need to develop new measures. To do this, I will first examine both normative and maladaptive motives derived from the consumer psychology, collecting, hoarding, and compulsive buying literatures. Based on this literature review, the remainder of this thesis will describe the first stage of developing new self-report measures to assess acquiring and saving motives in individuals. Being able to measure these motivations, and assess which

ones predict maladaptive acquiring and saving behaviours would be informative in developing better treatments that may target these behaviours more effectively.

Theoretical Background

Motivation. Motivational theories posit that our lives are organised around the pursuit of incentives (e.g., Bindra, 1974; Klinger, 1975). An incentive is defined as anything that has the capacity to produce a change in affect (Klinger, 1975). A stimulus that is associated with positive affect has positive incentive value while a stimulus associated with negative affect has negative incentive value (Beckmann & Heckhausen, 2018). For instance, acquiring a beautiful object because it brings about positive feelings is an example of approaching a positive incentive. On the other hand, acquiring an object to avoid the anxiety associated with not having it in the future is an example of avoiding a negative incentive.

Incentive theories of motivation (e.g., Bindra, 1974; Bolles, 1972; Klinger, 1975; Lewin, 1951; Mowrer, 1960; Spence, 1956; Tolman, 1932) are thus similar to reinforcement theories (e.g., Hull, 1943; Skinner, 1951), because approaching positive incentives is akin to positive reinforcement, while avoiding negative incentives is akin to negative reinforcement (Beckmann & Heckhausen, 2018). Incentive values, like reinforcement, can be learnt and shaped by previous experience (Berridge, 2000). For example, an individual throws away a paper document because they no longer need it, only to find that later, they need a piece of scrap paper to quickly write a small note on. The individual might then regret throwing out the paper. Therefore, in the future, the individual may be more likely to save paper documents to avoid the regret and distress associated with needing an item they do not possess. Incentive values can also be learned vicariously or through verbal instruction (Bandura, 1977; Berridge, 2000), such as when a child watches a parent become distressed after they realise they have thrown out an object they need. The child may then expect something bad to happen if they throw away an object they might need, and thus might avoid

discarding things because of their expectations of negative incentives. Therefore, an individual's expectancies of incentives affects their behaviour (Bolles, 1972).

The incentive theories of motivation that account for expectancies are also referred to as expectancy-value theories (Beckmann & Heckhausen, 2018; Bolles, 1972; Edwards, 1954; Mowrer, 1960; Peak, 1955; Rotter, 1954; Vroom, 1964). Importantly, the incentive value of an object can be different for different people, depending on their expectancies. For example, an individual with HD might expect to experience distress if they throw out an old item of clothing. However, a healthy individual might expect to experience relief or even excitement, because throwing out the same item of clothing could create space for new clothes. Expectancies, or cognitions about stimuli, are thus inherently related to affect. Yet cognitions and affect have often been studied separately in the hoarding and compulsive buying literatures. Current theoretical models of hoarding and compulsive buying account for both cognitions and affect (Frost & Hartl, 1996; Kellett & Bolton, 2009), but do not explicitly link them together as expectancies of affect change.

Theoretical models of hoarding and compulsive buying.

The cognitive-behavioural model of hoarding. Most research in the hoarding literature has supported a cognitive-behavioural model (Kyrios, 2014). The cognitive-behavioural model of hoarding posits that individuals with hoarding problems acquire and save items because of maladaptive cognitions about possessions and excessive attachment to possessions (Frost & Hartl, 1996). Maladaptive cognitions about the nature of possessions are wide-ranging but have been classified into a few themes. Steketee, Frost, and Kyrios (2003) categorised these cognitions into four themes: (1) cognitions about being overly attached to possessions (e.g., *I love some of my belongings the way I love some people*); (2) cognitions about needing possessions to maintain memories (e.g., *Saving this means I don't have to rely on my memory*); (3) cognitions about being responsible for the care and use of possessions

(e.g., *If this possession may be of use to someone else, I am responsible for saving it for them*); and (4) cognitions about needing to control possessions (e.g., *I like to maintain sole control over my things*). Individuals with HD have been shown to endorse these types of cognitions more than healthy controls and clinical controls (e.g., Kyrios et al., 2018; Steketee et al., 2003). Many studies have also found robust correlations between measures of these cognitions and measures of hoarding symptoms (e.g., Coles, Frost, Heimberg, & Steketee, 2003; Luchian, McNally, & Hooley, 2007).

The cognitive-behavioural model of hoarding has also emphasised the role of affect in saving and acquiring behaviours (Frost & Hartl, 1996; Steketee & Frost, 2003). There have been many documented cases of individuals with hoarding problems who react with intense sadness, anxiety, and guilt when discarding their possessions (Greenberg, 1987). Thus, saving possessions allows individuals with HD to avoid the negative emotions associated with discarding (Frost & Hartl, 1996). Further, cross-sectional research has found associations between the intolerance of negative emotional states and symptoms of difficulty discarding and excessive acquisition (Norberg, Crone, Kwok, & Grisham, 2018; Norberg, Keyan, & Grisham, 2015; Phung, Moulding, Taylor, & Nedeljkovic, 2015; Shaw, Llabre, & Timpano, 2015; Shaw, Timpano, Steketee, Tolin & Frost, 2015; Timpano, Buckner, Richey, Murphy, & Schmidt, 2009; Timpano, Shaw, Coughle, & Fitch, 2014). Furthermore, inducing stress or negative mood in nonclinical individuals who are intolerant to distress increases self-reported acquiring and saving (Timpano et al., 2014), and also increases the number of items saved in a behavioural discarding task (Norberg et al., 2015; Shaw & Timpano, 2016). However, positive emotions (i.e., excitement) have also been shown to predict acquiring behaviours (Shaw, 2017). In two recent qualitative studies, individuals with HD reported that their saving and acquiring behaviours were sources of both positive and negative emotions (Bratiliotis et

al., 2019; Taylor, Theiler, Nedeljkovic, & Moulding, 2019). Thus, further investigation into the motivations behind hoarding behaviours is required.

The cognitive-behavioural model of compulsive buying. Most researchers believe that BSD is a behavioural addiction (Müller et al., 2019) and have used a cognitive-behavioural model to explain how buying can become compulsive and maladaptive (Kellett & Bolton, 2009). The cognitive-behavioural model of compulsive buying has also highlighted the role of cognitions and beliefs in the development of BSD (Kellett & Bolton, 2009; Moulding, Duong, Nedeljkovic, & Kyrios, 2017). Individuals with BSD frequently report that as children, their parents often displayed affection to them by using money and gifts (Faber & O’Guinn, 1988; Scherhorn, 1990). Early experiences like this may produce distorted cognitions and beliefs about the importance of possessions. Individuals with BSD have been found to endorse highly materialistic values that possessions lead to success and happiness (i.e., *The things I own say a lot about how well I’m doing in life*; Dittmar, 2005), and exaggerated cognitions that objects provide emotional security (i.e., *My life would not be complete if I did not have this item*; Kyrios, Frost, & Steketee, 2004).

Distorted cognitions about possessions may lead individuals with BSD to compulsively buy because possessions become infused with strong emotions and purchases become central to their lives (Kellett & Bolton, 2009). Researchers have observed that in the early stages of BSD, buying behaviours are driven by positive emotions (e.g., pleasure, excitement; Christenson et al., 1994; Müller et al., 2019). Over time, however, buying becomes primarily driven by the temporary reduction of negative emotions (e.g., depressed mood, anxiety), rather than the desire to own the purchased objects themselves (Kyrios, McQueen, & Moulding, 2013; Miltenberger et al., 2003; Müller et al., 2012; Nicolai, Daranco, & Moshagen, 2016; O’Guinn & Faber, 1989; Pooler, 2003). This change in

motivation is characteristic of a behavioural addiction (Berridge & Robinson, 2016; Trotzke, Brand, & Starcke, 2017).

Measuring the Motivations to Acquire and Save

It is evident that theoretical models for hoarding and compulsive buying consider cognitions and affect when explaining acquiring and saving behaviours; however, cognitions have not been linked with their associated expectancies for affective change, as motivational theories specify (e.g., Bolles, 1972). For example, in HD, cognitions about being overly attached to possessions strongly predict saving behaviours (e.g., Steketee et al., 2003); but measures that assess emotional attachment do not make it clear whether attachment is driven by an expectation for positive affective change (e.g., using objects for comfort) or the reduction of negative affect (e.g., saving family heirlooms to avoid forgetting loved ones). Differentiating between these types of motivations is important for designing treatments. For instance, if maladaptive saving and acquiring behaviours are primarily driven by avoidance motivations, then exposure to the feared outcomes may be the best way to learn that the feared outcomes are not as bad as expected (Ayers et al., 2014; Craske, Treanor, Conway, Zbozinek, & Vervliet, 2014). However, if maladaptive behaviours are driven by both approach and avoidance motivations, then in addition to exposure, learning emotional regulation strategies and finding other sources of positive incentives (e.g., creative outlets, hobbies, and activities) to substitute the positive incentives obtained from possessions may be a more effective strategy (Chou et al., 2019; Perri, 1985; Rose & Segrist, 2012; Vaillant, 1983).

It is also important to assess the types of cognitions that are behind the expectancies for affective change, as this should also influence treatment strategies. For instance, treatment for individuals with HD who primarily save for sentimental reasons should be focused on problems in relationships and interpersonal attachment (Andrews-McClymont, Lilienfeld, &

Duke, 2003; Furby, 1978a). On the other hand, saving for usefulness reasons might be better addressed by challenging maladaptive cognitions about the perceived utility of the possessions (Andrews-McClymont et al., 2003; Furby, 1978a). To better understand the motivations behind acquiring and saving behaviours in HD and BSD, it is critical to develop new measures for these constructs. I will now briefly review previous measures that have assessed similar constructs (i.e., cognitions and affect) in order to improve and build upon previous approaches.

Previous measures. Previous measures for hoarding and compulsive buying motivations have either assessed cognitions or emotions, or conflated the measurement of these constructs. For example, the most prominent hoarding cognitions measure, the Saving Cognitions Inventory (Steketee et al., 2003), measures four types of cognitions; emotional attachment, memory, responsibility, and control (mentioned above). Most items in this self-report questionnaire only assess cognitions, and not their associated emotions. However, some items in the emotional attachment subscale describe expectancies of affective outcomes of discarding, specifically the avoidance of negative incentives (i.e., *“I could not tolerate it if I were to get rid of this”* and *“I’m ashamed when I don’t have something like this when I need it”*; Steketee et al., 2003). Although these items describe expectancies for affective changes, they are conflated with other items that only measure cognitions. Thus, the Saving Cognitions Inventory can only distinguish between and measure different themes of cognitions. It does not assess whether these cognitions are associated with the approach of positive affect, or the avoidance of negative affect.

Previous measures of compulsive buying cognitions have similarly conflated the measurement of cognitions and affect. A prominent measure of compulsive buying cognitions is the Buying Cognitions Inventory (Kyrios et al., 2004). Similarly to the Saving Cognitions Inventory, it measures four types of cognitions: (1) cognitions that buying will neutralise

negative feelings (i.e., *This item will make me feel better*); (2) exaggerated cognitions that objects provide emotional security (i.e., *My life would not be complete if I did not have this item*); (3) cognitions that every potential purchase is unique and that there is a felt responsibility to make the purchase (i.e., *If I don't buy this now and find I need it later, it would be a disaster*); and (4) cognitions about needing to be in control (i.e., *No one has the right to tell me what I can and cannot buy*; Kyrios et al., 2004). Although the first subscale of this measure (i.e., neutralising negative feelings) measures affective expectancies, the other subscales only assess cognitions and do not link them to affect.

There are currently no known self-report measures that directly assess affective expectancies for acquiring or saving behaviours; however, measures from the emotion regulation literature have been used to assess levels of general avoidance of distress. Hoarding researchers have used measures such as the Distress Tolerance Scale (e.g., Timpano et al., 2009), which measures the general ability to tolerate distress and how bad an individual expects to feel when in distress. Example items include “*I'll do anything to avoid feeling distressed or upset*” and “*I can't handle feeling stressed or upset*” (Simons & Gaher, 2005). The main limitation in using a measure like the Distress Tolerance Scale is that it primarily assesses the ability to tolerate negative emotions, while not specifically linking these emotions to acquiring and saving behaviours. Rather, these behaviours are assumed to be the result of avoidance motivations (e.g., Wheaton, Abramowitz, Franklin, Berman, & Fabricant, 2011). Another important limitation of emotion regulation measures is that they do not capture the other cognitions (i.e., reasons and thoughts) that lead to expectancies for affective change.

One measure that consistently links cognitions and expectancies for affective change is the Buying Motivations Scale (Dittmar, Long, & Meek, 2004). In this measure, five types of motivations are measured: (1) identity (i.e., *I like to buy things which impress other*

people); (2) emotion (i.e., *I often buy things because it puts me in a better mood*); (3) experience (i.e., *The “feel” of the place I buy things is important to me*); (4) economy (i.e., *I like to compare prices carefully before I buy*); and (5) efficiency (i.e., *Buying things this way avoids hassles*; Dittmar et al., 2004). As this measure is limited to measuring the motivations for buying, it may not be suitable for individuals with HD who often excessively acquire free things (Frost et al., 1998; Müller et al., 2007). For instance, an individual with HD might pick up an abandoned pile of books off the street because they might feel guilty if the books are not used; this kind of motive is not assessed in the Buying Motivations Scale. This measure also does not assess key motivations noted in the Buying Cognitions Inventory, such as emotional security and control. Therefore, it is important to develop a new measure of acquiring motives to capture these motivations and the motivations that are also relevant to HD.

It is important that the new measure also assesses and compares motives for both acquiring and saving. Prior research has shown these motives may overlap (e.g., Dozier & Ayers, 2014; Frost, Steketee, Tolin, Sinopoli, & Ruby, 2015). For instance, the guilt from not using objects can motivate individuals with HD to acquire new things and also to save possessions (Frost et al., 2015). Frost et al. (2015) developed a structured interview to compare acquiring and saving cognitions in HD. It comprised of four identical questions asked once for acquiring and then for saving behaviours. The four types of cognitions assessed were derived from the cognitive-behavioural model of hoarding, and they were about: (1) losing important information; (2) wasting useful things; (3) emotional/sentimental significance; and (4) the aesthetic/beautiful qualities of objects (Frost et al., 2015). Although the interviewers assessed cognitions, the interviewees might have talked about their motivations, specifically their expectancies for affect change. However, it is unclear if these motivations contributed to severity ratings provided by interviewers. Further, previous

research has shown that the structured interview format may be less effective than self-report questionnaires, because individuals might respond more truthfully in the latter (McDonald, Borntrager & Rostad, 2014).

Developing a New Motives Measure

It is evident that new measures of acquiring and saving motivations should be developed to gain further insights into these behaviours. Building upon previous measures, the new measure should be a self-report measure that utilises similar questions for acquiring and saving to facilitate the comparison of the motivations for these behaviours. Further, the measure should assess the cognitions (i.e., thoughts and reasons) that lead to expectancies for affective change. In addition to the types of cognitions specified above in the theoretical models of hoarding and compulsive buying, there is a substantial amount of literature on other types of cognitions, particularly from the consumer behaviour and collecting literatures. These cognitions may be related to maladaptive acquiring and saving in ways not yet specified by theoretical models of hoarding and compulsive buying. As recommended by Clark and Watson's (1995, 2019) guidelines for scale development, I will now review these cognitions in depth in order to examine and define the content to be included in the new measure for acquiring and saving motivations.

Usefulness and preparedness for the future. As mentioned above, individuals often acquire and save objects because of their instrumental value (i.e., perceived usefulness or need for an object; Furby, 1978b). This motivation is present in both nonclinical (e.g., Coles et al., 2003) and clinical HD individuals (Dozier & Ayers, 2014; Frost et al., 2015; Frost & Steketee, 2008; Kyrios et al., 2004). Similar to this motivation is the need to be prepared for the future (e.g., Frost, Hartl, Christian, & Williams, 1995) and the uncertainty of whether an item will be needed or if it can be replaced (Frost & Hartl, 1996). Acquiring and saving behaviours have been shown to be related to an intolerance of uncertainty (Castriotta, Dozier,

Taylor, Mayesa, & Ayers, 2019; Mathes et al., 2017; Oglesby et al., 2013), which is thought to be tied to a fear of making mistakes (Frost & Gross, 1993). Indeed, indecisiveness and the fear of decision making is related to acquiring and saving behaviours (Frost et al., 2009; Frost & Shows, 1993; Frost, Tolin, Steketee, & Oh, 2011).

Interestingly, individuals with BSD do not typically acquire for instrumental reasons (Kukar-Kinney, Scheinbaum, & Schaeffers, 2016). This is because individuals with BSD tend to acquire to satisfy their need to buy, rather than to satisfy a functional need for the product they acquire (O'Guinn & Faber, 1989). Kukar-Kinney et al. (2016) found that individuals with compulsive buying tendencies and healthy control individuals did not differ in their intentions to purchase goods for their instrumental value. Further, researchers have observed that, similarly to individuals with HD, individuals with BSD often do not open their purchased products after buying them (Lejoyeux, Haberman, Solomon, & Adès, 1999; Ridgway et al., 2008), suggesting that they do not actually need the products they buy. Therefore, even though both individuals with HD and BSD may not use their possessions, cognitions about the instrumental use of possessions may discriminate between these two disorders.

Related to instrumental reasons is the acquisition and saving of possessions to prevent boredom (e.g., saving an incomplete deck of playing cards because it can give you something to do when bored; Furby, 1978b). This motivation is related to instrumental reasons because the possession is acquired or saved because it is useful; however, it only becomes useful when the individual feels bored.

Responsibility. Individuals with HD often report feeling a sense of responsibility to care for their possessions (e.g., Steketee et al., 2003) and to make sure that every possession is used or given to the right person (Bratotiis et al., 2019). This responsibility is strongly correlated with self-reported saving and acquiring behaviours (e.g., Steketee et al., 2003) and

is closely tied with a responsibility to prevent waste. The felt responsibility to prevent waste has been identified as a strong predictor of saving and acquiring behaviours in individuals with HD, and is also a prevalent motive in nonclinical samples (Dozier & Ayers, 2014; Frost et al., 2018; Frost et al., 2015; Haws, Naylor, Coulter, & Bearden, 2012).

Individuals may also feel other responsibilities which drive their acquiring and saving behaviours, such as the responsibility to preserve things for others to enjoy in the future (e.g., historical artefacts); this is typically prevalent among collectors (Belk, Wallendorf, & Holbrook, 1991; Formanek, 1991). Individuals may also acquire and save possessions because they feel a responsibility to help others (i.e., buying things for family or friends; Small & Cryder, 2016). When helping others, apart from feeling a sense of responsibility, the motives of individuals could be purely altruistic, or could serve self-interests (Small & Cryder, 2016). For instance, individuals can gain respect and status when they are perceived as generous (Flynn, 2003). Additionally, individuals may be motivated to acquire things to help others because they want to prove their own generosity to themselves (Small & Cryder, 2016), or because behaving generously helps them feel good (Andreoni, 1990; Baumann, Cialdini, & Kendrick, 1981; Dunn, Aknin, & Norton, 2008).

Gifting. Related to usefulness and responsibility is the motivation to save or acquire possessions in order to give them to the right person (Bratotiis et al., 2019). This is one way that individuals with HD often think about finding a use or a “home” for a possession (Steketee et al., 2003). Buying gifts for others and sharing resources is also a way that individuals can strengthen their relationships with others (Aknin & Human, 2015; Belk, 1976; Belk & Coon, 1993; Caplow, 1982; Cavanaugh, Bettman, & Luce, 2015; Ruth, Otnes, & Brunel, 1999). In addition, acquiring gifts for the self, or *self-gifting*, is another aspect of gifting that is largely focused on self-enhancement (Mortimer, Bougoure, & Fazal-E-Hasan, 2015). For example, individuals may self-gift for several reasons, such as celebrating their

achievements, motivating themselves to achieve future goals, maintaining positive mood, enjoying the feeling of shopping, and relieving stress or negative mood (Mortimer et al., 2015).

Self-identity. Individuals often acquire and save possessions to express their identity (Birdwell, 1968; Dittmar, 1991; Furby, 1978b; Richins, 1994). In the consumer psychology literature, researchers have found that consumers purchase products that either represent their self-image, or their ideal self-image (Landon, 1974). Individuals with BSD have been found to be highly materialistic, placing more importance on possessions than healthy controls (Dittmar, 2005; O'Guinn & Faber, 1989). Individuals with HD acquire and save possessions due to the same motivation, although it can be more extreme such that possessions are seen as extensions of the self (Dozier, Taylor, Castriotta, Mayes, & Ayers, 2017; Kings, Knight, & Moulding, 2018; Yap & Grisham, 2019). Possessions can also provide a means of expressing an individual's status (Richins, 1994), and can showcase an individual's achievements, competence, or mastery (Furby, 1978b). In this way, possessions can also be used to create a legacy to leave behind (Price, Arnould, & Curasi, 2000). Collectors also use their collections to express their identity, as collecting can also provide a challenge and a sense of mastery (Formanek, 1991; Spaid, 2018).

Emotional and sentimental value. The motivation to acquire and save possessions for their sentimental value (i.e., has emotional significance and represents emotional memories) has been found to be strongly associated with HD and BSD (Kyrios et al., 2004; Steketee et al., 2003; Yap & Grisham, 2019). This motivation is related to self-identity motivations (mentioned above), because possessions that are seen as extensions of the self also gain more emotional and sentimental value (Yap & Grisham, 2019). Further, using possessions to provide comfort and a sense of security is a related motivation that is also

associated with acquiring and saving behaviours (Hartl, Duffany, Allen, Steketee, & Frost, 2005; Nedelisky & Steele, 2009).

Control. Individuals with BSD and HD acquire and save possessions as a way of taking control over their actions and their environment (Frost et al., 1995; Kyrios et al., 2004; Steketee et al., 2003). Although using possessions to control an individual's environment is thought to be a normative behaviour (Furby, 1978a), individuals with HD seem to have an exaggerated need for control (Frost & Hartl, 1996). These individuals are also less willing to share their possessions, and report more negative reactions (i.e., anger) when other people touch or discard their possessions (Frost et al., 1995; Steketee et al., 2003).

Memory. Individuals with HD report a lack of confidence in their memory, which leads them to rely on using their possessions as memory cues (Frost & Hartl, 1996; Hartl et al., 2004). Healthy individuals, however, also acquire and save possessions to remember personal things in their lives (e.g., Richins, 1994). Research has shown that compared to healthy individuals, individuals with HD have less confidence in memory and have a need to keep their possessions in view (Hartl et al., 2004). Individuals with HD also perceive the consequences of forgetting information to be more catastrophic than healthy individuals (Hartl et al., 2004). Hoarding researchers have also studied whether the lack of confidence in memory is due to actual memory deficits; however, no consistent memory effects have been found in individuals with HD (for a review, see Woody, Kellman-McFarlane, & Welsted, 2014). Importantly, studies have found that acquiring and saving for memory-related reasons is an important predictor of hoarding symptoms (e.g., Steketee et al., 2003).

Intrinsic value. Researchers have found that individuals acquire and save objects because of their intrinsic qualities as well (e.g., beauty, uniqueness; Frost et al., 2015; Shao, Grace, & Ross, 2019). In the consumer psychology literature, beauty and aesthetic appeal is known to motivate consumers to buy products (e.g., Crilly, Moultrie, & Clarkson, 2004;

Fandos & Flavian, 2006). Individuals with HD also acquire and save possessions because of beauty reasons (Frost et al., 2015; Frost & Steketee, 2008).

Unique objects are also seen as more desirable and valuable, according to scarcity theory (Lynn, 1989). Marketers often take advantage of this by using restricted offers to increase the perception of their product as being unique (e.g., offer available for a limited time, or only for a limited number of products). Compared to healthy controls, individuals with compulsive buying tendencies report significantly more motivation to buy products because of restricted offers (Kukar-Kinney et al., 2016; Kyrios et al., 2004). Unique products can also allow consumers to express the distinctiveness of their identity (Berger & Heath, 2007; Chan, Berger, & Boven, 2012; Shao et al., 2019; White & Argo, 2011). Thus, uniqueness can be an important motivator in acquiring behaviours because it often increases willingness to buy in consumers (Lynn, 1989). Interestingly, individuals with HD often see their possessions as being unique (Frost & Hartl, 1996), thus, uniqueness may also be an important reason for acquiring and saving in HD.

Collecting-specific motivations. Collectors are often motivated to acquire and save objects to possess a complete set of objects (Carey, 2008; Formanek, 1991). Some individuals also collect for financial investment purposes because collections may be worth more than the individual objects separately, or because the collected objects may be worth more in the future (Belk et al., 1991; Carey, 2008; Formanek, 1991). Finally, another prominent motivation for collectors is the excitement of ‘hunting’ and finding objects for their collections (Arnold & Reynolds, 2003; Formanek, 1991).

Social reasons. The desire to belong, make friends, or to strengthen existing connections can drive individuals to acquire and save objects (Dittmar et al., 2004; Formanek, 1991). For example, collectors also acquire and save objects because their collections can open them up to meeting other people with shared interests (i.e., other

collectors; Belk, Wallendorf, & Sherry, 1988; Formanek, 1991; Lee & Trace, 2009; Long & Schiffman, 1997; Zoldberg, 1995). In the consumer psychology literature, impressing friends and improving social image are common motives for making purchases (Dittmar et al., 2004). Additionally, individuals with BSD buy to gain social approval and conform to social norms more than healthy controls (Belk, 2000; Krueger, 2000; Kukar-Kinney et al., 2016; Pooler, 2003; Scherhorn, Reisch, & Raab, 1990). In line with this motivation, the types of things individuals with BSD tend to buy are clothes, shoes, jewellery, cosmetics, and other ‘trendy’ products that are capable of changing one’s appearance (Christenson et al. 1994; Faber, O’Guinn, & Krych, 1987; Krueger, 1988; McElroy et al., 1994; Mitchell, Burgard, Faber, Crosby, & de Zwaan, 2006; Park & Burns, 2005; Schlosser, Black, Repertinger, & Freet, 1994). However, this finding may be biased by the female-majority samples across these BSD studies (Kellett & Bolton, 2009).

Anthropomorphism. Related to emotional security and social motivations, another reason that individuals acquire and save possessions is because they might anthropomorphise them. Anthropomorphism (i.e., the tendency to imbue inanimate objects with human qualities) can drive individuals to use objects in place of social connections (Epley, Waytz, & Cacioppo, 2007). Some collectors have reported that their collections become their ‘friends’ (Formanek, 1991) and individuals with HD have reported that discarding a possession is like losing a loved one (Frost & Hartl, 1996). Hoarding has consistently been found to be associated with trait anthropomorphism (Burgess, Graves, & Frost, 2018; Neave, Jackson, Saxton, & Hönekopp, 2015; Neave, Tyson, McInnes, & Hamilton, 2016; Norberg et al., 2018; Timpano & Shaw, 2013; Yap & Grisham, 2019). Individuals with hoarding problems also experience more loneliness (Burgess et al., 2018) and interpersonal problems (Grisham, Steketee, & Frost, 2008; Medard & Kellett, 2014; Timpano, Keough, Traeger, & Schmidt, 2011; Tolin, Frost, Steketee, & Fitch, 2008). Therefore, the combination of loneliness and

trait anthropomorphism may drive individuals to acquire and save possessions to fulfil these unmet social needs.

Monetary value and bargains. Individuals often acquire and save for monetary reasons (Frost, Steketee, & Williams, 2002; Kyrios et al., 2004). When compared to healthy controls, individuals with BSD report higher levels of motivation to acquire because of discounts and bargains (Kukar-Kinney et al., 2016). On the other hand, individuals with HD often report saving possessions because it allows them to save money, or rather, because throwing possessions away is akin to throwing away money (Bratotiis et al., 2019).

The Current Study

Taken together, numerous expectancies for affective change may drive acquiring and saving behaviours. As existing measures do not capture the spectrum of motivations that may drive these behaviours, the current study reports on the initial phases of the development of new measures for acquiring and saving motivations. Importantly, in these new measures, cognitions (i.e., reasons reviewed above) are linked to their associated affective states to better align with the expectancy-value theories of motivation (e.g., Bolles, 1972). Following Clark and Watson's (1995, 2019) process for scale construction, I first generated items based on the extant literature and then asked experts in the field to review the items for construct validity, content validity, and readability. After making suggested revisions, I administered the questionnaires to a large sample of individuals who varied in their acquiring and saving behaviours. I then used exploratory factor analysis to examine the latent structure of the questionnaires, thus providing a test for whether the different types of approach and avoidance motivations could be empirically distinguished from each other. Another purpose for using exploratory factor analysis was to refine the items in the measures by identifying the best indicators for each latent construct. As exploratory aims, I compared the themes that emerged in the exploratory factor analyses for acquiring and saving by testing the

associations between the preliminary scales of motivation with self-reported acquiring and saving behaviours in order to assess the clinical utility of the measures. I also tested the associations between self-reported acquiring and saving and items that were dropped after exploratory factor analyses to evaluate which items should be retained in future administrations of the measures.

Methods

Item Development

All items for the new measures were derived from the literature review above on acquiring and saving motivations and were then reviewed by experts in the field to ensure sound content and construct validity. Each item was written to reflect either the pursuit of an emotionally positive outcome (e.g., *I acquire possessions to reward myself for achievements*) or the avoidance of a negative outcome (e.g., *I save possessions because others will be disappointed if I don't have/lose the information*). Initially, 101 items were written for both acquiring and saving motives. A large item pool was generated with the intention of subsequent analyses identifying the items that were reliable indicators of distinct latent constructs. See Appendix A for the initial item pool.

Expert review. Following item generation, 22 experts in motivation, HD, BSD, collecting, and consumer behaviour (34% of the 64 experts who were contacted) evaluated the readability of each item as well as the relevance to acquiring and saving motivations. Of the 22 experts, ten had been researching in their main field(s) for more than 10 years, and nine experts had been researching in their main field(s) for 5-10 years. See Appendix B for a summary of research experience in the expert panel. After the experts reviewed the measures, all items were then revised based on readability and relevance ratings, and on specific suggestions from the expert panel. For example, most experts deemed some items irrelevant to saving motives, but not acquiring motives, or irrelevant to acquiring motives, but not to

saving motives. Thus, these items were retained in the relevant item pool, and removed from the other item pool. Some items were deemed irrelevant to both saving and acquiring motives, and thus were cut from both item pools. Experts also made suggestions for new items, which were incorporated into the item pool. After all changes, 89 acquiring motives items and 90 saving motives items remained.

Materials

Motives for Acquiring and Saving Questionnaire (MASQ). In total, survey participants in the present study responded to 179 items. Eighty-two items were identical for the acquiring and saving item pools. Seven items were unique to the acquiring item pool, while eight items were unique to the saving item pool. To encourage participants to think about their motivations separately for each behaviour, the order of items for acquiring motives was different from the order for saving motives. Participants were asked to rate the extent to which each statement applied to them on a 5-point Likert scale from 0 (*not at all*) to 4 (*strongly true*) with higher scores indicating higher levels of motivation. A 5-point Likert scale was chosen to allow for adequate psychometric properties, while not constricting or overwhelming participants with too little or too many response options (Comrey, 1988; Simms, Zelazny, Williams, & Bernstein, 2019). Example MASQ items include; “*I acquire possessions because I am uncertain about whether they will be needed*”, and “*I save possessions to feel satisfied when I have a complete set of items*”. The psychometric properties of the item pools are a primary focus of the present study and are explored in detail below. See Appendix C for all items in the MASQ.

Saving Inventory-Revised (SI-R; Frost, Steketee, & Grisham, 2004). The SI-R is made up of 23 items and measures self-reported hoarding symptoms. It has three subscales; excessive acquisition, difficulty discarding, and clutter. Items are scored using a 5-point Likert scale from 0 (*none*) to 4 (*almost all/complete*) with higher scores reflecting higher

levels of hoarding symptoms. Example items include; “*To what extent do you have difficulty throwing things away?*” and “*To what extent do you feel unable to control the clutter in your home?*”. In both clinical and nonclinical samples, the SI-R has previously shown good validity and internal consistency (Cronbach’s $\alpha = .94$; Frost et al., 2004). In the current sample, the total score, difficulty discarding, excessive acquisition, and clutter subscales had good internal consistencies of $\alpha = .95, .91, .87$, and $.92$, respectively. See Appendix D for all items in the SI-R.

Compulsive Acquisition Scale (CAS; Frost, Steketee, & Williams, 2002). This 18-item questionnaire measures the extent to which individuals acquire possessions. It has two subscales that measure how much individuals are compelled to buy things (CAS-Buy; e.g., *Do you buy things to make yourself feel better?*) and acquire free things (CAS-Free; e.g., *Do you regret not taking something you could have gotten for free?*). Items are scored on a 7-point Likert scale from 1 (*not at all*) to 7 (*very much*), with higher scores indicating a higher level of compulsive acquisition. The CAS-Buy subscale has shown good validity in discriminating between individuals who compulsively buy from those who do not (Frost et al., 2002; Frost, Tolin, Steketee, Fitch, & Selbo-Bruns, 2009; Kyrios et al., 2004). The CAS has also shown good convergent validity and internal consistency (Cronbach’s $\alpha = .94$ and $.87$ for each subscale, respectively; Frost et al., 2002). In the current sample, the CAS-Buy and CAS-Free subscales had good internal consistencies at $\alpha = .93$ and $.83$, respectively. See Appendix E for all items in the CAS.

Demographics. Participants were also asked to report their age, gender, ethnicity, education, and marital status.

Participants

Following Comrey and Lee’s (1992) recommendations on adequate sample sizes for exploratory factor analysis, a total of 546 participants were recruited for this study to ensure

stable factor solutions. Participants were recruited from three main sources: (1) Macquarie University's undergraduate psychology participant pool; (2) Amazon Mechanical Turk (MTurk); and (3) the community. Community participants were recruited via flyers and online advertisements on Gumtree, Facebook, Twitter, the International Obsessive-Compulsive Disorder Foundation website, and by contacting previous participants in the Behavioural Science Laboratory who had asked to be informed of future research studies. For a forty-minute study, Macquarie University students were given course credit, MTurk participants were paid USD\$6.80 (approx. AUD\$10), and community participants were offered to go into a draw to win one of three AUD\$50 cash prizes. Participants were recruited from a variety of sources to increase the generalisability of findings. Previous research has shown that data quality tends to be similar across student, MTurk, and community samples (Buhrmester, Kwang, & Gosling, 2011; Chandler & Shapiro, 2016; Rouse, 2015; Walter, Seibert, Goering, & O'Boyle, 2019). MTurk participants were also included to increase the diversity of clinical symptoms in the combined sample, because these participants have been found to have higher rates of hoarding symptoms compared to student samples (Arditte, Cek, Shaw, & Timpano, 2016). Previous participants from the Behavioural Science Laboratory (part of community sample) were also invited to participate in the present study for the same reason, since they had previously been selected to participate in past studies because of their high acquiring or saving symptoms.

One hundred and fourteen participants (20.9%) were excluded from this study due to concerns about the quality of their data. Fifteen individuals did not attempt the motives measure, 32 failed two out of three randomly placed attention check items (e.g., *Please respond 4 [strongly true] for this item if you are paying attention*), and 89 completed the study in less than 15 minutes. A cut-off of 15 minutes was determined after piloting the survey with four individuals in the Behavioural Science Laboratory who completed the study

as fast as they could while making sure to carefully read all questions and response options. The fastest participant completed the study in 15 minutes (although other participants took closer to 30-40 minutes). Thus, excluding participants who completed the study in less than 15 minutes would increase the chances of excluding individuals who may not have been carefully reading every survey question. Participants were also asked to self-declare if their responses were not valid, after being assured of remuneration at the end of the survey. However, all participants indicated that their data was honest, accurate, and valid. Thus, a total of 432 participants were included in the analyses.

Procedure

Participants completed the entire study online through Qualtrics. After consenting to participate (see Appendix F for consent forms), they first provided demographic information and then completed the SI-R, CAS, and MASQ (acquiring items and then saving items). Then participants were debriefed and compensated for their time. MTurk participants who failed two or more attention check items were not paid. This condition of payment is consistent with MTurk policy (Amazon Mechanical Turk, 2018) and was explained in the consent form. All other participants, however, received compensation no matter how they responded to the attention check questions (either course credit or being entered into the draw to win prize money).

Data Analysis

Exploratory factor analyses were conducted separately for the acquiring and saving items in the MASQ. All factor analyses were run in Mplus Version 8 (Muthén & Muthén, 2017). All other analyses were conducted using IBM SPSS version 25 (2017). Alpha was set at .05. First, the demographic variables of the student, MTurk, and community samples were compared using one-way Analyses of Variance (ANOVAs) and chi-squared tests of

independence. The combined sample was then compared to participants who were excluded on demographic variables using independent *t*-tests and chi-squared tests of independence.

Following Clark and Watson's (1995, 2019) recommendations for scale development, before conducting exploratory factor analyses, the distributions of all MASQ items were examined to identify highly skewed items. For example, if the large majority of participants respond to an item in a similar way (i.e., by choosing *strongly true*), then the item is not useful for discriminating between participants. Also, highly skewed items are more likely to produce weak and unstable correlations, and thus should be considered for removal from the item pool (Clark & Watson, 1995).

The suitability of the data for factor analysis was also examined with the Kaiser-Meyer-Olkin (KMO) statistic and Bartlett's test of Sphericity. The KMO statistic measures the proportion of variance that can be accounted for by underlying factors, and ranges from 0-1, with values above .60 considered acceptable (Kaiser & Rice, 1974). Bartlett's test of Sphericity tests the null hypothesis that the observed variables are not correlated at all (i.e., that the correlation matrix is an identity matrix); *p* values less than .05 are considered acceptable.

For exploratory factor analyses, maximum likelihood estimation with robust standard errors (i.e., MLR estimator) was used. The MLR estimator is robust to non-normality in observed variables and uses full information maximum likelihood estimation to handle missing data (Muthén & Muthén, 2017). An oblique rotation, Geomin, was used because the extracted factors were expected to be correlated.

The factor solutions that were derived from the analyses were primarily evaluated based on substantive interpretation, with the aim of achieving simple structure and clear interpretable factors. Four model fit indices were used as a secondary evaluation of the factor solutions; the comparative fit index (CFI), Tucker-Lewis Index (TLI), standardized root-

mean-square residual (SRMR), and root-mean-square error of approximation (RMSEA).

Model fit is often interpreted as acceptable (i.e., the model is not considered misspecified) if CFI and TLI are .90 or more and SRMR and RMSEA are .08 or less (Finch & West, 1997; Hu & Bentler, 1998). Model fit is considered excellent if CFI and TLI are .95 or more and SRMR and RMSEA are .06 or less (Hu & Bentler, 1999). However, it is important to note that the exploratory analyses of the full item pool were not expected to have close fit because the item pool was purposefully written to be overinclusive by capturing a broad variety of heterogeneous constructs.

After choosing the most interpretable and best-fitting factor solution for the MASQ-Acquiring and MASQ-Saving items, preliminary subscales were then formed. To be included in a preliminary subscale, items needed to have a standardised primary factor loading of at least .40 (Stevens, 2002). Cross-loading onto other factors needed to be less than .30, and at least .20 lower than the primary factor loading. The internal consistencies of each preliminary subscale were examined using Cronbach's alpha and item-total correlations for all items in each preliminary subscale.

For a preliminary examination of the clinical utility of the MASQ, correlations for the preliminary scales with the measures of saving behaviours (SI-R difficulty discarding), acquiring behaviours (SI-R excessive acquiring, CAS-Free, and CAS-Buy), and hoarding symptoms (SI-R total and clutter scores) were then evaluated. MASQ items that were not included in the preliminary scales were also re-evaluated for retention in the next stage of scale development by examining their correlations with saving and acquiring behaviours.

Results

Participant Characteristics

The student, MTurk, and community samples were compared on demographics and measures of hoarding and compulsive buying symptoms to see if they differed on any

variables. Several one-way ANOVAs revealed that the three samples differed significantly on age, years of tertiary education, hoarding symptoms (SI-R total), and acquiring free things (CAS-Free; all p 's < .01), but not compulsive buying symptoms (CAS-Buy; $p = .08$). Post hoc comparisons using the Scheffé criterion revealed that the MTurk sample was older on average than the student ($p < .001$) and community samples ($p < .001$). The student sample had less years of tertiary education on average compared to the MTurk ($p < .001$) and community samples ($p < .001$). The community sample had a higher average level of hoarding symptoms than both the student ($p = .02$) and MTurk samples ($p = .001$). Finally, the community sample had a higher average level of acquiring free things than the student sample ($p = .003$). See Table 1 for sample means and overall F statistics.

Chi-squared tests showed significant associations between sample type and ethnicity, gender, and marital status (all p 's < .05). Although the majority of each sample was Caucasian, the MTurk sample comprised of fewer Asian individuals, while having more Hispanic and African American individuals when compared to the student and community samples. These differences are consistent with the ethnic make-up of previous American (MTurk) and Australian samples (e.g., Yap & Grisham, 2019; Norberg, Newins, Mills, & Ham, 2017). The MTurk sample also had a larger proportion of males and were more likely to be married compared to the student and community samples. Thus, our recruitment methods were successful in increasing the diversity of our sample. See Table 1 for a summary of demographic information and measures of hoarding and compulsive buying for the student, MTurk, community, and combined samples.

For the combined sample, 13.0% reported clinical levels of hoarding symptoms (SI-R total ≥ 43 for individuals under 40 years old; Kellman-McFarlane et al., 2019), 8.3% reported excessive acquisition using hoarding criteria (CAS-Free ≥ 23 and CAS-Buy ≥ 41 ; Frost et al., 2009), and 15.5% reported clinical levels of compulsive buying symptoms (CAS-Buy ≥ 48 ;

Table 1
Demographics, SI-R, and CAS

	Student		MTurk		Community		Comparison Statistics	Combined /Included		Excluded (<i>n</i> = 114)	Comparison Statistics			
	<i>n</i> after exclusions							432		-				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>		
Age	27.55	11.29	37.49	10.93	30.92	12.68	32.88***	32.53	12.27	30.36	10.08	-1.95		
Years of Tertiary Education	1.26	1.85	3.28	2.63	3.58	2.82	38.12***	2.62	2.63	2.39	1.87	-1.08		
SI-R Total	23.76	12.85	22.21	16.16	29.71	17.98	7.39**	24.36	15.71	25.29 (<i>n</i> = 104)	19.02	0.46		
CAS-Buy	31.57	12.32	30.54	14.52	34.59	16.41	2.51	31.77	14.26	33.53 (<i>n</i> = 102)	17.22	0.96		
CAS-Free	12.35	5.30	13.45	7.62	15.48	7.60	5.99**	13.49	6.95	14.90 (<i>n</i> = 102)	8.17	1.61		
Ethnicity	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	χ^2	<i>n</i>	%	<i>n</i>	%	χ^2		
Caucasian	90	58.1	147	79.5	59	64.1	75.19***	296	68.5	81	71.1	17.43*		
Asian	23	14.8	9	4.9	19	20.7		51	11.8	11	9.6			
South Asian	8	5.2	2	1.1	3	3.3		13	3.0	9	7.9			
African American	-	-	11	5.9	-	-		11	2.5	4	3.5			
Hispanic	-	-	6	3.2	-	-		6	1.4	1	0.9			
Middle Eastern	7	4.5	-	-	5	5.4		12	2.8	4	3.5			
Mixed	21	13.5	10	5.4	6	6.5		37	8.6	2	1.8			
Other	6	3.8	-	-	-	-		6	1.4	2	1.8			
Gender							87.45***						4.37	
Female	127	81.9	75	40.5	72	78.3	29.00**	274	63.4	64	56.1	1.74		
Male	27	17.4	110	59.5	17	18.5		154	35.6	48	42.1			
Other or Prefer not to	1	0.6	-	-	3	3.3		4	1.0	2	1.8			
Marital Status														
Single	55	35.5	73	39.5	43	46.7		171	39.6	44	38.6			
Married	30	19.4	56	30.3	15	16.3		101	23.4	31	27.2			
Relationship	59	36.8	43	23.2	30	32.6		132	30.6	33	28.9			
Divorced	11	7.1	12	6.5	2	2.2		25	5.8	5	4.4			
Widowed	-	-	1	0.5	-	-		1	0.2	-	-			
Other	-	-	-	-	2	2.2		2	0.4	1	0.9			

Note. CAS = Compulsive Acquisition Scale, SI-R = Savings Inventory – Revised. ^a Data is missing for some excluded participants who did not complete the SI-R or the CAS. * *p* < .05. ** *p* < .01. *** *p* < .001.

Frost et al., 2009). Finally, 8.8% of the combined sample reported clinical levels of both hoarding and compulsive buying symptoms.

Excluded participants. Analyses were then conducted to examine potential systematic differences between excluded participants and included participants (combined sample). Several *t*-tests showed no significant differences between included and excluded participants in terms of age, years of tertiary education, hoarding symptoms, compulsive buying symptoms, and acquiring free things (all *p*'s > .05). Chi-squared tests revealed a significant association between exclusion and ethnicity (*p* = .03), but not with gender, nor with marital status (both *p*'s > .05). South Asian individuals were more likely to be excluded and mixed ethnicity individuals more likely to be included. See Table 1 for demographics of excluded participants. See Table 2 for a summary of the number of participants excluded from each sample.

Table 2
Frequencies and Percentages of Excluded Participants in Each Sample

	Student		MTurk		Community		Combined	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Total Excluded	25	21.9	60	52.6	29	25.4	114	100.0
for completion	1	4.0	3	5.0	11	37.9	15	13.2
for time	16	64.0	56	93.3	17	58.6	89	78.1
for attention	10	40.0	7	11.7	15	51.7	32	28.1

Note. There is overlap between frequency and percentages for each exclusion criterion because many participants met multiple exclusion criteria (i.e., some participants who finished the survey in less than 15 minutes also did not pass the attention checks).

Psychometrics of Individual MASQ Items

A total of 19 items were highly skewed (skewness > 2) and had low means ($M < 1$ on a scale from 0-5), indicating floor effects. See Appendices G and H for tables of means, standard deviations, skewness, and kurtosis statistics for all MASQ items. The skewed items were retained in analyses for two reasons. First, the MLR estimator, which was used for exploratory factor analyses, is robust to non-normality (Muthén & Muthén, 2017). Second, these items may perform differently in other samples (e.g., clinical samples) and should be

tested in these samples first before being removed (Clark & Watson, 1995). As a preliminary test of whether these 19 items might perform differently in a clinical sample, their psychometric properties were re-examined in the subset of participants who scored in the clinical range for hoarding symptoms. All 19 items showed better psychometric performance with all skewness statistics < 2 , and all means > 1 (see Appendix I).

Exploratory Factor Analysis for MASQ-Acquiring

The KMO statistic was .97 and Bartlett's test of Sphericity was significant ($\chi^2 [3916] = 33628.10, p < .001$), indicating that all 89 acquiring items were related and suitable for factor analysis. To determine the number of factors to extract, parallel analysis was initially used. Parallel analysis compares the eigenvalues from the observed data to eigenvalues generated from a simulated random dataset with the same sample size (Horn, 1965). Thus, when the observed eigenvalues are greater than randomly generated eigenvalues, it indicates that the factors are likely meaningful and not due to random noise. Parallel analysis indicated that up to six factors could be extracted. However, the first six solutions included factors that combined two or more conceptually distinct constructs. For example, in the six-factor solution, the fourth factor was comprised of items about the future use of possessions and items about completing a set of possessions. Kaiser's criteria for factor extraction (eigenvalue > 1 rule; Kaiser, 1960) suggested extracting up to 13 factors. However, the eight-factor solution was uninterpretable because no items loaded onto the eighth factor. Thus, to avoid over-extraction, the factor-solutions above eight factors were not examined. The seven-factor solution had the clearest interpretation, including factors related to coping, alleviating social insecurity, helping others, avoiding mistakes, sentimental motivations, goals and achievement, and history. The fit indices were CFI = .876, TLI = .853, SRMR = .029, and RMSEA = .047. See Appendix J for a summary of the seven-factor solution.

Preliminary subscales for the MASQ-Acquiring were then created based on the pattern of factor loadings (see Table 3). A total of 20 items were dropped because of strong cross-loadings on multiple factors, while 13 items were dropped because they did not load strongly onto any factor. The internal consistencies for each preliminary subscale were found to be good to excellent (α ranged from .83-.97), and item-total correlations were medium to high (r ranged from .54-.90).

Table 3
MASQ-Acquiring Preliminary Subscales From Seven-Factor Solution

Subscale / Items	Factor loadings	Cronbach's alpha	Item - total correlations
Coping		.967	
to avoid feeling unhappy.	.753		.844
to distract myself from stressful concerns in my life.	.873		.876
to avoid thinking about something that is troubling me.	.846		.901
because they help me cope in stressful times.	.804		.879
to avoid feeling distressed.	.780		.891
because it temporarily relieves any distress I am feeling.	.841		.897
to calm myself when anxious.	.809		.845
to comfort myself.	.731		.826
Alleviating social insecurity		.959	
so others won't feel insecure.	.583		.707
because I don't want others to forget me when I'm gone.	.509		.702
to avoid being a boring person.	.527		.740
so I can use them to make others jealous.	.738		.703
so people will respect me.	.768		.821
so that others will like me.	.796		.790
to get attention from others.	.879		.808
so others won't ignore me.	.785		.796
to show others that I am interesting.	.681		.796
so that I can belong with a group of people.	.576		.746
to feel close to other people.	.572		.748
because owning unique items makes me feel desirable.	.541		.776
to avoid being embarrassed by not owning unique items.	.736		.777
to feel good about myself by impressing others.	.764		.844
to avoid displeasing others.	.653		.735
Helping others		.856	
because I'll enjoy gifting them to the right person.	.634		.646
because they help others cope in stressful times.	.503		.675
to use them to comfort others during times of distress.	.642		.750
to feel good because I can help someone with them.	.699		.742

Subscale / Items (Continued)	Factor loadings	Cronbach's alpha	Item - total correlations
Avoiding mistakes		.933	
because I feel bad when useable things go to waste.	.620		.717
because it's helpful to have the information they contain.	.407		.568
because I might regret my decision if I don't.	.582		.790
because having an incomplete set of items is frustrating.	.459		.673
to feel good about reusing/recycling old items.	.404		.537
because it would be annoying to obtain them in the future.	.483		.607
because I'm afraid I might need them in the future.	.578		.725
because I'm afraid I'll need the information they contain.	.469		.661
because I am uncertain about whether they will be needed.	.641		.745
to feel satisfied when I have a complete set of items.	.473		.659
because not doing so feels like I'm making a mistake.	.469		.737
because doing so feels like I'm saving money.	.515		.602
because I like a good bargain.	.421		.559
because I'll be angry if I miss out on a good deal.	.517		.692
to avoid feeling unprepared.	.474		.593
to feel prepared for any situation.	.588		.689
Sentimental		.826	
so that I can enjoy remembering the experiences I have had.	.763		.740
because I don't want to forget the memories that these possessions represent.	.653		.647
to feel nostalgic about my past.	.630		.665
Goals and achievement		.857	
because beautiful possessions fill me with delight.	.439		.538
because they represent my dreams/goals in life.	.551		.680
to become the person I want to be.	.465		.696
to help me feel more like the person I want to be.	.612		.744
to reward myself for achievements.	.573		.594
because they motivate me to achieve my goals.	.562		.630
History		.859	
so I can pass down something meaningful to the next generation.	.566		.591
because it will eventually allow someone else to connect to a piece of history.	.718		.725
because I feel obligated to preserve a piece of history.	.735		.726
because it allows me to connect to a piece of history.	.813		.795

Note. All items began with "I acquire possessions". All factor loadings were significant at $p < 0.05$.

Exploratory Factor Analysis for MASQ-Saving

The KMO statistic was .97 and Bartlett's test of Sphericity was significant (χ^2 [4005] = 36254.98, $p < .001$), indicating that all 90 saving items were related and suitable for factor analysis. Parallel analysis indicated that up to seven factors could be extracted. Similar to the MASQ-Acquiring factor analysis, the first seven solutions included factors that combined

two or more theoretically distinct constructs. Kaiser's (1960) criteria suggested extracting up to 12 factors. However, the tenth-factor solution was uninterpretable because no items loaded onto the tenth factor. Thus, the factor-solutions above ten factors were not examined. The nine-factor solution was found to have the clearest interpretation, and included factors relating to alleviating social insecurity, avoiding mistakes, coping, sentimental motivations, helping others, history, self-identity, completion, and instrumental motivations. Fit indices were CFI = .888, TLI = .861, SRMR = .025, and RMSEA = .048. See Appendix K for a summary of the nine-factor solution.

Preliminary subscales for the MASQ-Saving were then formed based on the factor loading pattern (see Table 4). Ten items were dropped because of strong cross-loadings, while 14 items were dropped because they did not load strongly onto any factor. Internal consistencies for each of the preliminary subscales were good to excellent (α ranged from .82-.96) and item-total correlations were medium to high (r ranged from .58-.87).

Table 4
MASQ-Saving Preliminary Subscales From Nine-Factor Solution

Subscale / Items	Factor loadings	Cronbach's alpha	Item - total correlations
Alleviate social insecurity		.963	
so others won't ignore me.	.886		.821
so that others will like me.	.863		.866
to avoid being embarrassed by not owning unique items.	.851		.836
so I can use them to make others jealous.	.831		.779
to get attention from others.	.818		.819
so people will respect me.	.805		.857
to feel good about myself by impressing others.	.779		.877
to show others that I am interesting.	.720		.824
to avoid being a boring person.	.712		.773
so that I can belong with a group of people.	.695		.797
so others won't feel insecure.	.589		.799
to avoid displeasing others.	.513		.711
because owning unique items makes me feel desirable.	.507		.775
because it opens me up to meeting people with shared interests.	.494		.667
because I don't want anyone else to have them.	.453		.623
because someone else would be angry at me for giving it away.	.424		.625

Subscale / Items (Continued)	Factor loadings	Cronbach's alpha	Item - total correlations
Avoiding mistakes		.935	
because it would be annoying to obtain them in the future.	.530		.687
because doing so feels like I'm saving money.	.556		.675
because it feels bad if I don't.	.547		.764
because not doing so feels like I'm making a mistake.	.621		.797
to avoid feeling unprepared.	.530		.695
because I might regret my decision if I don't.	.607		.789
to feel prepared for any situation.	.517		.745
because I'm afraid I might need them in the future.	.667		.716
because I am uncertain about whether they will be needed.	.718		.747
because I feel good about prolonging the life of the possessions.	.450		.659
because I feel bad when useable things go to waste.	.666		.694
Coping		.958	
to avoid feeling lonely.	.618		.757
to prevent myself from getting bored.	.489		.689
to avoid thinking about something that is troubling me.	.824		.864
to avoid feeling unhappy.	.653		.831
to be more satisfied with myself.	.502		.758
because it temporarily relieves any distress I am feeling.	.804		.883
to have something that understands the way I feel.	.450		.687
to avoid feeling distressed.	.737		.866
to calm myself when anxious.	.836		.866
to comfort myself.	.696		.812
because they help me cope in stressful times.	.776		.843
Sentimental		.895	
to feel connected to other people.	.467		.576
because I would feel guilty about giving up a gift from someone special.	.462		.630
to feel nostalgic about my past.	.699		.696
because I don't want to forget the memories that these possessions represent.	.755		.743
to avoid forgetting something/someone personally significant.	.655		.733
so that I can enjoy remembering the experiences I have had.	.803		.792
so that I can enjoy things that are special to me.	.467		.633
because they bring me joy.	.502		.598
Helping others		.879	
to use them to comfort others during times of distress.	.467		.718
because I think others will feel grateful when they can use them.	.577		.717
because they help others cope in stressful times.	.578		.709
to feel good because I can help someone with them.	.636		.781
because I'll enjoy gifting them to the right person.	.661		.647
History		.886	
because it will eventually allow someone else to connect to a piece of history.	.645		.678
because I feel obligated to preserve a piece of history.	.785		.838
because I would feel ashamed if I lost a historical artefact.	.526		.706

Subscale / Items (Continued)	Factor loadings	Cronbach's alpha	Item - total correlations
because it allows me to connect to a piece of history.	.697		.796
Self-identity		.889	
to become the person I want to be.	.611		.778
to help me feel more like the person I want to be.	.717		.808
because they make me who I am.	.458		.738
because they represent my dreams/goals in life.	.562		.706
Completion		.887	
because I enjoy how they match other things.	.547		.676
to feel satisfied when I have a complete set of items.	.858		.852
because having an incomplete set of items is frustrating.	.830		.819
Instrumental		.817	
because they allow me to gain skills or knowledge.	.659		.673
because it's helpful to have the information they contain.	.558		.631
because I'm certain that I need them.	.477		.585
because I like how useful they are.	.552		.665

Note. All items began with "I save possessions". All factor loadings were significant at $p < 0.05$.

Relationships Between Motivations and Behaviours

The intercorrelations between preliminary subscales of the MASQ were first examined. Correlations between the conceptually matched MASQ subscales allowed for the examination of the relationships between similar acquiring and saving motivations (e.g., coping motives for acquiring and coping motives for saving; see Table 5). These correlations were found to be stronger (r ranged from .72-.93) than the correlations between the other subscales of the MASQ (e.g., sentimental motives for acquiring and instrumental motives for saving; r ranged from .31-.78).

Correlations were also computed between saving behaviours, acquiring behaviours, hoarding symptoms, and the preliminary MASQ subscales described above (see Table 5). The MASQ-Acquiring subscales that were most strongly correlated with compulsive buying (CAS-Buy) were coping, alleviating social insecurity, avoiding mistakes, and goals and achievements (r 's $\geq .55$). The history subscale had the lowest correlation with compulsive buying ($r = .33$). The pattern of correlations between the MASQ subscales and other measures of acquiring (CAS-Free and SI-R Acquiring) were similar to the correlations with

Table 5
Correlations Between Symptoms, Acquiring and Saving Behaviours, and MASQ Subscales

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. SI-R Total	-																				
2. SI-R Excessive Acquiring	.872	-																			
3. SI-R Difficulty discarding	.911	.741	-																		
4. SI-R Clutter	.887	.628	.7	-																	
5. CAS-Free	.628	.596	.618	.477	-																
6. CAS-Buy	.756	.844	.667	.542	.668	-															
7. Acquiring - Coping	.591	.649	.506	.447	.476	.716	-														
8. Acquiring - Alleviating social insecurity	.558	.57	.459	.472	.496	.584	.683	-													
9. Acquiring - Helping others	.379	.405	.315	.304	.403	.444	.52	.567	-												
10. Acquiring - Avoiding mistakes	.669	.649	.618	.536	.707	.691	.681	.673	.53	-											
11. Acquiring - Sentimental	.466	.407	.457	.384	.446	.414	.441	.429	.402	.585	-										
12. Acquiring - Goals and achievements	.476	.511	.389	.386	.437	.551	.648	.66	.55	.668	.483	-									
13. Acquiring - History	.371	.313	.326	.348	.444	.334	.353	.523	.422	.525	.502	.469	-								
14. Saving - Alleviating social insecurity	.541	.545	.462	.45	.506	.548	.644	.931	.508	.659	.415	.592	.53	-							
15. Saving - Avoiding mistakes	.603	.556	.584	.48	.595	.597	.642	.552	.422	.844	.502	.567	.405	.583	-						
16. Saving - Coping	.584	.588	.535	.453	.521	.625	.847	.711	.511	.732	.521	.654	.485	.719	.696	-					
17. Saving - Sentimental	.403	.381	.388	.317	.403	.431	.46	.427	.468	.556	.717	.56	.424	.439	.633	.518	-				
18. Saving - Helping others	.415	.434	.363	.324	.486	.45	.498	.63	.742	.595	.422	.539	.538	.655	.577	.606	.527	-			
19. Saving - History	.406	.347	.37	.366	.462	.378	.38	.476	.402	.562	.505	.472	.809	.509	.55	.485	.544	.574	-		
20. Saving – Self-Identity	.468	.475	.42	.369	.446	.488	.601	.649	.441	.635	.492	.784	.475	.657	.612	.737	.547	.566	.486	-	
21. Saving - Completion	.432	.433	.392	.34	.469	.496	.492	.493	.31	.678	.42	.545	.431	.538	.619	.554	.472	.468	.535	.548	-
22. Saving - Instrumental	.294	.257	.265	.263	.379	.291	.349	.368	.357	.588	.329	.51	.371	.394	.649	.468	.516	.499	.473	.518	.477

Note. CAS = Compulsive Acquisition Scale, SI-R = Saving Inventory – Revised. All correlations were significant (p 's < .001). Bolded numbers are correlations between similar acquiring and saving motivations.

CAS-Buy, except for coping motives, which had a lower correlation for CAS-Free. Saving behaviours (SI-R difficulty discarding) were substantially correlated with MASQ-Saving avoiding mistakes and coping motives (r 's $\geq .54$). The instrumental subscale had the lowest correlation with saving behaviours compared to all other saving motives ($r = .27$). Overall hoarding severity (SI-R total) and clutter symptoms (SI-R clutter) were most related to avoiding mistakes, alleviating social insecurity, and coping motives for both MASQ-Acquiring and MASQ-Saving scales (r 's $\geq .45$).

Dropped items. MASQ items that were not retained after exploratory factor analyses were re-evaluated by examining their correlations with measures of their respective behaviours. Dropped MASQ items demonstrated small to large correlations with measures of behaviours (r ranged from .15-.61). See Appendices L and M for tables of correlations.

Discussion

The aim of this study was to begin the development process for novel theoretically-driven measures of acquiring and saving motivations. As exploratory aims, this study also examined the relationships between acquiring and saving motives, and also examined associations with behaviours and symptoms in order to assess the clinical utility of the measures. I ran exploratory factor analyses on both measures and found that a seven-factor solution was the best fit for the acquiring motives measure, whereas a nine-factor solution was the best fit for the saving motives measure. Although there were no a priori hypotheses about the latent factors that would emerge, some factors unexpectedly did not align with theories of motivation, or contained items that did not conceptually belong together. Therefore, the results of the factor analyses are critical for the refinement and further development of the measure. I now turn to discuss the development of the scales and their psychometric properties in relation to the constructs that were intended to be measured. Also, I will discuss limitations and suggest future directions to continue to improve the measures.

Scale Development

Approach versus avoidance motivations. Unexpectedly, the factor analyses did not result in subscales that differentiated approach from avoidance motivations; rather, they primarily differentiated different types of cognitions. For example, both the MASQ-Acquiring and MASQ-Saving had a subscale labelled “sentimental”, which was comprised of items about the enjoyment of remembering past experiences and feeling nostalgic (i.e., approaching positive incentives) and also about not wanting to forget important memories (i.e., avoiding negative incentives). Similarly, another subscale of the MASQ-Saving was called “completion” and contained items about the enjoyment of matching things and the satisfaction of a complete set of items, while also containing an item about avoiding the frustration of having an incomplete set of items. This might have occurred because there were not enough items about avoidance motivations for sentimental and completion cognitions to be able to form separate factors. Thus, in future iterations of the MASQ, I will generate more items to test whether these constructs can be empirically distinguished from each other.

However, another reason that approach and avoidance motivational items loaded onto the same factors might have been because participants interpreted these items in a similar way. It is possible that, when completing the questionnaire, participants might have responded similarly to these items since they were about the same types of cognitions (e.g., cognitions about sentimentality). This is especially plausible because there were a large number of items and participants may have been reading them briefly and not thinking about them in much depth. Similar responses would have resulted in high correlations between these items, and since exploratory factor analysis examines the pattern of correlations between items (Comrey & Lee, 1992), these items would have loaded onto the same factor. One way to address this issue could be to make the “approach” and “avoidance” aspects more salient to participants. This could be done by changing the order of items, and grouping all

approach items together, thus, visually separating them from all of the avoidance items. Ordering the items in this fashion may signal to participants to process and interpret these items as intended.

Making sure that respondents interpret the items as they were intended is crucial, especially since this measure is intended for use with clinical populations. Since individuals with HD often have poor insight into the severity of their behaviours (Drury, Nordsletten, Ajmi, Fernández de la Cruz, & Mataix-Cols, 2015; Tolin, Fitch, Frost, & Steketee, 2010), they may also have limited insight into the extent of their motivations. Thus, constructing the scale in a fashion that helps these individuals to correctly process the meaning of these items is important. Another possible way of highlighting the approach and avoidance aspects of the items might be to incorporate them into the initial instructions of the scale. See Appendix N for a prototype of this idea; this would involve making slight revisions to all items. Future iterations of the MASQ should therefore examine if different administration methods result in approach and avoidance motivations being empirically distinguished.

Using the current administration method, however, the factor analyses did in some cases split approach and avoidance motivations into different factors. Notably, in the MASQ-Saving, usefulness cognitions split into two factors. The first factor, which was labelled “Avoiding Mistakes”, comprised of items about avoiding the uncertainty of whether something is needed and concerns about throwing away useful things (i.e., avoidance motivations). The second factor, labelled “Instrumental”, comprised of items about how individuals might like to use possessions to gain information, knowledge, and skills (i.e., approach motivations). The distinction between approach and avoidance motivations for usefulness is important because it may distinguish normative from maladaptive saving. Correlational analyses confirmed that the avoiding mistakes subscale was more closely related to difficulties with discarding when compared to the instrumental subscale. This

finding is consistent with previous research which has found that saving behaviours are associated with the avoidance of distress (e.g., Shaw & Timpano, 2016).

In the present study, there were also some factors that emerged which contained items that only captured approach motivations or only avoidance motivations. For example, the MASQ-Saving self-identity subscale contained items only about the saving of possessions that help the individual feel like themselves (i.e., approach motivation). However, there was no avoidance motivation which emerged with similar types of cognitions (i.e., with items such as “*avoid losing a part of myself*” and “*because I can’t live without them*”). This might have happened because there were not enough items which captured these motivations. Thus, in future iterations of the MASQ, more items will be generated to specifically capture these counterpart motivations, and future factor analytic studies will test whether they form distinct factors.

“Odd” items. There were some items that were captured by factors that did not seem to conceptually belong with the rest of the items in the factor. For example, in the goals and achievement subscale in MASQ-Acquiring, the item, “*because beautiful possessions fill me with delight*”, does not belong with the rest of the items which are about the individual’s desire to acquire possessions to fulfil personal goals. All odd items like this were kept in their respective scales because all alphas and item-total correlations were adequate. However, these items will be addressed in future iterations of the MASQ by generating and adding similar items (e.g., about beauty motivations to acquire/save), and then testing whether distinct factors emerge (e.g., a beauty/aesthetic motivation factor).

Dropped items. The majority of dropped items had medium to large correlations with acquiring and saving behaviours, and thus can be considered for retention in future iterations of the MASQ. Most dropped items comprised of cognitions that were already captured by factor analyses; however, not all affective expectancies for these cognitions were captured

(i.e., approach and avoidance motivations). As mentioned earlier, more items will be added to the item pool to see if relevant factors split into approach and avoidance factors. Thus, the relevant items from the dropped item pool will be retained (e.g., items that capture approach and avoidance motives with sentimental, instrumental cognitions). Also, some motives did not emerge in the factor structure of the questionnaires. For example, items about completion in the MASQ-Acquiring did not form a factor; instead, two of the completion items were captured by the subscale about avoiding mistakes, and the third item was dropped. Thus, future iterations of the MASQ will include more items about completion to see if they may form a distinct factor.

Comparisons with Previous Measures

Although the MASQ will be refined in future studies, in its current form it seems to be replicating and outperforming prior measures in terms of capturing more information. In the MASQ-Acquiring, avoiding mistakes, alleviating social insecurity, and coping motives were strongly correlated with compulsive buying symptoms, thus replicating previous research on BSD (Dittmar, Long, & Bond, 2007; Kyrios et al., 2004). In comparison to the Buying Motivations Scale (Dittmar et al., 2004), the MASQ-Acquiring additionally assesses motives for helping others, sentimental, goals and achievement, and history. The assessment of these constructs is especially important for measuring the motivations that may be relevant in HD. Indeed, these new subscales had medium to large correlations with hoarding symptoms. Additionally, the correlations between hoarding symptoms and the motives for coping, sentimental, and avoiding mistakes replicate previous research on HD (e.g., Frost et al., 2015; Shaw & Timpano, 2016).

The MASQ-Saving is also improved because it replicates and extends from the motivations assessed in the Saving Cognitions Inventory (Steketee et al., 2003). Motives for avoiding mistakes, self-identity, sentimental, and history motivations were strongly correlated

with saving and overall hoarding symptoms, and these correlations were comparable to previously observed correlations with the Saving Cognitions Inventory, thus replicating previous research in similar nonclinical samples (e.g., Coles et al., 2003; Yap & Grisham, 2019). The MASQ-Saving additionally assessed motives for alleviating social insecurity, coping, helping others, completion, and instrumental. Avoiding mistakes and coping motives demonstrated strong associations with saving behaviours, thus confirming previous findings that saving is predominantly an avoidance behaviour (e.g., Shaw & Timpano, 2016).

Another important aspect of the MASQ is that similar types of motives emerged from factor analyses for the acquiring and saving item pools, thus allowing the comparison of these motives. Similar motives for acquiring and saving were highly correlated, thus demonstrating convergence of similar motives and also the overlap in acquiring and saving motives. Thus, it seems that people may acquire and save possessions for similar reasons. Additionally, the intercorrelations between the remaining motives subscales were medium to high, thus giving evidence that all of the different motives are somewhat related to each other.

Limitations and Future Directions

It is important to evaluate the present study in light of its limitations. First, all findings are preliminary as this study only involved the initial process of measurement development. Second, the sample might not have been representative of the general population because of the large number of participants who were excluded from analyses. Although excluded participants and included participants did not differ significantly on key demographic variables or levels of psychopathology, the validity of the analyses comparing these participants was limited. This is because the majority of data from excluded participants were assumed to be invalid because most of these participants failed attention check items or completed the survey too quickly. Third, our sample was relatively young and mostly Caucasian. Future research on the MASQ should aim to recruit more diverse samples.

A possible future direction for studies with the MASQ could be to use more direct measures of acquiring and saving behaviours. In the present study, the self-report questionnaires used to measure acquiring and saving behaviours were indirect measures because they measured compulsive acquiring and hoarding symptoms, or rather, the *urge* to acquire and save. Although these measures are strongly correlated with behavioural measures of acquiring and saving (e.g., Levy, Stevens, & Tolin, 2019), future studies could measure acquiring and saving behaviours with more direct questions such as, “*How much money have you spent on buying possessions in the last week?*”, “*How many possessions have you acquired in the last week?*”, and “*How many possessions have you saved in the last week?*”. It may be useful to examine which motives are more related to actual behaviours, rather than symptoms. However, it will still be important to include the measures of symptoms used in the present study because they will help establish the clinical utility of the MASQ.

Conclusion

In summary, the present study completed the initial stages of developing a new theoretically driven measure of acquiring and saving motivations, called the MASQ. Items were first generated from an in-depth literature review, and then were revised based on expert opinion. Exploratory factor analyses on the MASQ revealed latent factors within the item pool and suggested more revisions to the measure to improve its psychometric qualities. Further revisions on the MASQ will also test whether different types of motives can be empirically distinguished in future iterations of the measure. Although the present version of the MASQ is only preliminary, it showed good psychometric qualities in the current study and also showed good associations with compulsive buying and hoarding symptoms. Future research using the MASQ may therefore lead to further insights about the motivations for maladaptive behaviours in these disorders, which could eventually lead to better treatments.

References

- Aknin, L. B., & Human, L. J. (2015). Give a piece of you: Gifts that reflect givers promote closeness. *Journal of Experimental Social Psychology, 60*, 8-16.
- Amazon Mechanical Turk. *Participation Agreement*. (2018, December 17). Retrieved from <https://www.MTurk.com/participation-agreement>.
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC: American Psychiatric Publishing.
- Andreoni, J. (1990). Impure altruism and donations to public goods: A theory of warm-glow giving. *The Economic Journal, 100*(401), 464-477.
- Andrews-McClymont, J. G., Lilienfeld, S. O., & Duke, M. P. (2013). Evaluating an animal model of compulsive hoarding in humans. *Review of General Psychology, 17*(4), 399-419.
- Arditte, K. A., Çek, D., Shaw, A. M., & Timpano, K. R. (2016). The importance of assessing clinical phenomena in Mechanical Turk Research. *Psychological Assessment, 28*(6), 684-691.
- Arnold, M. J., & Reynolds, K. E. (2003). Hedonic shopping motivations. *Journal of Retailing, 79*(2), 77-95.
- Ayers, C. R., Saxena, S., Espejo, E., Twamley, E. W., Granholm, E., & Wetherell, J. L. (2014). Novel treatment for geriatric hoarding disorder: An open trial of cognitive rehabilitation paired with behavior therapy. *The American Journal of Geriatric Psychiatry, 22*(3), 248-252.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Baumann, D., Cialdini, R., & Kendrick, D. (1981). Altruism as hedonism: Helping and self-gratification as equivalent responses. *Journal of Personality and Social Psychology, 40*(6), 1039-1046.

- Beckmann, J., & Heckhausen, H. (2008). Motivation as a function of expectancy and incentive. In J. Heckhausen & H. Heckhausen (Eds.), *Motivation and action* (3rd ed., pp. 163–220). Cham, Switzerland: Springer International Publishing.
- Belk, R. W. (2000). Are we what we own?. In A. L. Benson (Ed.), *I shop, therefore I am: Compulsive buying and the search for self* (pp. 76–104). New York, NY: Rowman & Littlefield Publishers, Inc.
- Belk, R. W. (1976). It's the thought that counts: A signed digraph analysis of gift-giving. *Journal of Consumer Research*, 3(3), 155-162.
- Belk, R. W., & Coon, G. S. (1993). Gift giving as agapic love: An alternative to the exchange paradigm based on dating experiences. *Journal of Consumer Research*, 20(3), 393-417.
- Belk, R. W., Sherry Jr, J. F., & Wallendorf, M. (1988). A naturalistic inquiry into buyer and seller behavior at a swap meet. *Journal of Consumer Research*, 14(4), 449-470.
- Belk, R. W., Wallendorf, M., & Holbrook, M. B. (1991). Collecting in a consumer culture. In R. W. Belk, (Eds.), *High-ways and byways: Naturalistic research from the consumer behavior odyssey* (pp. 178-215). Provo, Utah: Association for Consumer Research.
- Berger, J., & Heath, C. (2007). Where consumers diverge from others: Identity signaling and product domains. *Journal of Consumer Research*, 34(2), 121-134.
- Berridge, K. C. (2001). Reward learning: Reinforcement, incentives, and expectations. In D. L. Medin (Ed.), *The psychology of learning and motivation: Advances in research and theory*, (Vol. 40, pp. 223-278). San Diego, CA, US: Academic Press.
- Berridge, K. C., & Robinson, T. E. (2016). Liking, wanting, and the incentive-sensitization theory of addiction. *American Psychologist*, 71(8), 670-679.
- Bindra, D. (1974). A motivational view of learning, performance, and behavior modification. *Psychological Review*, 81, 199–213.

Birdwell, A. E. (1968). A study of the influence of image congruence on consumer choice.

The Journal of Business, 41(1), 76-88.

Black, D. W. (2007). A review of compulsive buying disorder. *World Psychiatry*, 6(1), 14.

Bodryzlova, Y., Audet, J. S., Bergeron, K., & O'Connor, K. (2019). Group cognitive-behavioural therapy for hoarding disorder: Systematic review and meta-analysis.

Health & Social Care in the Community, 27(3), 517-530.

Bolles, R. C. (1972). Reinforcement, expectancy, and learning. *Psychological Review*, 79, 394-409.

Bratiotis, C., Steketee, G., Dohn, J., Calderon, C. A., Frost, R. O., & Tolin, D. F. (2019).

Should I keep it? Thoughts verbalized during a discarding task. *Cognitive Therapy and Research*. Advance online publication. doi: [10.1007/s10608-019-10025-y](https://doi.org/10.1007/s10608-019-10025-y)

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data?. *Perspectives on Psychological Science*, 6(1), 3-5.

Burgard, M., & Mitchell, J. E. (2000). Group cognitive behavioural therapy for buying disorder. In A.L. Benson (Ed.), *I shop, therefore I am: Compulsive Buying and the search for self* (pp. 367-397). Northvale, New Jersey: Jason Aronson.

Burgess, A. M., Graves, L. M., & Frost, R. O. (2018). My possessions need me:

Anthropomorphism and hoarding. *Scandinavian Journal of Psychology*, 59(3), 340-348.

Caplow, T. (1982). Christmas gifts and kin networks. *American Sociological Review*, 47(3), 383-392.

Carey, C. (2008). Modeling collecting behavior: The role of set completion. *Journal of Economic Psychology*, 29(3), 336-347.

- Castriotta, N., Dozier, M. E., Taylor, C. T., Mayes, T., & Ayers, C. R. (2019). Intolerance of uncertainty in hoarding disorder. *Journal of Obsessive-Compulsive and Related Disorders*, 21, 97-101.
- Cavanaugh, L. A., Bettman, J. R., & Luce, M. F. (2015). Feeling love and doing more for distant others: Specific positive emotions differentially affect prosocial consumption. *Journal of Marketing Research*, 52(5), 657-673.
- Chan, C., Berger, J., & Van Boven, L. (2012). Identifiable but not identical: Combining social identity and uniqueness motives in choice. *Journal of Consumer Research*, 39(3), 561-573.
- Chandler, J., & Shapiro, D. (2016). Conducting clinical research using crowdsourced convenience samples. *Annual Review of Clinical Psychology*, 12, 53-81.
- Chou, C. Y., Tsoh, J. Y., Shumway, M., Smith, L. C., Chan, J., Delucchi, K., ... & Mathews, C. A. (2019). Treating hoarding disorder with compassion-focused therapy: A pilot study examining treatment feasibility, acceptability, and exploring treatment effects. *British Journal of Clinical Psychology*. Advance Online Publication. doi: [10.1111/bjc.12228](https://doi.org/10.1111/bjc.12228)
- Christenson, G. A., Faber, R. J., de Zwaan, M., Raymond, N. C., Specker, S. M., Ekern, M. D., ... & Eckert, E. D. (1994). Compulsive buying: Descriptive characteristics and psychiatric comorbidity. *The Journal of Clinical Psychiatry*, 55(1), 5-11.
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7(3), 309-319.
- Clark, L. A., & Watson, D. (2019). Constructing validity: New developments in creating objective measuring instruments. *Psychological Assessment*. Advance online publication. doi: [10.1037/pas0000626](https://doi.org/10.1037/pas0000626)

- Coles, M. E., Frost, R. O., Heimberg, R. G., & Steketee, G. (2003). Hoarding behaviors in a large college sample. *Behaviour Research and Therapy*, 41(2), 179-194.
- Comrey, A. L. (1988). Factor-analytic methods of scale development in personality and clinical psychology. *Journal of Consulting and Clinical Psychology*, 56(5), 754-761.
- Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis* (2nd ed.). Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.
- Craske, M. G., Treanor, M., Conway, C. C., Zbozinek, T., & Vervliet, B. (2014). Maximizing exposure therapy: An inhibitory learning approach. *Behaviour Research and Therapy*, 58, 10-23.
- Crilly, N., Moultrie, J., & Clarkson, P. J. (2004). Seeing things: Consumer response to the visual domain in product design. *Design Studies*, 25(6), 547-577.
- Dittmar, H. (2005). Compulsive buying—a growing concern? An examination of gender, age, and endorsement of materialistic values as predictors. *British Journal of Psychology*, 96(4), 467-491.
- Dittmar, H. (1991). Meanings of material possessions as reflections of identity: Gender and social-material position in society. *Journal of Social Behavior & Personality*, 6(6), 165-186.
- Dittmar, H. (2004). Understanding and diagnosing compulsive buying. In R. Coombs (Ed.), *Addictive disorders: A guide to diagnosis and treatment*. New York: Wiley.
- Dittmar, H., Long, K., & Bond, R. (2007). When a better self is only a button click away: Associations between materialistic values, emotional and identity-related buying motives, and compulsive buying tendency online. *Journal of Social and Clinical Psychology*, 26(3), 334-361.
- Dittmar, H., Long, K., & Meek, R. (2004). Buying on the Internet: Gender differences in on-line and conventional buying motivations. *Sex Roles*, 50(5-6), 423-444.

- Dozier, M. E., & Ayers, C. R. (2014). The predictive value of different reasons for saving and acquiring on hoarding disorder symptoms. *Journal of Obsessive-Compulsive and Related Disorders*, 3(3), 220-227.
- Dozier, M. E., Taylor, C. T., Castriotta, N., Mayes, T. L., & Ayers, C. R. (2017). A preliminary investigation of the measurement of object interconnectedness in hoarding disorder. *Cognitive Therapy and Research*, 41(5), 799-805.
- Drury, H., Nordsletten, A. E., Ajmi, S., de la Cruz, L. F., & Mataix-Cols, D. (2015). Accuracy of self and informant reports of symptom severity and insight in hoarding disorder. *Journal of Obsessive-Compulsive and Related Disorders*, 5, 37-42.
- Dunn, E. W., Aknin, L. B., & Norton, M. I. (2008). Spending money on others promotes happiness. *Science*, 319(5870), 1687-1688.
- Edwards, W. (1954). The theory of decision-making. *Psychological Bulletin*, 51, 380-417.
- Epley, N., Waytz, A., & Cacioppo, J. T. (2007). On seeing human: A three-factor theory of anthropomorphism. *Psychological Review*, 114(4), 864-886.
- Faber, R. J. (2010). Impulsive and compulsive buying. In J. Sheth & N. Malhotra (Eds.), *Wiley international encyclopedia of marketing* (pp. 306-312). New York: Wiley.
- Faber, R. J., & O'Guinn, T. C. (1988). Compulsive consumption and credit abuse. *Journal of Consumer Policy*, 11(1), 97-109.
- Faber, R. J., O'Guinn, T. C., & Krych, R. (1987). Compulsive consumption. In M. Wallendorf, & P. Anderson (Eds.), *Advances in consumer research* (pp. 132-135). Provo, UT: Association for Consumer Research.
- Fandos, C., & Flavian, C. (2006). Intrinsic and extrinsic quality attributes, loyalty and buying intention: An analysis for a PDO product. *British Food Journal*, 108(8), 646-662.

- Finch, J. F., & West, S. G. (1997). The investigation of personality structure: Statistical models. *Journal of Research in Personality*, 31(4), 439-485.
- Flynn, F. J. (2003). How much should I give and how often? The effects of generosity and frequency of favor exchange on social status and productivity. *Academy of Management Journal*, 46(5), 539-553.
- Formanek, R. (1991). Why they collect: Collectors reveal their motivations. *Journal of Social Behavior and Personality*, 6(6), 275.
- Frost, R. O., Gabrielson, I., Deady, S., Dernbach, K. B., Guevara, G., Peebles-Dorin, M., ... & Grisham, J. R. (2018). Scrupulosity and hoarding. *Comprehensive Psychiatry*, 86, 19-24.
- Frost, R. O., & Gross, R. C. (1993). The hoarding of possessions. *Behaviour Research and Therapy*, 31(4), 367-381.
- Frost, R. O., & Hartl, T. L. (1996). A cognitive-behavioral model of compulsive hoarding. *Behaviour Research and Therapy*, 34(4), 341-350.
- Frost, R. O., Hartl, T. L., Christian, R., & Williams, N. (1995). The value of possessions in compulsive hoarding: Patterns of use and attachment. *Behaviour Research and Therapy*, 33(8), 897-902.
- Frost, R. O., Kim, H. J., Morris, C., Bloss, C., Murray-Close, M., & Steketee, G. (1998). Hoarding, compulsive buying and reasons for saving. *Behaviour Research and Therapy*, 36(7-8), 657-664.
- Frost, R. O., Ruby, D., & Shuer, L. J. (2012). The buried in treasures workshop: Waitlist control trial of facilitated support groups for hoarding. *Behaviour Research and Therapy*, 50(11), 661-667.
- Frost, R. O., & Shows, D. L. (1993). The nature and measurement of compulsive indecisiveness. *Behaviour Research and Therapy*, 31(7), 683-692.

- Frost, R. O., & Steketee, G. (2008). Compulsive hoarding. In J. S. Abramowitz, D. McKay, & S. Taylor (Eds.), *Obsessive-compulsive disorder: Subtypes and spectrum conditions* (pp. 76–93). New York, NY: Elsevier.
- Frost, R. O., Steketee, G., & Grisham, J. (2004). Measurement of compulsive hoarding: Saving inventory-revised. *Behaviour Research and Therapy*, 42(10), 1163-1182.
- Frost, R. O., Tolin, D. F., Steketee, G., & Oh, M. (2011). Indecisiveness and hoarding. *International Journal of Cognitive Therapy*, 4(3), 253-262.
- Frost, R. O., Steketee, G., Tolin, D. F., Sinopoli, N., & Ruby, D. (2015). Motives for acquiring and saving in hoarding disorder, OCD, and community controls. *Journal of Obsessive-Compulsive and Related Disorders*, 4, 54-59.
- Frost, R. O., Steketee, G., & Williams, L. (2002). Compulsive buying, compulsive hoarding, and obsessive-compulsive disorder. *Behavior Therapy*, 33(2), 201-214.
- Frost, R. O., Tolin, D. F., Steketee, G., Fitch, K. E., & Selbo-Bruns, A. (2009). Excessive acquisition in hoarding. *Journal of Anxiety Disorders*, 23(5), 632-639.
- Furby, L. (1978a). Possessions: Toward a theory of their meaning and function throughout the life cycle. In P. B. Baltes (Ed.), *Life Span Development and Behavior* (pp. 297-336). New York: Academic Press.
- Furby, L. (1978b). Possession in humans: An exploratory study of its meaning and motivation. *Social Behavior and Personality*, 6(1), 49-65.
- Gilliam, C. M., Norberg, M. M., Villavicencio, A., Morrison, S., Hannan, S. E., & Tolin, D. F. (2011). Group cognitive-behavioral therapy for hoarding disorder: An open trial. *Behaviour Research and Therapy*, 49(11), 802-807.
- Greenberg, D. (1987). Compulsive hoarding. *American Journal of Psychotherapy*, 41(3), 409-416.

- Grisham, J. R., & Barlow, D. H. (2005). Compulsive hoarding: Current research and theory. *Journal of Psychopathology and Behavioral Assessment*, 27(1), 45-52.
- Grisham, J. R., Steketee, G., & Frost, R. O. (2008). Interpersonal problems and emotional intelligence in compulsive hoarding. *Depression and Anxiety*, 25(9), E63-E71.
- Hague, B., Hall, J., & Kellett, S. (2016). Treatments for compulsive buying: A systematic review of the quality, effectiveness and progression of the outcome evidence. *Journal of Behavioral Addictions*, 5(3), 379-394.
- Hartl, T. L., Duffany, S. R., Allen, G. J., Steketee, G., & Frost, R. O. (2005). Relationships among compulsive hoarding, trauma, and attention-deficit/hyperactivity disorder. *Behaviour Research and Therapy*, 43(2), 269-276.
- Hartl, T. L., Frost, R. O., Allen, G. J., Deckersbach, T., Steketee, G., Duffany, S. R., & Savage, C. R. (2004). Actual and perceived memory deficits in individuals with compulsive hoarding. *Depression and Anxiety*, 20(2), 59-69.
- Haws, K. L., Naylor, R. W., Coulter, R. A., & Bearden, W. O. (2012). Keeping it all without being buried alive: Understanding product retention tendency. *Journal of Consumer Psychology*, 22(2), 224-236.
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika*, 30(2), 179-185.
- Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, 3(4), 424-453.
- Hull, C. L. (1943). *Principles of behavior*. New York: Appleton-Century-Crofts.
- IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.
- Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement*, 20(1), 141-151.

- Kaiser, H. F., & Rice, J. (1974). Little jiffy, mark IV. *Educational and Psychological Measurement*, 34(1), 111-117.
- Kellett, S., & Bolton, J. V. (2009). Compulsive buying: A cognitive-behavioural model. *Clinical Psychology & Psychotherapy: An International Journal of Theory & Practice*, 16(2), 83-99.
- Kellman-McFarlane, K., Stewart, B., Woody, S., Ayers, C., Dozier, M., Frost, R. O., ... & Welsted, A. (2019). Saving inventory-Revised: Psychometric performance across the lifespan. *Journal of Affective Disorders*, 252, 358-364.
- Kings, C. A., Knight, T., & Moulding, R. (2018). Using photo-elicitation and interpretative phenomenological analysis to explore possessions as links to self-concept and the identities of others in hoarding disorder. *Psychology and Psychotherapy: Theory, Research and Practice*. Advance online publication. doi: [10.1111/papt.12211](https://doi.org/10.1111/papt.12211)
- Klinger, E. (1975). Consequences of commitment to and disengagement from incentives. *Psychological Review*, 82(1), 1-25.
- Krueger, D.W. (1988). On compulsive shopping and spending: A psychodynamic enquiry. *American Journal of Psychotherapy*, 42, 574-585.
- Krueger, D.W. (2000). The use of money as an action symptom. In A. L. Benson (Ed.), *I shop, therefore I am: Compulsive buying and the search for self* (pp. 288-310). New York, NY: Rowman & Littlefield Publishers, Inc.
- Kukar-Kinney, M., Scheinbaum, A. C., & Schaefer, T. (2016). Compulsive buying in online daily deal settings: An investigation of motivations and contextual elements. *Journal of Business Research*, 69(2), 691-699.
- Kyrios, M. (2014). Psychological models of hoarding. In Frost, R. O., & Steketee, G. (Eds.), *The oxford handbook of hoarding and acquiring* (pp. 206-220). Oxford, NY: Oxford University Press.

- Kyrios, M., Frost, R. O., & Steketee, G. (2004). Cognitions in compulsive buying and acquisition. *Cognitive Therapy and Research*, 28(2), 241-258.
- Kyrios, M., McQueen, P., & Moulding, R. (2013). Experimental analysis of the relationship between depressed mood and compulsive buying. *Journal of Behavior Therapy and Experimental Psychiatry*, 44(2), 194-200.
- Kyrios, M., Mogan, C., Moulding, R., Frost, R. O., Yap, K., & Fassnacht, D. B. (2018). The cognitive-behavioural model of hoarding disorder: Evidence from clinical and non-clinical cohorts. *Clinical Psychology & Psychotherapy*, 25(2), 311-321.
- Landon Jr, E. L. (1974). Self concept, ideal self concept, and consumer purchase intentions. *Journal of Consumer Research*, 1(2), 44-51.
- Lee, C. P., & Trace, C. B. (2009). The role of information in a community of hobbyist collectors. *Journal of the American Society for Information Science and Technology*, 60(3), 621-637.
- Leite, P. L., Pereira, V. M., Nardi, A. E., & Silva, A. C. (2014). Psychotherapy for compulsive buying disorder: A systematic review. *Psychiatry Research*, 219(3), 411-419.
- Lejoyeux, M., Haberman, N., Solomon, J., & Adès, J. (1999). Comparison of buying behavior in depressed patients presenting with or without compulsive buying. *Comprehensive Psychiatry*, 40(1), 51-56.
- Levy, H. C., Stevens, M. C., & Tolin, D. F. (2019). Validation of a behavioral measure of acquiring and discarding in hoarding disorder. *Journal of Psychopathology and Behavioral Assessment*, 41(1), 135-143.
- Lewin, K. (1951). *Field theory in social science*. Chicago: University of Chicago Press.
- Long, M. M., & Schiffman, L. G. (1997). Swatch fever: An allegory for understanding the paradox of collecting. *Psychology & Marketing*, 14(5), 495-509.

- Luchian, S. A., McNally, R. J., & Hooley, J. M. (2007). Cognitive aspects of nonclinical obsessive-compulsive hoarding. *Behaviour Research and Therapy*, 45(7), 1657-1662.
- Lynn, M. (1989). Scarcity effects on desirability: Mediated by assumed expensiveness?. *Journal of Economic Psychology*, 10(2), 257-274.
- Mathes, B. M., Oglesby, M. E., Short, N. A., Portero, A. K., Raines, A. M., & Schmidt, N. B. (2017). An examination of the role of intolerance of distress and uncertainty in hoarding symptoms. *Comprehensive Psychiatry*, 72, 121-129.
- McDonald, M. K., Borntrager, C. F., & Rostad, W. (2014). Measuring trauma: Considerations for assessing complex and non-PTSD criterion a childhood trauma. *Journal of Trauma & Dissociation*, 15(2), 184-203.
- McElroy, S. L., Keck, P. E., Pope, H. G., Smith, J. M. R., & Strakowski, S. M. (1994). Compulsive buying: A report of 20 cases. *The Journal of Clinical Psychiatry*, 55(6), 242-248.
- McIntosh, W. D., & Schmeichel, B. (2004). Collectors and collecting: A social psychological perspective. *Leisure Sciences*, 26(1), 85-97.
- Medard, E., & Kellett, S. (2014). The role of adult attachment and social support in hoarding disorder. *Behavioural and Cognitive Psychotherapy*, 42(5), 629-633.
- Miltenberger, R. G., Redlin, J., Crosby, R., Stickney, M., Mitchell, J., Wonderlich, S., ... & Smyth, J. (2003). Direct and retrospective assessment of factors contributing to compulsive buying. *Journal of Behavior Therapy and Experimental Psychiatry*, 34(1), 1-9.
- Mitchell, J. E., Burgard, M., Faber, R., Crosby, R. D., & de Zwaan, M. (2006). Cognitive behavioral therapy for compulsive buying disorder. *Behaviour Research and Therapy*, 44(12), 1859-1865.

- Mortimer, G., Bougoure, U. S., & Fazal-E-Hasan, S. (2015). Development and validation of the Self-Gifting Consumer Behaviour scale. *Journal of Consumer Behaviour*, 14(3), 165-179.
- Moulding, R., Duong, A., Nedeljkovic, M., & Kyrios, M. (2017). Do you think that money can buy happiness? A review of the role of mood, materialism, self, and cognitions in compulsive buying. *Current Addiction Reports*, 4(3), 254-261.
- Moulding, R., Nedeljkovic, M., Kyrios, M., Osborne, D., & Mogan, C. (2017). Short-term cognitive-behavioural group treatment for hoarding disorder: A naturalistic treatment outcome study. *Clinical Psychology & Psychotherapy*, 24(1), 235-244.
- Mowrer, H. O. (1960). *Learning theory and behavior*. New York: Wiley.
- Müller, A., Brand, M., Claes, L., Demetrovics, Z., de Zwaan, M., Fernández-Aranda, F., ... & Mitchell, J. E. (2019). Buying-shopping disorder—is there enough evidence to support its inclusion in ICD-11?. *CNS Spectrums*, 1-6.
- Müller A., & Mitchell, J. E. (2011). *Compulsive buying: clinical foundations and treatment*. New York: Routledge.
- Müller, A., Mitchell, J. E., Crosby, R. D., Cao, L., Johnson, J., Claes, L., & de Zwaan, M. (2012). Mood states preceding and following compulsive buying episodes: an ecological momentary assessment study. *Psychiatry Research*, 200(2-3), 575-580.
- Müller, A., Müller, U., Albert, P., Mertens, C., Silberman, A., Mitchell, J. E., & De Zwaan, M. (2007). Hoarding in a compulsive buying sample. *Behaviour Research and Therapy*, 45(11), 2754-2763.
- Müller, A., Müller, U., Silberman, A., Reinecker, H., Bleich, S., & Mitchell, J. E. (2008). A randomized, controlled trial of group cognitive-behavioral therapy for compulsive buying disorder: Posttreatment and 6-month follow-up results. *The Journal of Clinical Psychiatry*, 69(7), 1131-1138.

- Muroff, J., Steketee, G., Bratnietis, C., & Ross, A. (2012). Group cognitive and behavioral therapy and bibliotherapy for hoarding: A pilot trial. *Depression and Anxiety*, 29(7), 597-604.
- Muroff, J., Underwood, P., & Steketee, G. (2014). *Group treatment for hoarding disorder*. New York: Oxford University Press.
- Muthén, L.K., & Muthén, B.O. (2017). *Mplus User's Guide* (8th ed.). Los Angeles, CA: Muthén & Muthén.
- Neave, N., Jackson, R., Saxton, T., & Hönekopp, J. (2015). The influence of anthropomorphic tendencies on human hoarding behaviours. *Personality and Individual Differences*, 72, 214-219.
- Neave, N., Tyson, H., McInnes, L., & Hamilton, C. (2016). The role of attachment style and anthropomorphism in predicting hoarding behaviours in a non-clinical sample. *Personality and Individual Differences*, 99, 33-37.
- Nedelisky, A., & Steele, M. (2009). Attachment to people and to objects in obsessive-compulsive disorder: An exploratory comparison of hoarders and non-hoarders. *Attachment & Human Development*, 11(4), 365-383.
- Nicolai, J., Darancó, S., & Moshagen, M. (2016). Effects of mood state on impulsivity in pathological buying. *Psychiatry Research*, 244, 351-356.
- Norberg, M. M., Crone, C., Kwok, C., & Grisham, J. R. (2018). Anxious attachment and excessive acquisition: The mediating roles of anthropomorphism and distress intolerance. *Journal of Behavioral Addictions*, 7(1), 171-180.
- Norberg, M. M., Keyan, D., & Grisham, J. R. (2015). Mood influences the relationship between distress intolerance and discarding. *Journal of Obsessive-Compulsive and Related Disorders*, 6, 77-82.

- Norberg, M. M., Newins, A. R., Mills, L., & Ham, L. S. (2017). Psychometric validation of the Anticipated Effects of Alcohol Mixed with Energy Drinks Scale. *Psychological Assessment, 29*(12), 1505-1516.
- Nordsletten, A. E., & Mataix-Cols, D. (2012). Hoarding versus collecting: Where does pathology diverge from play?. *Clinical Psychology Review, 32*(3), 165-176.
- Oglesby, M. E., Medley, A. N., Norr, A. M., Capron, D. W., Korte, K. J., & Schmidt, N. B. (2013). Intolerance of uncertainty as a vulnerability factor for hoarding behaviors. *Journal of Affective Disorders, 145*(2), 227-231.
- O'Guinn, T. C., & Faber, R. J. (1989). Compulsive buying: A phenomenological exploration. *Journal of Consumer Research, 16*(2), 147-157.
- Park, H. J., & Burns, D. L. (2005). Fashion orientation, credit card use, and compulsive buying. *Journal of Consumer Marketing, 22*(3), 135-141.
- Peak, H. (1955). Attitude and motivation. In M. R. Jones (Ed.), *Nebraska symposium on motivation* (pp. 149–189). Lincoln: University of Nebraska Press.
- Perri, M. G. (1985). Self-change strategies for the control of smoking, obesity, and problem drinking. In S. Shiffman & T. A. Wills (Eds.), *Coping and substance abuse* (pp. 295-317). Orlando, FL: Academic Press.
- Phung, P. J., Moulding, R., Taylor, J. K., & Nedeljkovic, M. (2015). Emotional regulation, attachment to possessions and hoarding symptoms. *Scandinavian Journal of Psychology, 56*(5), 573-581.
- Pooler, J. (2003). *Why we shop: Emotional rewards and retail strategies*. London: Praeger.
- Price, L. L., Arnould, E. J., & Curasi, C. F. (2000). Older consumers' disposition of special possessions. *Journal of Consumer Research, 27*(2), 179-201.
- Richins, M. L. (1994). Special possessions and the expression of material values. *Journal of Consumer Research, 21*(3), 522-533.

- Ridgway, N. M., Kukar-Kinney, M., & Monroe, K. B. (2008). An expanded conceptualization and a new measure of compulsive buying. *Journal of Consumer Research*, 35(4), 622-639.
- Rose, P., & Segrist, D. J. (2012). Difficulty identifying feelings, distress tolerance and compulsive buying: Analyzing the associations to inform therapeutic strategies. *International Journal of Mental Health and Addiction*, 10(6), 927-935.
- Rotter, J. B. (1954). Social learning and clinical psychology. Englewood Cliffs, NJ: Prentice-Hall.
- Rouse, S. V. (2015). A reliability analysis of Mechanical Turk data. *Computers in Human Behavior*, 43, 304-307.
- Ruth, J. A., Otnes, C. C., & Brunel, F. F. (1999). Gift receipt and the reformulation of interpersonal relationships. *Journal of Consumer Research*, 25(4), 385-402.
- Scherhorn, G. (1990). The addictive trait in buying behaviour. *Journal of Consumer Policy*, 13(1), 33-51.
- Scherhorn, G., Reisch, L. A., & Raab, G. (1990). Addictive buying in West Germany: An empirical study. *Journal of consumer policy*, 13(4), 355-387.
- Schlosser, S., Black, D. W., Repertinger, S., & Freet, D. (1994). Compulsive buying: Demography, phenomenology, and comorbidity in 46 subjects. *General Hospital Psychiatry*, 16(3), 205-212.
- Shao, W., Grace, D., & Ross, M. (2019). Consumer motivation and luxury consumption: Testing moderating effects. *Journal of Retailing and Consumer Services*, 46, 33-44.
- Shaw, A. M. (2017). *The Role of Negative and Positive Emotional Reactions in Hoarding Symptomatology*. (Doctoral dissertation, University of Miami). Retrieved from: https://scholarlyrepository.miami.edu/oa_dissertations/1888

- Shaw, A. M., Llabre, M. M., & Timpano, K. R. (2015). Affect intolerance and hoarding symptoms: A structural equation modeling approach. *International Journal of Cognitive Therapy, 8*(3), 222-238.
- Shaw, A. M., & Timpano, K. R. (2016). An experimental investigation of the effect of stress on saving and acquiring behavioral tendencies: The role of distress tolerance and negative urgency. *Behavior Therapy, 47*(1), 116-129.
- Shaw, A. M., Timpano, K. R., Steketee, G., Tolin, D. F., & Frost, R. O. (2015). Hoarding and emotional reactivity: The link between negative emotional reactions and hoarding symptomatology. *Journal of Psychiatric Research, 63*, 84-90.
- Simms, L. J., Zelazny, K., Williams, T. F., & Bernstein, L. (2019). Does the number of response options matter? Psychometric perspectives using personality questionnaire data. *Psychological Assessment, 31*(4), 557-566.
- Simons, J. S., & Gaher, R. M. (2005). The Distress Tolerance Scale: Development and validation of a self-report measure. *Motivation and Emotion, 29*(2), 83-102.
- Skinner, B. F. (1951). *Science and human behavior*. Pearson Education, Inc.
- Small, D. A., & Cryder, C. (2016). Prosocial consumer behavior. *Current Opinion in Psychology, 10*, 107-111.
- Spaid, B. I. (2018). Exploring consumer collecting behavior: A conceptual model and research agenda. *Journal of Consumer Marketing, 35*(6), 653-662.
- Spence, K. W. (1956). *Behavior theory and conditioning*. New Haven, CT: Yale University Press.
- Steketee, G., & Frost, R. O. (2003). Compulsive hoarding: Current status of the research. *Clinical Psychology Review, 23*(7), 905-927.
- Steketee, G., Frost, R. O., & Kyrios, M. (2003). Cognitive aspects of compulsive hoarding. *Cognitive Therapy and Research, 27*(4), 463-479.

- Stevens, J. P. (2002). *Applied multivariate statistics for social sciences* (4th ed.). Hillsdale, NJ: Erlbaum.
- Taylor, J. K., Theiler, S., Nedeljkovic, M., & Moulding, R. (2019). A qualitative analysis of emotion and emotion regulation in hoarding disorder. *Journal of Clinical Psychology*, 75(3), 520-545.
- Timpano, K. R., Buckner, J. D., Richey, J. A., Murphy, D. L., & Schmidt, N. B. (2009). Exploration of anxiety sensitivity and distress tolerance as vulnerability factors for hoarding behaviors. *Depression and Anxiety*, 26(4), 343-353.
- Timpano, K. R., Keough, M. E., Traeger, L., & Schmidt, N. B. (2011). General life stress and hoarding: Examining the role of emotional tolerance. *International Journal of Cognitive Therapy*, 4(3), 263-279.
- Timpano, K. R., & Shaw, A. M. (2013). Conferring humanness: The role of anthropomorphism in hoarding. *Personality and Individual Differences*, 54(3), 383-388.
- Timpano, K. R., Shaw, A. M., Coughle, J. R., & Fitch, K. E. (2014). A multifaceted assessment of emotional tolerance and intensity in hoarding. *Behavior Therapy*, 45(5), 690-699.
- Tolin, D. F., Fitch, K. E., Frost, R. O., & Steketee, G. (2010). Family informants' perceptions of insight in compulsive hoarding. *Cognitive Therapy and Research*, 34(1), 69-81.
- Tolin, D. F., Frost, R. O., Steketee, G., & Fitch, K. E. (2008). Family burden of compulsive hoarding: results of an internet survey. *Behaviour Research and Therapy*, 46(3), 334-344.
- Tolin, D. F., Frost, R. O., Steketee, G., & Muroff, J. (2015). Cognitive behavioral therapy for hoarding disorder: A meta-analysis. *Depression and Anxiety*, 32(3), 158-166.

- Tolman, E. C. (1932). *Purposive behavior in animals and men*. New York, NY: Appleton-Century.
- Trotzke, P., Brand, M., & Starcke, K. (2017). Cue-reactivity, craving, and decision making in buying disorder: A review of the current knowledge and future directions. *Current Addiction Reports*, 4(3), 246-253.
- Vaillant, G. E. (1983). *The natural course of alcoholism: Causes, patterns, and paths to recovery*. Cambridge: Harvard University Press.
- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Walter, S. L., Seibert, S. E., Goering, D., & O'Boyle, E. H. (2019). A tale of two sample sources: Do results from online panel data and conventional data converge?. *Journal of Business and Psychology*, 34(4), 425-452.
- Wheaton, M. G., Abramowitz, J. S., Franklin, J. C., Berman, N. C., & Fabricant, L. E. (2011). Experiential avoidance and saving cognitions in the prediction of hoarding symptoms. *Cognitive Therapy and Research*, 35(6), 511-516.
- White, K., & Argo, J. J. (2011). When imitation doesn't flatter: The role of consumer distinctiveness in responses to mimicry. *Journal of Consumer Research*, 38(4), 667-680.
- Woody, S. R., Kellman-McFarlane, K., & Welsted, A. (2014). Review of cognitive performance in hoarding disorder. *Clinical Psychology Review*, 34(4), 324-336.
- Yap, K., & Grisham, J. R. (2019). Unpacking the construct of emotional attachment to objects and its association with hoarding symptoms. *Journal of Behavioral Addictions*. Advance online publication. doi: [10.1556/2006.8.2019.15](https://doi.org/10.1556/2006.8.2019.15)
- Zoldberg, V. L. (1995). The collection despite barnes: From private preserve to blockbuster. In S. M. Pearce (Eds.), *Art in museums* (pp. 94-108). London: The Athlone Press.

Appendix A

Initial Item Pool

I acquire/save possessions:

1. Because I am afraid I may need them in the future.
2. Because I am excited to use them in the future.
3. Because I enjoy their usefulness.
4. Because I am uncertain about whether they will be needed.
5. Because I am uncertain about whether I will be able to find/replace them.
6. To avoid the annoyance of trying to find/replace them in the future.
7. To feel confident that I am prepared for any situation.
8. To avoid feeling distressed from being unprepared.
9. Because I enjoy thinking about how much they will be worth in the future.
10. To enjoy the financial investment.
11. Because I enjoy a good bargain.
12. Because I am afraid to miss out on a good deal.
13. Because doing so feels like I'm saving money.
14. To avoid future distress because I wasn't able to give them to the right person.
15. So that others will feel joy when I gift these possessions to them.
16. Because giving gifts feels rewarding.
17. To avoid losing a part of myself.
18. To become the person I want to be.
19. To be more satisfied with myself.
20. To show others that I am interesting.
21. Because owning unique items makes me feel desirable.
22. To avoid feeling insecure.
23. Because it brings meaning to my life.
24. To feel good about myself by impressing others
25. Because these possessions make me who I am.
26. To avoid feeling like a boring person.
27. To create a legacy that I can be proud of.
28. Because it makes me feel successful.
29. Because doing so compensates for feeling unsuccessful.
30. To use them to be more capable.
31. Because it allows me to challenge myself.
32. To avoid feeling incompetent.
33. To make others feel jealous.
34. To compensate for feeling insecure with a part of my life.
35. To compensate for not being who I want to be.
36. So people will respect me.
37. To avoid being embarrassed by not owning unique items.
38. To feel connected to other people.
39. To avoid displeasing others.
40. So that others will respect me for being in control.

41. So that others respect me for passing something meaningful down to the next generation.
42. To avoid upsetting other people.
43. So that I will not feel ignored by other people.
44. To receive attention from others.
45. So that I can feel like I belong with a group of people.
46. Because it opens me up to meeting people with shared interests.
47. To feel close to other people.
48. So that others will like me.
49. So that people will care about me.
50. To avoid forgetting something/someone personally significant.
51. So that I can enjoy remembering the experiences I have had.
52. To feel good about myself for having access to information.
53. Because not doing so would make me feel bad for losing the information contained within it.
54. Because others will be disappointed if I don't have/lose the information.
55. Because I feel obligated to preserve a piece of history.
56. Because I would feel ashamed if I lost a historical artefact.
57. To feel nostalgic about the past.
58. Because it allows me to connect to a piece of history.
59. Because it will eventually allow someone else to connect to a piece of history.
60. So that I can enjoy things that are special to me.
61. Because they bring me joy.
62. Because I can't live without them.
63. Because beautiful possessions make me feel delighted.
64. To have something that understands the way I feel.
65. So that I can feel proud about an accomplishment.
66. To reward myself for achievements.
67. To avoid feeling ashamed from being wasteful.
68. To avoid feeling bad by letting other people's possessions go to waste.
69. To feel good about reusing/recycling old items.
70. Because I feel guilty when useable possessions go to waste.
71. Because I feel good about prolonging the life of the possessions.
72. To comfort myself.
73. To avoid feeling lonely.
74. Because they help me cope in stressful times.
75. To calm myself when anxious.
76. So that I have them in times of distress.
77. To avoid feeling unhappy.
78. To prevent myself from getting bored.
79. Because it temporarily relieves any distress I am feeling.
80. To cope with stress.
81. Because it feels bad if I don't.
82. To distract myself from stressful concerns in my life.
83. To avoid thinking about something that is troubling me.
84. To avoid being upset by disrespecting my past.

85. To avoid feeling regret in case they could have helped someone.
86. To feel good because I can help someone with them.
87. To use them to comfort others during times of distress.
88. Because they help others cope in stressful times.
89. So others won't feel insecure.
90. To feel joy from making others happy.
91. To prevent others from getting bored.
92. Because I enjoy making others feel good.
93. Because I think others will feel grateful when they can use them.
94. Because not doing so feels like I'm making a mistake.
95. Because I am scared of losing control over my environment.
96. Because I am determined to gain control over my environment.
97. To feel satisfied when I have a complete set of items.
98. Because having an incomplete set of items is frustrating.
99. Because I enjoy how it matches other things.
100. Because I might regret my decision if I don't.
101. Because I like how it makes me feel.

Appendix B

Research Experience in the Expert Panel

Amount of years studied	None		1-5 years		5-10 years		10+ years	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Hoarding Disorder	3	13.6	3	13.6	9	40.9	7	31.8
Compulsive Buying	15	68.2	1	4.5	3	13.6	3	13.6
Collecting	15	68.2	2	9.1	2	9.1	3	13.6
Consumer Behaviour	18	81.8	2	9.1	1	4.5	1	4.5
Motivation	12	54.5	1	4.5	1	4.5	2	9.1

Note. Percentages do not add up to 100 because the experts had multiple research areas. Six experts did not report on whether they had studied motivation because of an error in data collection.

Appendix C

Motivations for Acquiring and Saving Questionnaire (MASQ)

These questions ask you to think about your motivations to **acquire** new possessions (i.e., buying new/used objects or getting items for free). For each statement, indicate how much it applies to you using the following rating scale:

0 = not at all

1 = slightly true

2 = somewhat true

3 = moderately true

4 = strongly true

- | | |
|---|-----------|
| 1. I acquire possessions because I'm afraid I might need them in the future. | 0 1 2 3 4 |
| 2. I acquire possessions because it's helpful to have the information they contain. | 0 1 2 3 4 |
| 3. I acquire possessions because they bring me joy. | 0 1 2 3 4 |
| 4. I acquire possessions to avoid feeling unhappy. | 0 1 2 3 4 |
| 5. I acquire possessions to calm myself when anxious. | 0 1 2 3 4 |
| 6. I acquire possessions because they allow me to gain skills or knowledge. | 0 1 2 3 4 |
| 7. I acquire possessions to avoid feeling incapable. | 0 1 2 3 4 |
| 8. I acquire possessions to distract myself from stressful concerns in my life. | 0 1 2 3 4 |
| 9. I acquire possessions to avoid feeling insecure. | 0 1 2 3 4 |
| 10. I acquire possessions to avoid feeling lonely. | 0 1 2 3 4 |
| 11. I acquire possessions so that I can enjoy things that are special to me. | 0 1 2 3 4 |
| 12. I acquire possessions so that others will like me. | 0 1 2 3 4 |
| 13. I acquire possessions because I'm afraid I'll need the information they contain. | 0 1 2 3 4 |
| 14. I acquire possessions because I enjoy making others feel good. | 0 1 2 3 4 |
| 15. I acquire possessions to use them to comfort others during times of distress. | 0 1 2 3 4 |
| 16. I acquire possessions because I don't want to forget the memories that these possessions represent. | 0 1 2 3 4 |
| 17. I acquire possessions because I like how useful they are. | 0 1 2 3 4 |
| 18. I acquire possessions because it would be annoying to obtain them in the future. | 0 1 2 3 4 |
| 19. I acquire possessions to feel good because I can help someone with them. | 0 1 2 3 4 |
| 20. I acquire possessions because they make me who I am. | 0 1 2 3 4 |
| 21. I acquire possessions because it temporarily relieves any distress I am feeling. | 0 1 2 3 4 |
| 22. I acquire possessions because I'll enjoy gifting them to the right person. | 0 1 2 3 4 |
| 23. I acquire possessions to feel connected to other people. | 0 1 2 3 4 |
| 24. I acquire possessions so people will respect me. | 0 1 2 3 4 |
| 25. I acquire possessions because they bring meaning to my life. | 0 1 2 3 4 |
| 26. I acquire possessions because I like how it makes me feel. | 0 1 2 3 4 |

- | | |
|---|-----------|
| 27. I acquire possessions to become the person I want to be. | 0 1 2 3 4 |
| 28. I acquire possessions because they help others cope in stressful times. | 0 1 2 3 4 |
| 29. I acquire possessions to avoid thinking about something that is troubling me. | 0 1 2 3 4 |
| 30. I acquire possessions because I don't want others to forget me when I'm gone. | 0 1 2 3 4 |
| 31. I acquire possessions to feel nostalgic about my past. | 0 1 2 3 4 |
| 32. I acquire possessions because not doing so feels like I'm making a mistake. | 0 1 2 3 4 |
| 33. I acquire possessions so that I can feel proud about my accomplishments. | 0 1 2 3 4 |
| 34. I acquire possessions because having an incomplete set of items is frustrating. | 0 1 2 3 4 |
| 35. I acquire possessions because I feel bad when useable things go to waste. | 0 1 2 3 4 |
| 36. I acquire possessions so that I can enjoy remembering the experiences I have had. | 0 1 2 3 4 |
| 37. I acquire possessions to avoid being a boring person. | 0 1 2 3 4 |
| 38. I acquire possessions so I can use them to make others jealous. | 0 1 2 3 4 |
| 39. I acquire possessions to prevent myself from getting bored. | 0 1 2 3 4 |
| 40. I acquire possessions because I don't want anyone else to have them. | 0 1 2 3 4 |
| 41. I acquire possessions because they help me cope in stressful times. | 0 1 2 3 4 |
| 42. I acquire possessions to avoid being embarrassed by not owning unique items. | 0 1 2 3 4 |
| 43. I acquire possessions to get attention from others. | 0 1 2 3 4 |
| 44. I acquire possessions to avoid feeling distressed. | 0 1 2 3 4 |
| 45. I acquire possessions because it will eventually allow someone else to connect to a piece of history. | 0 1 2 3 4 |
| 46. I acquire possessions because beautiful possessions fill me with delight. | 0 1 2 3 4 |
| 47. I acquire possessions because it opens me up to meeting people with shared interests. | 0 1 2 3 4 |
| 48. I acquire possessions so others won't ignore me. | 0 1 2 3 4 |
| 49. I acquire possessions because they motivate me to achieve my goals. | 0 1 2 3 4 |
| 50. I acquire possessions so I can pass down something meaningful to the next generation. | 0 1 2 3 4 |
| 51. I acquire possessions to avoid feeling unprepared. | 0 1 2 3 4 |
| 52. I acquire possessions to have something that understands the way I feel. | 0 1 2 3 4 |
| 53. I acquire possessions to feel prepared for any situation. | 0 1 2 3 4 |
| 54. I acquire possessions to show others that I am interesting. | 0 1 2 3 4 |
| 55. I acquire possessions because I am uncertain about whether they will be needed. | 0 1 2 3 4 |
| 56. I acquire possessions because they represent my dreams/goals in life. | 0 1 2 3 4 |
| 57. I acquire possessions because doing so feels like I'm saving money. | 0 1 2 3 4 |
| 58. I acquire possessions to feel satisfied when I have a complete set of items. | 0 1 2 3 4 |
| 59. I acquire possessions because I might regret my decision if I don't. | 0 1 2 3 4 |
| 60. I acquire possessions to feel good about reusing/recycling old items. | 0 1 2 3 4 |
| 61. I acquire possessions to feel good about myself by impressing others. | 0 1 2 3 4 |
| 62. I acquire possessions because it feels bad if I don't. | 0 1 2 3 4 |

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|--|-----------|
| 63. I acquire possessions to comfort myself. | 0 1 2 3 4 |
| 64. I acquire possessions to avoid forgetting something/someone personally significant. | 0 1 2 3 4 |
| 65. I acquire possessions because I like how they might be worth more in the future. | 0 1 2 3 4 |
| 66. I acquire possessions to help me feel more secure about a part of my life. | 0 1 2 3 4 |
| 67. I acquire possessions to avoid displeasing others. | 0 1 2 3 4 |
| 68. I acquire possessions because I feel good about prolonging the life of the possessions. | 0 1 2 3 4 |
| 69. I acquire possessions because others will be disappointed if I don't have/lose the information. | 0 1 2 3 4 |
| 70. I acquire possessions to avoid feeling regret in case they could have helped someone. | 0 1 2 3 4 |
| 71. I acquire possessions because I enjoy how they match other things. | 0 1 2 3 4 |
| 72. I acquire possessions because I feel obligated to preserve a piece of history. | 0 1 2 3 4 |
| 73. I acquire possessions because I'm certain that I need them. | 0 1 2 3 4 |
| 74. I acquire possessions because I think others will feel grateful when they can use them. | 0 1 2 3 4 |
| 75. I acquire possessions to help me feel more like the person I want to be. | 0 1 2 3 4 |
| 76. I acquire possessions for myself to maintain my positive mood. | 0 1 2 3 4 |
| 77. I acquire possessions to reward myself for achievements. | 0 1 2 3 4 |
| 78. I acquire possessions because I like a good bargain. | 0 1 2 3 4 |
| 79. I acquire possessions because I don't want to miss out on things that may be worth more money in the future. | 0 1 2 3 4 |
| 80. I acquire possessions so that I can belong with a group of people. | 0 1 2 3 4 |
| 81. I acquire possessions so others won't feel insecure. | 0 1 2 3 4 |
| 82. I acquire possessions to feel close to other people. | 0 1 2 3 4 |
| 83. I acquire possessions because it allows me to connect to a piece of history. | 0 1 2 3 4 |
| 84. I acquire possessions because I'll be angry if I miss out on a good deal. | 0 1 2 3 4 |
| 85. I acquire possessions because I can't live without them. | 0 1 2 3 4 |
| 86. I acquire possessions because owning unique items makes me feel desirable. | 0 1 2 3 4 |
| 87. I acquire possessions because I would like to fix them. | 0 1 2 3 4 |
| 88. I acquire possessions to avoid feeling unsuccessful. | 0 1 2 3 4 |
| 89. I acquire possessions to be more satisfied with myself. | 0 1 2 3 4 |

These questions ask you to think about your motivations to **save** possessions you already own (i.e., deciding to keep something you already own). Please think about your saving ratings separately from your acquiring ratings because they may not be the same in all cases. For each statement, indicate how much it applies to you using the following rating scale:

0 = not at all

1 = slightly true

2 = somewhat true

3 = moderately true

4 = strongly true

- | | |
|---|-----------|
| 1. I save possessions because I'm afraid I might need them in the future. | 0 1 2 3 4 |
| 2. I save possessions to avoid feeling lonely. | 0 1 2 3 4 |
| 3. I save possessions to prevent myself from getting bored. | 0 1 2 3 4 |
| 4. I save possessions to avoid feeling incapable. | 0 1 2 3 4 |
| 5. I save possessions because it will eventually allow someone else to connect to a piece of history. | 0 1 2 3 4 |
| 6. I save possessions because I enjoy how they match other things. | 0 1 2 3 4 |
| 7. I save possessions to get attention from others. | 0 1 2 3 4 |
| 8. I save possessions because I think others will feel grateful when they can use them. | 0 1 2 3 4 |
| 9. I save possessions to be more satisfied with myself. | 0 1 2 3 4 |
| 10. I save possessions because I feel bad when useable things go to waste. | 0 1 2 3 4 |
| 11. I save possessions to avoid feeling insecure. | 0 1 2 3 4 |
| 12. I save possessions so I can use them to make others jealous. | 0 1 2 3 4 |
| 13. I save possessions so people will respect me. | 0 1 2 3 4 |
| 14. I save possessions because I don't want to forget the memories that these possessions represent. | 0 1 2 3 4 |
| 15. I save possessions to avoid being embarrassed by not owning unique items. | 0 1 2 3 4 |
| 16. I save possessions to avoid being a boring person. | 0 1 2 3 4 |
| 17. I save possessions because they help others cope in stressful times. | 0 1 2 3 4 |
| 18. I save possessions because I don't want anyone else to have them. | 0 1 2 3 4 |
| 19. I save possessions because I might regret my decision if I don't. | 0 1 2 3 4 |
| 20. I save possessions so that I can belong with a group of people. | 0 1 2 3 4 |
| 21. I save possessions so that I can enjoy remembering the experiences I have had. | 0 1 2 3 4 |
| 22. I save possessions to feel connected to other people. | 0 1 2 3 4 |
| 23. I save possessions because they bring me joy. | 0 1 2 3 4 |
| 24. I save possessions because I'll enjoy gifting them to the right person. | 0 1 2 3 4 |
| 25. I save possessions to avoid feeling regret in case they could have helped someone. | 0 1 2 3 4 |
| 26. I save possessions because not doing so feels like I'm making a mistake. | 0 1 2 3 4 |
| 27. I save possessions to become the person I want to be. | 0 1 2 3 4 |
| 28. I save possessions to calm myself when anxious. | 0 1 2 3 4 |
| 29. I save possessions to avoid feeling distressed. | 0 1 2 3 4 |
| 30. I save possessions because beautiful possessions fill me with delight. | 0 1 2 3 4 |

- | | |
|--|-----------|
| 31. I save possessions because others will be disappointed if I don't have/lose the information. | 0 1 2 3 4 |
| 32. I save possessions to feel nostalgic about my past. | 0 1 2 3 4 |
| 33. I save possessions to avoid thinking about something that is troubling me. | 0 1 2 3 4 |
| 34. I save possessions because it makes me feel loved to have gifts from others. | 0 1 2 3 4 |
| 35. I save possessions to avoid disrespecting my past. | 0 1 2 3 4 |
| 36. I save possessions because it temporarily relieves any distress I am feeling. | 0 1 2 3 4 |
| 37. I save possessions to use them to comfort others during times of distress. | 0 1 2 3 4 |
| 38. I save possessions because I can't live without them. | 0 1 2 3 4 |
| 39. I save possessions because I would like to fix them. | 0 1 2 3 4 |
| 40. I save possessions because they represent my dreams/goals in life. | 0 1 2 3 4 |
| 41. I save possessions to feel close to other people. | 0 1 2 3 4 |
| 42. I save possessions because I like how it makes me feel. | 0 1 2 3 4 |
| 43. I save possessions to avoid losing a part of myself. | 0 1 2 3 4 |
| 44. I save possessions to avoid forgetting something/someone personally significant. | 0 1 2 3 4 |
| 45. I save possessions because I like how they might be worth more in the future. | 0 1 2 3 4 |
| 46. I save possessions because having an incomplete set of items is frustrating. | 0 1 2 3 4 |
| 47. I save possessions because they help me cope in stressful times. | 0 1 2 3 4 |
| 48. I save possessions to have something that understands the way I feel. | 0 1 2 3 4 |
| 49. I save possessions because I don't want to waste something that someone else could use. | 0 1 2 3 4 |
| 50. I save possessions so that I can feel proud about my accomplishments. | 0 1 2 3 4 |
| 51. I save possessions because I feel good about prolonging the life of the possessions. | 0 1 2 3 4 |
| 52. I save possessions to show others that I am interesting. | 0 1 2 3 4 |
| 53. I save possessions because I enjoy making others feel good. | 0 1 2 3 4 |
| 54. I save possessions because I would feel ashamed if I lost a historical artefact. | 0 1 2 3 4 |
| 55. I save possessions because it feels bad if I don't. | 0 1 2 3 4 |
| 56. I save possessions to feel good because I can help someone with them. | 0 1 2 3 4 |
| 57. I save possessions because it's helpful to have the information they contain. | 0 1 2 3 4 |
| 58. I save possessions to avoid feeling unprepared. | 0 1 2 3 4 |
| 59. I save possessions because I like how useful they are. | 0 1 2 3 4 |
| 60. I save possessions to avoid feeling unhappy. | 0 1 2 3 4 |
| 61. I save possessions because they make me who I am. | 0 1 2 3 4 |
| 62. I save possessions to comfort myself. | 0 1 2 3 4 |
| 63. I save possessions so that I can enjoy things that are special to me. | 0 1 2 3 4 |
| 64. I save possessions because I'm certain that I need them. | 0 1 2 3 4 |
| 65. I save possessions because I don't want others to forget me when I'm gone. | 0 1 2 3 4 |
| 66. I save possessions because someone else would be angry at me for giving it away. | 0 1 2 3 4 |

- | | | | | | |
|---|---|---|---|---|---|
| 67. I save possessions because I don't want to miss out on things that may be worth more money in the future. | 0 | 1 | 2 | 3 | 4 |
| 68. I save possessions because I'm afraid I'll need the information they contain. | 0 | 1 | 2 | 3 | 4 |
| 69. I save possessions because they allow me to gain skills or knowledge. | 0 | 1 | 2 | 3 | 4 |
| 70. I save possessions to feel good about reusing/recycling old items. | 0 | 1 | 2 | 3 | 4 |
| 71. I save possessions because owning unique items makes me feel desirable. | 0 | 1 | 2 | 3 | 4 |
| 72. I save possessions because it opens me up to meeting people with shared interests. | 0 | 1 | 2 | 3 | 4 |
| 73. I save possessions because I am uncertain about whether they will be needed. | 0 | 1 | 2 | 3 | 4 |
| 74. I save possessions because it allows me to connect to a piece of history. | 0 | 1 | 2 | 3 | 4 |
| 75. I save possessions so that others will like me. | 0 | 1 | 2 | 3 | 4 |
| 76. I save possessions so I can pass down something meaningful to the next generation. | 0 | 1 | 2 | 3 | 4 |
| 77. I save possessions to feel satisfied when I have a complete set of items. | 0 | 1 | 2 | 3 | 4 |
| 78. I save possessions to help me feel more secure about a part of my life. | 0 | 1 | 2 | 3 | 4 |
| 79. I save possessions because I feel obligated to preserve a piece of history. | 0 | 1 | 2 | 3 | 4 |
| 80. I save possessions to avoid displeasing others. | 0 | 1 | 2 | 3 | 4 |
| 81. I save possessions because it would be annoying to obtain them in the future. | 0 | 1 | 2 | 3 | 4 |
| 82. I save possessions so others won't feel insecure. | 0 | 1 | 2 | 3 | 4 |
| 83. I save possessions to feel good about myself by impressing others. | 0 | 1 | 2 | 3 | 4 |
| 84. I save possessions to feel prepared for any situation. | 0 | 1 | 2 | 3 | 4 |
| 85. I save possessions because I would feel guilty about giving up a gift from someone special. | 0 | 1 | 2 | 3 | 4 |
| 86. I save possessions so others won't ignore me. | 0 | 1 | 2 | 3 | 4 |
| 87. I save possessions to avoid feeling unsuccessful. | 0 | 1 | 2 | 3 | 4 |
| 88. I save possessions because doing so feels like I'm saving money. | 0 | 1 | 2 | 3 | 4 |
| 89. I save possessions because they bring meaning to my life. | 0 | 1 | 2 | 3 | 4 |
| 90. I save possessions to help me feel more like the person I want to be. | 0 | 1 | 2 | 3 | 4 |

Appendix D

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

For each question below, circle the number that corresponds most closely to your experience DURING THE PAST WEEK.

0 ----- 1 ----- 2 ----- 3 ----- 4
 None A little A moderate amount Most/Much Almost All/ Complete

- | | | | | | | |
|----|--|---|---|---|---|---|
| 1. | How much of the living area in your home is cluttered with possessions? (Consider the amount of clutter in your kitchen, living room, dining room, hallways, bedrooms, bathrooms, or other rooms). | 0 | 1 | 2 | 3 | 4 |
| 2. | How much control do you have over your urges to acquire possessions? | 0 | 1 | 2 | 3 | 4 |
| 3. | How much of your home does clutter prevent you from using? | 0 | 1 | 2 | 3 | 4 |
| 4. | How much control do you have over your urges to save possessions? | 0 | 1 | 2 | 3 | 4 |
| 5. | How much of your home is difficult to walk through because of clutter? | 0 | 1 | 2 | 3 | 4 |

For each question below, circle the number that corresponds most closely to your experience DURING THE PAST WEEK.

0 ----- 1 ----- 2 ----- 3 ----- 4
 Not at all Mild Moderate Considerable/ Severe Extreme

- | | | | | | | |
|-----|---|---|---|---|---|---|
| 6. | To what extent do you have difficulty throwing things away? | 0 | 1 | 2 | 3 | 4 |
| 7. | How distressing do you find the task of throwing things away? | 0 | 1 | 2 | 3 | 4 |
| 8. | To what extent do you have so many things that your room(s) are cluttered? | 0 | 1 | 2 | 3 | 4 |
| 9. | How distressed or uncomfortable would you feel if you could not acquire something you wanted? | 0 | 1 | 2 | 3 | 4 |
| 10. | How much does clutter in your home interfere with your social, work or everyday functioning? Think about things that you don't do because of clutter. | 0 | 1 | 2 | 3 | 4 |
| 11. | How strong is your urge to buy or acquire free things for which you have no immediate use? | 0 | 1 | 2 | 3 | 4 |
| 12. | To what extent does clutter in your home cause you distress? | 0 | 1 | 2 | 3 | 4 |
| 13. | How strong is your urge to save something you know you may never use? | 0 | 1 | 2 | 3 | 4 |
| 14. | How upset or distressed do you feel about your acquiring habits? | 0 | 1 | 2 | 3 | 4 |
| 15. | To what extent do you feel unable to control the clutter in your home? | 0 | 1 | 2 | 3 | 4 |
| 16. | To what extent has your saving or compulsive buying resulted in financial difficulties for you? | 0 | 1 | 2 | 3 | 4 |

For each question below, circle the number that corresponds most closely to your experience DURING THE PAST WEEK.

0 ----- 1 ----- 2 ----- 3 ----- 4
 Never Rarely Sometimes/
 Occasionally Frequently/
 Often Very Often

- | | | | | | | |
|-----|--|---|---|---|---|---|
| 17. | How often do you avoid trying to discard possessions because it is too stressful or time consuming? | 0 | 1 | 2 | 3 | 4 |
| 18. | How often do you feel compelled to acquire something you see? e.g., when shopping or offered free things? | 0 | 1 | 2 | 3 | 4 |
| 19. | How often do you decide to keep things you do not need and have little space for? | 0 | 1 | 2 | 3 | 4 |
| 20. | How frequently does clutter in your home prevent you from inviting people to visit? | 0 | 1 | 2 | 3 | 4 |
| 21. | How often do you actually buy (or acquire for free) things for which you have no immediate use or need? | 0 | 1 | 2 | 3 | 4 |
| 22. | To what extent does the clutter in your home prevent you from using parts of your home for their intended purpose? For example, cooking, using furniture, washing dishes, cleaning, etc. | 0 | 1 | 2 | 3 | 4 |
| 23. | How often are you unable to discard a possession you would like to get rid of? | 0 | 1 | 2 | 3 | 4 |

Appendix E

Compulsive Acquisition Scale (CAS; Frost et al., 2002)

Please indicate below by circling the number corresponding to the extent to which each of these questions are true for you with “1” meaning “Not at all or Rarely” and “7” meaning “Very Much or Very Often”.

- | | | |
|-----|--|---------------|
| 1. | Do you buy things that you never use? | 1 2 3 4 5 6 7 |
| 2. | Do you buy things you don't have the money for? | 1 2 3 4 5 6 7 |
| 3. | Do you pick things up that other people have discarded? | 1 2 3 4 5 6 7 |
| 4. | Do you feel compelled to buy something (e.g., a good bargain) even though you could do without it? | 1 2 3 4 5 6 7 |
| 5. | Do you feel anxious or depressed when you don't buy something you really wanted? | 1 2 3 4 5 6 7 |
| 6. | Do you buy things to make yourself feel better? | 1 2 3 4 5 6 7 |
| 7. | Do you feel like you absolutely have to have something you see while shopping? | 1 2 3 4 5 6 7 |
| 8. | Do you feel distressed or upset because you've bought things you don't need? | 1 2 3 4 5 6 7 |
| 9. | To what extent do you spend too much time shopping? | 1 2 3 4 5 6 7 |
| 10. | Has excessive shopping resulted in financial difficulties for you? | 1 2 3 4 5 6 7 |
| 11. | Has excessive shopping interfered with your social life or your job? | 1 2 3 4 5 6 7 |
| 12. | Do you look through other people's trash (e.g. dumpsters) for things to bring home? | 1 2 3 4 5 6 7 |
| 13. | Do you spend a longer time shopping than you intended? | 1 2 3 4 5 6 7 |
| 14. | Do you feel compelled to take flyers or handouts from lectures or talks? | 1 2 3 4 5 6 7 |
| 15. | Do you feel compelled to take free copies of magazines or newspapers when they are available? | 1 2 3 4 5 6 7 |
| 16. | Do you buy extra of things just in case you might need them? | 1 2 3 4 5 6 7 |
| 17. | Do you make special trips or collect things that are free or on sale? | 1 2 3 4 5 6 7 |
| 18. | Do you regret not taking something you could have gotten for free? | 1 2 3 4 5 6 7 |

Appendix F

Consent Forms for Student, Community, and MTurk Participants

(STUDENTS) Participant Information and Consent Form

Chief Investigator: A/Prof Melissa Norberg
Department of Psychology, Faculty of Human Sciences
Phone: +61 (2) 9850 8127
Email: melissa.norberg@mq.edu.au

Co-Investigators: Dr Miriam Forbes (miri.forbes@mq.edu.au), Dr Nathan Caruana (nathan.caruana@mq.edu.au), & Mr Jonathan David (jonathan.david@hdr.mq.edu.au)

Study Information

You are invited to participate in a study that investigates the motivations behind saving and acquiring behaviours, object attachment, and anthropomorphism (i.e., attributing human characteristics to inanimate objects). The purpose of this study is to develop new questionnaires that measure these phenomena. This research is being conducted to meet the requirements of Mr Jonathan David's mRes degree under the supervision of A/Prof Melissa Norberg.

If you decide to participate, you will be asked to complete questionnaires that ask you about your saving and acquiring habits, motivations for these behaviours, your attachments to possessions, and your anthropomorphism tendencies. No risks are reasonably expected as a result of your participation in this study. We cannot and do not guarantee or promise that you will receive any benefits from this study. The study should take 40 minutes to complete. After completion, you will be granted 1.5 course credits. You must complete this survey before the SONA deadline for your unit in order to receive reimbursement for this study.

Confidentiality

Any information gathered in the course of the study are confidential, except as required by law. Your data will be anonymous so that you cannot be identified. As such, no individual will be identified in any publication of the results. Your anonymous information will be used for the purpose of this research. Only the Investigators will have immediate access to the data, although it may be made available to other researchers or posted in a public data repository. A plain language statement detailing the study results will be posted on the Centre for Emotional Health website.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence. If you terminate your research participation due to adverse circumstances, please contact jonathan.david@hdr.mq.edu.au

As a research participant you are responsible for:

- Completely reading information and consent forms
- Carefully weighing the risks and benefits of participation
- Knowing when, where, and for how long participation is required
- Contacting the researchers if concerns arise
- Fulfilling the responsibilities as described in the information and consent form

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Do you want to participate in this study in order to receive credit towards PSYC104/105?

- ☐ Yes, I am happy to participate in this research, knowing that I can withdraw at any stage, but I understand I will only receive credit if I register my details at the end of the survey.
- ☐ No, I have changed my mind and will find an alternative study. As such, I understand I will not be given credit for participating in this research.

(COMMUNITY) Participant Information and Consent Form

Chief Investigator: A/Prof Melissa Norberg
Department of Psychology, Faculty of Human Sciences
Phone: +61 (2) 9850 8127
Email: melissa.norberg@mq.edu.au

Co-Investigators: Dr Miriam Forbes (miri.forbes@mq.edu.au), Dr Nathan Caruana (nathan.caruana@mq.edu.au), & Mr Jonathan David (jonathan.david@hdr.mq.edu.au)

Study Information

You are invited to participate in a study that investigates the motivations behind saving and acquiring behaviours, object attachment, and anthropomorphism (i.e., attributing human characteristics to inanimate objects). The purpose of this study is to develop new questionnaires that measure these phenomena. This research is being conducted to meet the requirements of Mr Jonathan David's mRes degree under the supervision of A/Prof Melissa Norberg.

If you decide to participate, you will be asked to complete questionnaires that ask you about your saving and acquiring habits, motivations for these behaviours, your attachments to possessions, and your anthropomorphism tendencies. No risks are reasonably expected as a result of your participation in this study. We cannot and do not guarantee or promise that you

will receive any benefits from this study. The study should take 40 minutes to complete. After completion, you will be offered to enter a draw to win one of three AUD\$50 cash prizes through PayPal. You must complete this survey on time in order to receive reimbursement for this study.

Confidentiality

Any information or personal details gathered in the course of the study are confidential, except as required by law. Your data will be stored de-identified from your contact information so that you cannot be identified. As such, no individual will be identified in any publication of the results. Your de-identified information will be used for the purpose of this research. Only the Investigators will have immediate access to the data, although it may be made available in non-identifiable form to other researchers or posted in a public data repository. A plain language statement detailing the study results will be posted on the Centre for Emotional Health website.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence.

As a research participant you are responsible for:

- Completely reading information and consent forms
- Carefully weighing the risks and benefits of participation
- Knowing when, where, and for how long participation is required
- Contacting the researchers if concerns arise
- Fulfilling the responsibilities as described in the information and consent form

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

After having read and understood the information above, do you consent to participate in this study?

- ☐ Yes, I agree to participate.
- ☐ No, I have changed my mind.

(MTURK) Participant Information and Consent Form

Chief Investigator: A/Prof Melissa Norberg
Department of Psychology, Faculty of Human Sciences

Phone: +61 (2) 9850 8127

Email: melissa.norberg@mq.edu.au

Co-Investigators: Dr Miriam Forbes (miri.forbes@mq.edu.au), Dr Nathan Caruana (nathan.caruana@mq.edu.au), & Mr Jonathan David (jonathan.david@hdr.mq.edu.au)

Study Information

You are invited to participate in a study that investigates the motivations behind saving and acquiring behaviours, object attachment, and anthropomorphism (i.e., attributing human characteristics to inanimate objects). The purpose of this study is to develop new questionnaires that measure these phenomena. This research is being conducted to meet the requirements of Mr Jonathan David's mRes degree under the supervision of A/Prof Melissa Norberg.

If you decide to participate, you will be asked to complete questionnaires that ask you about your saving and acquiring habits, motivations for these behaviours, your attachments to possessions, and your anthropomorphism tendencies. No risks are reasonably expected as a result of your participation in this study. We cannot and do not guarantee or promise that you will receive any benefits from this study. The study should take 40 minutes to complete, after which you will be paid AUD\$10. We have scattered various questions throughout the survey to verify that you are reading our survey and responding honestly to our questions. If you answer these questions incorrectly, you will not be paid for completing this survey.

Confidentiality

Any information gathered in the course of the study are confidential, except as required by law. Your data will be anonymous so that you cannot be identified. As such, no individual will be identified in any publication of the results. Your anonymous information will be used for the purpose of this research. Only the Investigators will have immediate access to the data, although it may be made available to other researchers or posted in a public data repository. A plain language statement detailing the study results will be posted on the Centre for Emotional Health website.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence.

As a research participant you are responsible for:

- Completely reading information and consent forms
- Carefully weighing the risks and benefits of participation
- Knowing when, where, and for how long participation is required
- Contacting the researchers if concerns arise
- Fulfilling the responsibilities as described in the information and consent form

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone +61 (2) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

After having read and understood the information above do you consent to participate in this study?

☐ Yes, I agree to participate, knowing that I can withdraw from further participation in the research at any time without consequence. I understand that I will only be reimbursed if I complete the study completely and accurately. Questions in the survey will gauge if I am reading the questions and answering honestly.

☐ No, I have changed my mind.

Appendix G

Descriptive Statistics for all MASQ-Acquiring Items

Item	<i>N</i>	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
1. because I'm afraid I might need them in the future	432	1.48	1.205	0.514	-0.662
2. because it's helpful to have the information they contain	432	1.57	1.203	0.327	-0.768
3. because they bring me joy	432	2.28	1.177	-0.167	-0.796
4. to avoid feeling unhappy	432	1.01	1.184	0.977	-0.086
5. to calm myself when anxious	432	1.00	1.219	1.005	-0.136
6. because they allow me to gain skills or knowledge	432	1.99	1.221	-0.055	-0.872
7. to avoid feeling incapable	432	0.69	1.019	1.389	1.002
8. to distract myself from stressful concerns in my life	432	1.28	1.290	0.666	-0.706
9. to avoid feeling insecure	432	0.77	1.141	1.390	0.846
10. to avoid feeling lonely	432	0.69	1.114	1.597	1.584
11. so that I can enjoy things that are special to me	432	2.15	1.245	-0.232	-0.936
12. so that others will like me	432	0.60	0.991	1.726	2.366
13. because I'm afraid I'll need the information they contain	432	1.16	1.192	0.757	-0.363
14. because I enjoy making others feel good	432	1.32	1.312	0.601	-0.825
15. to use them to comfort others during times of distress	432	1.16	1.218	0.673	-0.673
16. because I don't want to forget the memories that these possessions represent	432	1.83	1.353	0.146	-1.139
17. because I like how useful they are	432	2.67	1.160	-0.624	-0.398
18. because it would be annoying to obtain them in the future	432	1.14	1.185	0.720	-0.541
19. to feel good because I can help someone with them	432	1.34	1.197	0.457	-0.811
20. because they make me who I am	432	0.93	1.159	1.030	-0.040
21. because it temporarily relieves any distress I am feeling	432	1.14	1.286	0.874	-0.430
22. because I'll enjoy gifting them to the right person	432	1.65	1.363	0.352	-1.135
23. to feel connected to other people	432	0.88	1.120	1.180	0.508
24. so people will respect me	432	0.56	0.964	1.898	3.002
25. because they bring meaning to my life	432	1.09	1.175	0.864	-0.204
26. because I like how it makes me feel	432	1.81	1.282	0.195	-1.003
27. to become the person I want to be	432	1.07	1.236	0.870	-0.404
28. because they help others cope in stressful times	432	0.88	1.088	0.981	-0.050
29. to avoid thinking about something that is troubling me	432	1.05	1.264	0.935	-0.326
30. because I don't want others to forget me when I'm gone	432	0.52	0.973	1.895	2.747
31. to feel nostalgic about my past	432	1.38	1.282	0.620	-0.661
32. because not doing so feels like I'm making a mistake	432	0.76	1.109	1.404	1.050
33. so that I can feel proud about my accomplishments	432	1.17	1.260	0.732	-0.649
34. because having an incomplete set of items is frustrating	432	1.16	1.301	0.837	-0.489
35. because I feel bad when useable things go to waste	432	1.24	1.305	0.696	-0.751
36. so that I can enjoy remembering the experiences I have had	432	1.67	1.268	0.246	-0.988
37. to avoid being a boring person	432	0.65	1.022	1.488	1.333
38. so I can use them to make others jealous	432	0.34	0.848	2.791	7.503
39. to prevent myself from getting bored	432	1.26	1.242	0.650	-0.634
40. because I don't want anyone else to have them	432	0.28	0.738	3.163	10.463
41. because they help me cope in stressful times	432	1.24	1.299	0.682	-0.738
42. to avoid being embarrassed by not owning unique items	432	0.38	0.798	2.147	3.973
43. to get attention from others	432	0.53	0.931	1.850	2.748
44. to avoid feeling distressed	432	0.90	1.177	1.138	0.242
45. because it will eventually allow someone else to connect to a piece of history	432	0.72	1.061	1.421	1.124

Item (Continued)	<i>N</i>	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
46. because beautiful possessions fill me with delight	431	1.90	1.265	0.143	-0.938
47. because it opens me up to meeting people with shared interests	431	1.03	1.108	0.821	-0.233
48. so others won't ignore me	431	0.32	0.772	2.592	6.193
49. because they motivate me to achieve my goals	431	1.44	1.230	0.471	-0.749
50. so I can pass down something meaningful to the next generation	431	1.04	1.236	0.916	-0.355
51. to avoid feeling unprepared	431	1.38	1.299	0.533	-0.845
52. to have something that understands the way I feel	431	0.51	1.011	2.052	3.283
53. to feel prepared for any situation	431	1.51	1.252	0.414	-0.840
54. to show others that I am interesting	431	0.73	1.050	1.402	1.189
55. because I am uncertain about whether they will be needed	431	1.14	1.176	0.717	-0.477
56. because they represent my dreams/goals in life	431	1.30	1.236	0.584	-0.760
57. because doing so feels like I'm saving money	431	0.94	1.202	1.138	0.210
58. to feel satisfied when I have a complete set of items	431	1.20	1.269	0.744	-0.621
59. because I might regret my decision if I don't	431	1.18	1.257	0.803	-0.387
60. to feel good about reusing/recycling old items	431	1.13	1.213	0.810	-0.378
61. to feel good about myself by impressing others	431	0.54	0.944	1.856	2.787
62. because it feels bad if I don't	431	0.66	1.068	1.633	1.821
63. to comfort myself	431	1.32	1.291	0.679	-0.676
64. to avoid forgetting something/someone personally significant	431	1.17	1.324	0.752	-0.743
65. because I like how they might be worth more in the future	431	1.06	1.211	0.886	-0.297
66. to help me feel more secure about a part of my life	431	1.00	1.228	0.985	-0.205
67. to avoid displeasing others	431	0.40	0.854	2.325	5.006
68. because I feel good about prolonging the life of the possessions	431	0.77	1.101	1.316	0.762
69. because others will be disappointed if I don't have/ lose the information	431	0.47	0.912	1.975	3.118
70. to avoid feeling regret in case they could have helped someone	431	0.73	1.087	1.435	1.114
71. because I enjoy how they match other things	431	1.28	1.258	0.639	-0.656
72. because I feel obligated to preserve a piece of history	431	0.74	1.104	1.477	1.270
73. because I'm certain that I need them	431	1.95	1.381	-0.037	-1.234
74. because I think others will feel grateful when they can use them	431	0.88	1.099	1.127	0.424
75. to help me feel more like the person I want to be	431	1.11	1.268	0.865	-0.411
76. for myself to maintain my positive mood	431	1.32	1.293	0.538	-0.926
77. to reward myself for achievements	431	1.98	1.346	-0.054	-1.155
78. because I like a good bargain	431	1.85	1.276	0.073	-1.025
79. because I don't want to miss out on things that may be worth more money in the future	431	0.99	1.219	1.013	-0.147
80. so that I can belong with a group of people	431	0.59	0.984	1.681	2.059
81. so others won't feel insecure	431	0.39	0.860	2.387	4.945
82. to feel close to other people	431	0.59	0.963	1.818	2.840
83. because it allows me to connect to a piece of history	431	0.85	1.129	1.220	0.507
84. because I'll be angry if I miss out on a good deal	431	0.94	1.191	1.059	0.031
85. because I can't live without them	431	0.66	1.033	1.500	1.273
86. because owning unique items makes me feel desirable	431	0.74	1.170	1.497	1.119
87. because I would like to fix them	431	0.65	1.052	1.624	1.752
88. to avoid feeling unsuccessful	431	0.66	1.129	1.614	1.450
89. to be more satisfied with myself	431	1.11	1.284	0.917	-0.330

Note. All items began with "I acquire possessions".

Appendix H

Descriptive Statistics for all MASQ-Saving Items

Item	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
1. because I'm afraid I might need them in the future	2.24	1.298	-0.142	-1.125
2. to avoid feeling lonely	0.49	0.983	2.109	3.637
3. to prevent myself from getting bored	0.98	1.165	0.923	-0.217
4. to avoid feeling incapable	0.57	1.042	1.787	2.171
5. because it will eventually allow someone else to connect to a piece of history	0.93	1.160	1.058	0.108
6. because I enjoy how they match other things	1.36	1.250	0.522	-0.800
7. to get attention from others	0.45	0.904	2.221	4.350
8. because I think others will feel grateful when they can use them	0.93	1.123	1.033	0.094
9. to be more satisfied with myself	1.01	1.246	0.990	-0.197
10. because I feel bad when useable things go to waste	1.78	1.386	0.195	-1.188
11. to avoid feeling insecure	0.51	1.013	2.112	3.624
12. so I can use them to make others jealous	0.28	0.766	3.004	8.679
13. so people will respect me	0.40	0.836	2.327	5.090
14. because I don't want to forget the memories that these possessions represent	2.25	1.421	-0.211	-1.245
15. to avoid being embarrassed by not owning unique items	0.40	0.846	2.395	5.425
16. to avoid being a boring person	0.53	0.946	1.924	3.172
17. because they help others cope in stressful times	0.73	1.064	1.468	1.348
18. because I don't want anyone else to have them	0.41	0.878	2.360	5.201
19. because I might regret my decision if I don't	1.73	1.366	0.237	-1.188
20. so that I can belong with a group of people	0.46	0.881	2.104	3.876
21. so that I can enjoy remembering the experiences I have had	2.33	1.287	-0.258	-0.979
22. to feel connected to other people	1.26	1.256	0.657	-0.638
23. because they bring me joy	2.33	1.252	-0.289	-0.930
24. because I'll enjoy gifting them to the right person	1.30	1.247	0.602	-0.738
25. to avoid feeling regret in case they could have helped someone	1.06	1.260	0.861	-0.480
26. because not doing so feels like I'm making a mistake	1.24	1.323	0.722	-0.733
27. to become the person I want to be	0.77	1.175	1.367	0.693
28. to calm myself when anxious	0.83	1.213	1.380	0.774
29. to avoid feeling distressed	0.80	1.199	1.427	0.955
30. because beautiful possessions fill me with delight	1.70	1.398	0.228	-1.208
31. because others will be disappointed if I don't have/ lose the information	0.76	1.068	1.277	0.640
32. to feel nostalgic about my past	2.26	1.296	-0.184	-1.060
33. to avoid thinking about something that is troubling me	0.76	1.170	1.460	1.005
34. because it makes me feel loved to have gifts from others	1.48	1.387	0.432	-1.139
35. to avoid disrespecting my past	1.13	1.240	0.819	-0.451
36. because it temporarily relieves any distress I am feeling	0.85	1.195	1.261	0.437
37. to use them to comfort others during times of distress	0.80	1.094	1.275	0.714
38. because I can't live without them	0.81	1.165	1.299	0.594
39. because I would like to fix them	0.81	1.101	1.355	1.045
40. because they represent my dreams/goals in life	1.32	1.280	0.621	-0.682
41. to feel close to other people	1.06	1.209	0.917	-0.214
42. because I like how it makes me feel	1.59	1.345	0.331	-1.049
43. to avoid losing a part of myself	1.38	1.328	0.570	-0.885
44. to avoid forgetting something/someone personally significant	2.01	1.408	-0.065	-1.276

Item (Continued)	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
45. because I like how they might be worth more in the future	1.19	1.258	0.771	-0.521
46. because having an incomplete set of items is frustrating	1.24	1.337	0.735	-0.725
47. because they help me cope in stressful times	1.01	1.256	1.032	-0.104
48. to have something that understands the way I feel	0.5	0.996	1.828	2.295
49. because I don't want to waste something that someone else could use	1.24	1.285	0.721	-0.629
50. so that I can feel proud about my accomplishments	1.58	1.345	0.340	-1.042
51. because I feel good about prolonging the life of the possessions	1.26	1.308	0.639	-0.834
52. to show others that I am interesting	0.59	0.976	1.690	2.063
53. because I enjoy making others feel good	0.85	1.122	1.158	0.325
54. because I would feel ashamed if I lost a historical artefact	1.21	1.354	0.764	-0.708
55. because it feels bad if I don't	1.16	1.312	0.851	-0.494
56. to feel good because I can help someone with them	0.97	1.133	1.013	0.159
57. because it's helpful to have the information they contain	1.59	1.311	0.298	-1.038
58. to avoid feeling unprepared	1.46	1.338	0.486	-0.960
59. because I like how useful they are	2.23	1.307	-0.274	-0.962
60. to avoid feeling unhappy	0.87	1.217	1.281	0.514
61. because they make me who I am	0.97	1.216	1.029	-0.103
62. to comfort myself	1.20	1.325	0.804	-0.582
63. so that I can enjoy things that are special to me	2.19	1.318	-0.250	-1.049
64. because I'm certain that I need them	2.03	1.380	-0.049	-1.207
65. because I don't want others to forget me when I'm gone	0.62	1.061	1.784	2.264
66. because someone else would be angry at me for giving it away	0.78	1.090	1.308	0.725
67. because I don't want to miss out on things that may be worth more money in the future	1.01	1.225	0.932	-0.328
68. because I'm afraid I'll need the information they contain	1.51	1.323	0.440	-0.932
69. because they allow me to gain skills or knowledge	1.74	1.359	0.213	-1.134
70. to feel good about reusing/recycling old items	1.41	1.307	0.480	-0.920
71. because owning unique items makes me feel desirable	0.66	1.092	1.540	1.229
72. because it opens me up to meeting people with shared interests	0.70	1.024	1.360	0.851
73. because I am uncertain about whether they will be needed	1.73	1.312	0.154	-1.090
74. because it allows me to connect to a piece of history	1.16	1.214	0.777	-0.376
75. so that others will like me	0.42	0.913	2.344	4.817
76. so I can pass down something meaningful to the next generation	1.12	1.281	0.853	-0.485
77. to feel satisfied when I have a complete set of items	1.20	1.349	0.767	-0.714
78. to help me feel more secure about a part of my life	0.95	1.227	1.154	0.229
79. because I feel obligated to preserve a piece of history	1.00	1.201	1.029	0.069
80. to avoid displeasing others	0.62	1.017	1.585	1.578
81. because it would be annoying to obtain them in the future	1.16	1.229	0.792	-0.402
82. so others won't feel insecure	0.40	0.871	2.357	4.870
83. to feel good about myself by impressing others	0.50	0.954	2.035	3.397
84. to feel prepared for any situation	1.59	1.332	0.349	-1.027
85. because I would feel guilty about giving up a gift from someone special	1.74	1.457	0.169	-1.353
86. so others won't ignore me	0.32	0.811	2.792	7.312
87. to avoid feeling unsuccessful	0.59	1.065	1.763	2.131
88. because doing so feels like I'm saving money	1.42	1.299	0.462	-0.941
89. because they bring meaning to my life	1.43	1.349	0.509	-0.982
90. to help me feel more like the person I want to be	0.95	1.230	1.161	0.251

Note. All items began with "I save possessions". *N* = 429.

Appendix I

MASQ Items in Clinical Hoarding Subset

Item	<i>N</i>	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
38. I acquire possessions so I can use them to make others jealous	56	1.18	1.491	0.912	-0.665
40. I acquire possessions because I don't want anyone else to have them	56	1.07	1.386	1.057	-0.206
42. I acquire possessions to avoid being embarrassed by not owning unique items	56	1.16	1.233	0.589	-0.865
48. I acquire possessions so others won't ignore me	56	1.05	1.227	0.813	-0.556
52. I acquire possessions to have something that understands the way I feel	56	1.39	1.485	0.561	-1.193
67. I acquire possessions to avoid displeasing others	56	1.20	1.367	0.826	-0.635
81. I acquire possessions so others won't feel insecure	56	1.13	1.402	0.755	-1.053
2. I save possessions to avoid feeling lonely	55	1.51	1.439	0.349	-1.287
7. I save possessions to get attention from others	55	1.40	1.396	0.553	-0.980
11. I save possessions to avoid feeling insecure	55	1.75	1.578	0.203	-1.545
12. I save possessions so I can use them to make others jealous	55	1.02	1.394	0.902	-0.811
13. I save possessions so people will respect me	55	1.22	1.272	0.749	-0.464
15. I save possessions to avoid being embarrassed by not owning unique items	55	1.20	1.325	0.708	-0.719
18. I save possessions because I don't want anyone else to have them	55	1.25	1.336	0.720	-0.636
20. I save possessions so that I can belong with a group of people	55	1.20	1.208	0.777	-0.327
75. I save possessions so that others will like me	55	1.24	1.333	0.765	-0.567
82. I save possessions so others won't feel insecure	55	1.18	1.348	0.691	-0.968
83. I save possessions to feel good about myself by impressing others	55	1.56	1.475	0.338	-1.364
86. I save possessions so others won't ignore me	55	1.13	1.263	0.954	-0.116

Appendix J

Summary of Factor Analysis for MASQ-Acquiring

Item	Coping	Alleviate Social Insecurity	Helping Others	Avoid Mistakes	Sentimental	Goals and Achievement	History
8. to distract myself from stressful concerns in my life.	.873						
29. to avoid thinking about something that is troubling me.	.846						
21. because it temporarily relieves any distress I am feeling.	.841						
5. to calm myself when anxious.	.809						
41. because they help me cope in stressful times.	.804						
44. to avoid feeling distressed.	.780						
4. to avoid feeling unhappy.	.753						
63. to comfort myself.	.731					.281	
10. to avoid feeling lonely.	.534	.338					
76. for myself to maintain my positive mood.	.499					.471	
9. to avoid feeling insecure.	.480	.415					
7. to avoid feeling incapable.	.383	.290					
26. because I like how it makes me feel.	.381				.243	.438	
62. because it feels bad if I don't.	.372	.216		.405			
89. to be more satisfied with myself.	.355	.200				.452	
39. to prevent myself from getting bored.	.339					.206	
88. to avoid feeling unsuccessful.	.303	.438					
1. because I'm afraid I might need them in the future.	.281			.578			
32. because not doing so feels like I'm making a mistake.	.276	.203		.469			
59. because I might regret my decision if I don't.	.274			.582			
66. to help me feel more secure about a part of my life.	.274					.400	
84. because I'll be angry if I miss out on a good deal.	.253			.517			
3. because they bring me joy.	.244				.246	.380	

Item (Continued)	Coping	Alleviate Social Insecurity	Helping Others	Avoid Mistakes	Sentimental	Goals and Achievement	History
43. to get attention from others.		.879					
12. so that others will like me.		.796					
48. so others won't ignore me.		.785					
24. so people will respect me.		.768					
61. to feel good about myself by impressing others.		.764					
38. so I can use them to make others jealous.		.738					
42. to avoid being embarrassed by not owning unique items.		.736					
54. to show others that I am interesting.		.681				.200	
67. to avoid displeasing others.		.653					
81. so others won't feel insecure.		.583					
80. so that I can belong with a group of people.		.576				.210	
82. to feel close to other people.		.572	.206				
86. because owning unique items makes me feel desirable.		.541				.347	
37. to avoid being a boring person.		.527				.242	
30. because I don't want others to forget me when I'm gone.		.509					.297
23. to feel connected to other people.		.436	.393				
40. because I don't want anyone else to have them.		.428		.246			
14. because I enjoy making others feel good.		.384	.619				
69. because others will be disappointed if I don't have/lose the information.		.348		.270			.340
28. because they help others cope in stressful times.		.307	.503				
74. because I think others will feel grateful when they can use them.		.299	.413	.271			
47. because it opens me up to meeting people with shared interests.		.275				.351	.251
87. because I would like to fix them.		.253		.367			.239
52. to have something that understands the way I feel.		.230					.300
18. because it would be annoying to obtain them in the future.		.221		.483			
57. because doing so feels like I'm saving money.		.212		.515			

Item (Continued)	Coping	Alleviate Social Insecurity	Helping Others	Avoid Mistakes	Sentimental	Goals and Achievement	History
19. to feel good because I can help someone with them.			.699				
15. to use them to comfort others during times of distress.			.642				
22. because I'll enjoy gifting them to the right person.			.634				
6. because they allow me to gain skills or knowledge.			.289	.259			
17. because I like how useful they are.			.256	.415		.268	
53. to feel prepared for any situation.			.255	.588			
51. to avoid feeling unprepared.			.253	.474			
50. so I can pass down something meaningful to the next generation.			.240				.566
49. because they motivate me to achieve my goals.			.227			.562	
70. to avoid feeling regret in case they could have helped someone.			.215	.433			.341
55. because I am uncertain about whether they will be needed.				.641			
35. because I feel bad when useable things go to waste.				.620	.198		
73. because I'm certain that I need them.				.493		.321	
58. to feel satisfied when I have a complete set of items.				.473		.279	
13. because I'm afraid I'll need the information they contain.				.469			.237
34. because having an incomplete set of items is frustrating.				.459		.211	
79. because I don't want to miss out on things that may be worth more money in the future.				.425			.242
78. because I like a good bargain.				.421		.220	
68. because I feel good about prolonging the life of the possessions.				.412			.294
2. because it's helpful to have the information they contain.				.407			
60. to feel good about reusing/recycling old items.				.404			
65. because I like how they might be worth more in the future.				.372		.201	.286
71. because I enjoy how they match other things.				.242		.423	
72. because I feel obligated to preserve a piece of history.				.2			.735
36. so that I can enjoy remembering the experiences I have had.					.763		
16. because I don't want to forget the memories that these possessions represent.					.653		

Item (Continued)	Coping	Alleviate Social Insecurity	Helping Others	Avoid Mistakes	Sentimental	Goals and Achievement	History
31. to feel nostalgic about my past.					.630		
64. to avoid forgetting something/someone personally significant.					.482		.335
33. so that I can feel proud about my accomplishments.					.310	.320	.256
11. so that I can enjoy things that are special to me.					.304	.392	
25. because they bring meaning to my life.					.296	.428	.221
46. because beautiful possessions fill me with delight.					.208	.439	
75. to help me feel more like the person I want to be.						.612	
77. to reward myself for achievements.						.573	
56. because they represent my dreams/goals in life.						.551	.255
27. to become the person I want to be.						.465	
85. because I can't live without them.						.353	
20. because they make me who I am.						.345	
83. because it allows me to connect to a piece of history.							.813
45. because it will eventually allow someone else to connect to a piece of history.							.718

Note. All items began with "I acquire possessions". Only factor loadings $\geq .20$ are shown. Bold items are in the preliminary scale.

Appendix K

Summary of Factor Analysis for MASQ-Saving

Item	Alleviate Social Insecurity	Avoid Mistakes	Coping	Sentimental	Helping Others	History	Self- identity	Completion	Instrumental
86. so others won't ignore me.	.886								
75. so that others will like me.	.863								
15. to avoid being embarrassed by not owning unique items.	.851								
12. so I can use them to make others jealous.	.831								
7. to get attention from others.	.818								
13. so people will respect me.	.805								
83. to feel good about myself by impressing others.	.779								
52. to show others that I am interesting.	.720								
16. to avoid being a boring person.	.712								
20. so that I can belong with a group of people.	.695								
82. so others won't feel insecure.	.589		.210						
80. to avoid displeasing others.	.513								
71. because owning unique items makes me feel desirable.	.507								
72. because it opens me up to meeting people with shared interests.	.494								
18. because I don't want anyone else to have them.	.453								
87. to avoid feeling unsuccessful.	.440		.208				.348		
66. because someone else would be angry at me for giving it away.	.424								
11. to avoid feeling insecure.	.423		.374						
65. because I don't want others to forget me when I'm gone.	.377				.201	.310			
4. to avoid feeling incapable.	.319	.233	.304						
31. because others will be disappointed if I don't have/lose the information.	.296					.254			
41. to feel close to other people.	.278			.308	.230				

Item (Continued)	Alleviate Social Insecurity	Avoid Mistakes	Coping	Sentimental	Helping Others	History	Self- identity	Completion	Instrumental
22. to feel connected to other people.	.265			.467	.231				
37. to use them to comfort others during times of distress.	.235		.235		.467				
2. to avoid feeling lonely.	.225		.618						
53. because I enjoy making others feel good.	.223				.636				
73. because I am uncertain about whether they will be needed.		.718							
1. because I'm afraid I might need them in the future.		.667		.206					
10. because I feel bad when useable things go to waste.		.666							
26. because not doing so feels like I'm making a mistake.		.621							
19. because I might regret my decision if I don't.		.607		.298					
88. because doing so feels like I'm saving money.		.556							
55. because it feels bad if I don't.		.547	.220						
58. to avoid feeling unprepared.		.530							.296
81. because it would be annoying to obtain them in the future.		.530							
49. because I don't want to waste something that someone else could use.		.518			.444				
84. to feel prepared for any situation.		.517							.278
25. to avoid feeling regret in case they could have helped someone.		.475			.538				
51. because I feel good about prolonging the life of the possessions.		.450			.207				
70. to feel good about reusing/recycling old items.		.414			.265				
68. because I'm afraid I'll need the information they contain.		.402				.312			.435
39. because I would like to fix them.		.331				.200			
59. because I like how useful they are.		.295							.552
85. because I would feel guilty about giving up a gift from someone special.		.263		.462					
64. because I'm certain that I need them.		.259							.477
56. to feel good because I can help someone with them.		.224			.636				

Item (Continued)	Alleviate Social Insecurity	Avoid Mistakes	Coping	Sentimental	Helping Others	History	Self- identity	Completion	Instrumental
54. because I would feel ashamed if I lost a historical artefact.		.213				.526		.267	
29. to avoid feeling distressed.		.201	.737						
28. to calm myself when anxious.			.836						
33. to avoid thinking about something that is troubling me.			.824						
36. because it temporarily relieves any distress I am feeling.			.804						
47. because they help me cope in stressful times.			.776						
62. to comfort myself.			.696						
60. to avoid feeling unhappy.			.653						
9. to be more satisfied with myself.			.502				.308		
3. to prevent myself from getting bored.			.489						
48. to have something that understands the way I feel.			.450						
42. because I like how it makes me feel.			.428	.356					
78. to help me feel more secure about a part of my life.			.349				.337		
38. because I can't live without them.			.311						
23. because they bring me joy.			.267	.502					.289
17. because they help others cope in stressful times.			.264		.578				
61. because they make me who I am.			.211	.228			.458		
27. to become the person I want to be.			.202				.611		
21. so that I can enjoy remembering the experiences I have had.				.803					
14. because I don't want to forget the memories that these possessions represent.				.755					
32. to feel nostalgic about my past.				.699					
44. to avoid forgetting something/someone personally significant.				.655					
63. so that I can enjoy things that are special to me.				.467					.302
34. because it makes me feel loved to have gifts from others.				.416	.278				

Item (Continued)	Alleviate Social Insecurity	Avoid Mistakes	Coping	Sentimental	Helping Others	History	Self- identity	Completion	Instrumental
43. to avoid losing a part of myself.				.411			.294		
50. so that I can feel proud about my accomplishments.				.333			.366		
35. to avoid disrespecting my past.				.331		.342			
89. because they bring meaning to my life.				.319			.391		
30. because beautiful possessions fill me with delight.				.300				.229	
40. because they represent my dreams/goals in life.				.199			.562		
24. because I'll enjoy gifting them to the right person.					.661				
8. because I think others will feel grateful when they can use them.					.577				
76. so I can pass down something meaningful to the next generation.					.310	.488			
5. because it will eventually allow someone else to connect to a piece of history.					.221	.645			
79. because I feel obligated to preserve a piece of history.						.785			
74. because it allows me to connect to a piece of history.						.697			
67. because I don't want to miss out on things that may be worth more money in the future.						.372		.215	
45. because I like how they might be worth more in the future.						.357			
57. because it's helpful to have the information they contain.						.301			.558
69. because they allow me to gain skills or knowledge.						.247			.659
90. to help me feel more like the person I want to be.							.717		
77. to feel satisfied when I have a complete set of items.								.858	
46. because having an incomplete set of items is frustrating.								.830	
6. because I enjoy how they match other things.								.547	

Note. All items began with "I save possessions". Only factor loadings $\geq .20$ are shown. Bold items are in the preliminary scale.

Appendix L

Correlations Between Acquiring Behaviours and Dropped Acquiring Motives Items

Item	CAS-Buy	CAS-Free
to avoid forgetting something/someone personally significant	.314	.476
so that I can feel proud about my accomplishments	.423	.390
so that I can enjoy things that are special to me	.373	.307
because they bring meaning to my life	.446	.420
because they bring me joy	.455	.266
because I like how it makes me feel	.518	.346
to feel connected to other people	.408	.335
because they make me who I am	.485	.422
to avoid feeling lonely	.549	.427
because I enjoy making others feel good	.389	.305
because I feel good about prolonging the life of the possessions	.401	.451
to prevent myself from getting bored	.473	.312
because it opens me up to meeting people with shared interests	.342	.335
to have something that understands the way I feel	.391	.326
because I enjoy how they match other things	.458	.408
because it feels bad if I don't	.611	.527
because they allow me to gain skills or knowledge	.205	.271
because I like how useful they are	.153	.181
because I like how they might be worth more in the future	.401	.492
to avoid feeling insecure	.597	.423
because I don't want anyone else to have them	.443	.395
because I can't live without them	.449	.406
to avoid feeling regret in case they could have helped someone	.455	.575
to avoid feeling incapable	.482	.437
to be more satisfied with myself	.585	.439
for myself to maintain my positive mood	.569	.387
to help me feel more secure about a part of my life	.534	.451
to avoid feeling unsuccessful	.549	.472
because I think others will feel grateful when they can use them	.397	.401
because I would like to fix them	.345	.486
because others will be disappointed if I don't have/ lose the information	.394	.464
because I don't want to miss out on things that may be worth more money in the future	.445	.509
because I'm certain that I need them	.247	.270

Note. All items began with "I acquire possessions". All correlations were significant (p 's < .001).

Appendix M

Correlations Between Saving Behaviours and Dropped Saving Motives Items

Item	SI-R Difficulty discarding
to avoid feeling unsuccessful	.484
to avoid feeling insecure	.446
because I don't want others to forget me when I'm gone	.392
to avoid feeling incapable	.485
because others will be disappointed if I don't have/ lose the information	.315
to feel close to other people	.311
because I enjoy making others feel good	.293
to avoid disrespecting my past	.409
because it makes me feel loved to have gifts from others	.360
because I like how they might be worth more in the future	.362
because I don't want to miss out on things that may be worth more money in the future	.375
because I would like to fix them	.330
to help me feel more secure about a part of my life	.468
because I can't live without them	.358
to feel good about reusing/ recycling old items	.329
because I'm afraid I'll need the information they contain	.418
so I can pass down something meaningful to the next generation	.209
so that I can feel proud about my accomplishments	.313
to avoid losing a part of myself	.462
to avoid feeling regret in case they could have helped someone	.421
because they bring meaning to my life	.295
because beautiful possessions fill me with delight	.360
because I don't want to waste something that someone else could use	.386
because I like how it makes me feel	.334

Note. All items began with "I save possessions". All correlations were significant (p 's < .001).

Appendix N

New Prototype of MASQ-Saving

Saving possessions makes me feel good because:

- | | | | | | |
|---|---|---|---|---|---|
| 1. It allows me to remember special memories. | 0 | 1 | 2 | 3 | 4 |
| 2. It allows me to use them to gain knowledge and skills. | 0 | 1 | 2 | 3 | 4 |
| 3. I could give them to others who need them. | 0 | 1 | 2 | 3 | 4 |
| 4. It is satisfying to have matching possessions. | 0 | 1 | 2 | 3 | 4 |

...

Saving possessions can help me avoid feeling bad because:

- | | | | | | |
|--|---|---|---|---|---|
| 1. I don't want to forget important memories. | 0 | 1 | 2 | 3 | 4 |
| 2. I don't want to throw away useful things. | 0 | 1 | 2 | 3 | 4 |
| 3. It is frustrating when I have an incomplete set of items. | 0 | 1 | 2 | 3 | 4 |

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Appendix O of this thesis has been removed as it may contain sensitive/confidential content