What I Should Be and What I Fear Becoming: Self-Discrepancies and

Evaluation Concerns in Social Anxiety

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Summary

Social Anxiety Disorder (SAD) is a highly prevalent condition that causes considerable distress and impairment. Theoretical models of SAD have long endorsed fear of negative evaluation as a central component to understanding social anxiety. More recently fear of positive evaluation has also been proposed as an important cognitive component to SAD. As such, regardless of valence, those with social anxiety seemingly fear *any* evaluation from others. Although the proposition of fear of evaluation in social anxiety stems from a consolidated theoretical background, empirical research investigating mechanisms underlying these fears is lacking. In addition, although the link between fear of negative evaluation and the cognitive processes in SAD is well established in the current literature, little research has investigated the relationships between fear of positive evaluation and these critical processes.

To address the aforementioned issues, the primary aim of this PhD thesis was to investigate a potential underlying mechanism of evaluation fears (both negative and positive) in social anxiety and one of its related cognitive processes, namely post-event rumination. It has recently been argued that self-discrepancy is 'key' to social anxiety disorder. As such, it is important to better understand how this 'key' concept may be linked specifically to one of the core features of social anxiety, fear of evaluation. Two self-discrepancies in particular were the focus of the current thesis, the actual-ought self-discrepancy and the actual-feared self-discrepancy. The actual-ought self-discrepancy relates to discrepant beliefs about what a person believes they actually are and what a person believes they should be. In contrast, the actual-feared self-discrepancy relates to the proximity of a person's perceived actual self, to the characteristics that they fear becoming, but do not want to become. It was

hypothesised that actual-ought self-discrepancy would influence post-event rumination sequentially through both fear of negative, and fear of positive evaluation (in separate models), and social anxiety, and actual-feared self-discrepancy would influence post-event rumination in sequence through fear of negative evaluation and social anxiety. Findings of the model testing most consistently supported actual-ought self-discrepancy as influencing fear of negative evaluation, which then influenced social anxiety, which in turn influenced rumination. Overall, results provide a better insight into how self-discrepancies influence social anxiety and its related processes.

The second aim of the current thesis was to investigate brief cognitive restructuring and acceptance interventions targeting actual-ought self-discrepancy in social anxiety. Based on the model testing, targeting actual-ought self-discrepancy was expected to reduce fear of evaluation, social anxiety and rumination. Results from this brief intervention study revealed that acceptance may be a more efficacious approach for targeting actual-ought self-discrepancy in order to reduce fear and the cognitive processing in those experiencing social anxiety. The theoretical and clinical implications, within the context of the study limitations of the research, are discussed.

Declaration

I certify that this thesis does not incorporate, without acknowledgement, any
material previously submitted for a degree or diploma in any university; and that to
the best of my knowledge and belief it does not contain any material previously
published or written by another person, except where due reference is made in the
text.

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The self is at once our greatest ally and our fiercest enemy – Mark R. Leary

CHAPTER 1: Theoretical Overview

Social Anxiety (Disorder)

Anxiety is a common term used to describe slight nervousness or excitement whereas in the field of clinical psychology the meaning of anxiety is quite different. Within clinical psychology, the term anxiety is generally reserved to explain states of fear, panic and phobia. The third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III; American Psychiatric Association, 1980), saw the introduction of the specific phobia related to social situations in what is now classified in the DSM-5 as Social Anxiety Disorder (SAD; American Psychiatric Association, 2013). Prior to this, no differentiation was given to different subtypes of phobic disorders; instead all phobic disorders were encompassed under 'phobic neurosis' (DSM-II; American Psychiatric Association, 1968). Since social-specific anxiety was introduced in the DSM-III (American Psychiatric Association, 1980), an abundance of empirical and clinical attention has been given to social anxiety and its clinical manifestation, namely SAD, which has led to advances in both the understanding and treatment of the disorder.

By current definition, the essential feature of SAD is a "marked fear or anxiety about one or more social situations in which the individual is exposed to possible scrutiny by others" (American Psychiatric Association, 2013, p. 202). Social situations incorporate any situation where others are present or the threat of evaluation by others is perceived to exist. For example, a social situation may be something as obvious as an interaction with another person or a public speaking event, but may also be subtler such as being observed eating or drinking, walking down the street, or taking a test that will be examined by another person. The fear experienced by those with SAD most commonly exists during the social situation

itself, but may also occur in anticipation of a social situation, or afterwards when a person reflects upon a social situation (Clark, 2001). Importantly, the fear is out of proportion to the actual social threat (American Psychiatric Association, 2013). Any perceived evaluation in a social situation leads those with SAD to view social situations as scary or dangerous, which provokes physiological anxiety responses such as blushing, sweating, shaking/trembling, and/or heart palpitations (Clark, 2001). Due to the fear and subsequent physiological reactions, socially anxious individuals try to avoid social situations in which anxiety is triggered. If unable to do so, social situations will likely be endured with dread (American Psychiatric Association, 2013).

At times, SAD may be confused with social reticence. However, having a quiet or shy disposition in-and-of-itself is not pathological. Instead, social anxiety is said to exist on a continuum from the lower extreme of shyness to the upper extreme of avoidant personality disorder, with SAD positioned at the mid-to-upper point (McNeil, 2010). As such, a diagnosis of SAD is only considered when the anxiety symptomology is great enough to be accompanied with significant deficits in the functioning of an individual (American Psychiatric Association, 2013). However, this also means that sub-clinical levels of social anxiety can inform both empirical investigations and clinical interventions of SAD (McNeil, 2010). Some of the functional consequences of SAD include "decreased well-being, employment, workplace productivity, socioeconomic status, and quality of life… [and it] also impedes leisure activities" (American Psychiatric Association, 2013, p. 206).

Assessment of the lifetime and 12-month prevalence rates by the Australian National Survey of Mental Health and Wellbeing in 2007 specified that 8.4% of Australians met criteria for SAD in their lifetime (Australian Bureau of Statistics,

2007), and 4.2% met criteria in the preceding 12 months (McEvoy, Grove, & Slade, 2011). These statistics represent SAD as one of the most prevalent anxiety disorders in Australia, second only to post-traumatic stress disorder (Australian Bureau of Statistics, 2007). According to Crome et al. (2015), prevalence rates did not change as a consequence of recent modifications to the diagnostic criteria in the DSM-5, which included the introduction of the performance-only specifier (e.g., fears restricted only to speaking or performing in public). Further examination of the lifetime and 12-month prevalence rates revealed that females and people between the ages of 25 and 64 years are significantly more likely to meet diagnostic criteria for SAD (Crome et al., 2015). Comorbidity with other mental disorders is common in SAD with almost 70% of people meeting criteria for SAD (12-month prevalence) also having experienced another mental disorder in their lifetime (Crome et al., 2015). Specifically, SAD is most often experienced with other anxiety disorders (e.g., agoraphobia, generalised anxiety disorder), depressive disorders (e.g., major depressive disorder), and substance use disorders (e.g., alcohol use), with SAD usually occurring prior to the onset of these disorders (American Psychiatric Association, 2013; Crome et al., 2015). SAD has also been associated with post-traumatic stress disorder, bipolar disorder, and body dysmorphic disorder (American Psychiatric Association, 2013).

The Need to Belong

To understand social anxiety, it is important to first understand the basic motivations that drive social behaviour in humans, largely our innate need to belong. The need to belong is said to be a fundamental human emotion derived from primitive times when group membership increased chances for survival and reproduction (Baumeister & Leary, 1995; Baumeister & Tice, 1990). Consequently,

humans are fundamentally motivated to form and maintain meaningful interpersonal relationships with others to secure their well-being, and are inclined to experience a level of distress upon exclusion from a social group. In the past, our inherent need to surround ourselves with others primarily served the physical well-being/survival purposes but, as physical well-being is now less unpredictable for most in the developed world, social inclusion/exclusion today may instead relate more to our mental well-being (Baumeister & Leary, 1995; Baumeister & Tice, 1990). Specifically, Baumeister and Leary (1995) suggest that anxiety arises when one perceives that the dissolution of important interpersonal relationships is likely to occur. Therefore, as would be expected, social inclusion should minimise anxiety (Baumeister & Leary, 1995).

If social inclusion minimises anxiety due to our need to belong, it would be expected that people would try to involve themselves in social situations to increase their chances of forming important relationships with others. However, unlike their non-anxious counterparts who approach social situations more than they avoid them, those with high levels of social anxiety tend to avoid social situations just as much as they approach them (Alden & Taylor, 2010). In that sense, on the one hand socially anxious individuals are inherently motivated to seek out social situations to form relationships with others and reduce distress (anxiety), due to their need to belong, yet on the other hand they avoid social situations because of the perceived threat from those situations.

Situations based on obvious interpersonal evaluation (i.e., public speaking) are highly prone to cause anxiety due to the perceived high risk of exclusion if the evaluation is negative (Baumeister & Leary, 1995; Baumeister & Tice, 1990; Furmark, 2002). However those with social anxiety may perceive that they are being

evaluated negatively even when real evaluation or risk of exclusion does not actually occur, thereby creating anxiety (Leary, 2004). Thus, one's own perception of a given situation, in particular one's own perception of themselves in a given situation, which is possible due to a concept known as 'the self', is argued to be at the core of social anxiety and contributes to its maintenance (Leary, 2004). The following section will further explain the concept of self.

The Self

It has been argued that the self, "the mental apparatus that allows people to think consciously about themselves", is what makes us uniquely human (Leary, 2004, p. 5). Unlike other animals, human beings can think about specific goals they want to achieve, and the behaviours needed to be undertaken in order to meet their goals (Leary, 2004). With the advantages of higher-order cognitive processes such as self-awareness, introspection, and recognising others perspectives, all of which are benefits of having a self, human beings can plan, evaluate, and change their behaviour (Leary, 2004). Hence, the self is an important phenomenon to distinguish human beings from other animals.

However, Leary (2004) coined this phenomenon 'the curse of the self' because despite the self having its advantages (e.g., self-awareness), many of the problems we face today, including social anxiety, can be directly or indirectly attributed to the self. According to Leary (2004), due to the very nature of the self, our thoughts, perceptions, beliefs, and experiences are filtered through an egotistical lens, which means there is a high possibility for distorted views of ourselves to be formed. In other words, it is difficult for us to remain objective in our self-awareness. For example, instead of objectively evaluating our performance in a social situation, we tend to react to our own ideas about how we performed, or our

own ideas about others perceptions of our performance, rather than how we *actually* performed, or how others *actually* viewed us (Leary, 2004). Therefore, through this distorted lens of the self, if a socially anxious individual *perceives* that they are not performing well, then this is highly likely to increase their worry about how they are being perceived by others (e.g., negative evaluation from others), and consequently increase worries about social exclusion, which can create anxiety. In fact, Leary (2004) argued that the most common emotional reaction to imagining how one is perceived by others is social anxiety. However, in reality there may actually be no expectations from others regarding social performance, and no evaluation occurring at all. Accordingly, it is the processes of the self that enables individuals to feel socially anxious due to their perceived (distorted) beliefs about themselves such as failure to perform in a way as expected from others, which in turn leads to anxiety. Therefore, it is important to understand social anxiety within the context of the self, particularly the beliefs one formulates about oneself and how this impacts on social anxiety and its information processing (Leary, 2004; Moscovitch, 2009; Stopa, 2009).

Theoretical Models of Social Anxiety

Over the past three and a half decades of research, several theoretical models of SAD have been developed. Most of these predominantly present biological, cognitive, or interpersonal underpinnings. Biological approaches typically discuss temperamental, genetic, psychophysiological, and evolutionary factors (e.g., Gilbert, 2001); cognitive models point to patterns and dysfunctions in how people think about themselves and their experiences (e.g., Clark & Wells, 1995; Rapee & Heimberg, 1997); and interpersonal theories provide a relational framework within the context of social interaction, arguing that social anxiety is as much an

interpersonal disorder as it is an intrapersonal disorder (e.g., Alden & Taylor, 2010).

Each model has furthered our understanding of social anxiety by presenting their

own central thesis, either independent or as an extension of previous models.

However, to consolidate our understanding of social anxiety, and guide future

research and clinical practice as to the best approach forward, a single conceptual

approach is not sufficient. Instead, acknowledging the commonalities each approach

shares with others is of benefit. When reviewing the models of social anxiety, the

most prominent themes that emerge are discrepant beliefs about the self, concerns

about evaluation, and dysfunctional cognitive processing. As such, each will be

discussed in turn below.

      Discrepant beliefs about the self. Elements of the self, including the

thoughts and perceptions that one holds about oneself feature heavily in the models

of social anxiety. Although each theoretical model of SAD makes some mention of

self-related concepts, there are models that focus more heavily on the concept of the

self when explaining the aetiology and maintenance of social anxiety. For example,

Stopa (2009) introduces a broad concept of the self that is conceptualised across

three main areas: content, structure, and process. Content refers to "information

about the self and how this knowledge is represented", structure refers to "the way

that self-knowledge and information about the self is organised", and process refers

to "how attention is allocated to self-relevant information" (Stopa, 2009, p. 49). This

model in particular highlights the importance of considering the self in social anxiety

research. However, holding incompatible beliefs between how one perceives oneself

in a social situation and their perception of others expectations in a social situation is

strikingly consistent across all models of social anxiety regardless of their theoretical

underpinning.

By looking across the models one can easily see that although presented slightly differently, discrepant beliefs about the self are central to the theory of social anxiety. Specifically, the self-presentational approach proposes that those with social anxiety are motivated to make a particular impression on others (either positive or negative), but doubt their abilities to do so (Leary, 2014; Leary & Kowalski, 1995; Schlenker & Leary, 1982). Similarly, Stopa (2009) suggests that unrealistic expectations about how an individual should perform, and the perception that they cannot live up to these expectations is at the core of social anxiety. From a cognitive perspective, Clark and Wells (1995) and Hofmann (2007) propose that those with social anxiety hold excessively high standards for their social performance, but perceive their ability to meet such demands as low. Furthermore, Rapee and Heimberg (1997), and by extension Heimberg, Brozovich, and Rapee (2010) state that socially anxious individuals form a mental representation of how one is perceived by the audience comparative to the audiences presumed situational standards. From an evolutionary standpoint, Gilbert (2001) states that those with social anxiety hold concerns about the perceived competitiveness of the social hierarchy, and about their ability to compete for the necessary resources/social status. A slightly different take comes from the interpersonal theory by Alden and Taylor (2010), who describe perceptions of the self as being deficient and that others are inherently critical, whereas Moscovitch (2009) uniquely describes that those with social anxiety are concerned about not being able to conceal specific characteristics of the self that they perceive to be deficient or contrary to perceived societal expectations. The consistent theme of discrepant beliefs about the self is not surprising given that a disruption to an individual's sense of self is said to be at the core of many clinical disorders, including social anxiety (Leary, 2004). Yet, it was

only very recently that much needed formal recognition of this phenomenon across all models of social anxiety was given with J. Wong, Gordon, and Heimberg (2014) professing "discrepancy as the key" (p. 18) to social anxiety.

From the various descriptions across the models of social anxiety, it could be surmised that it is incompatible beliefs about what one perceives they *should* be and what they believe they *actually* are that is at the forefront of social anxiety. One of the first formal introductions to discrepancies related to the self came from the social-personality literature in the form of self-discrepancy theory (Higgins, 1987; Higgins, Klein, & Strauman, 1985). In its origin, self-discrepancy theory is in line with discrepancies related to what an individual thinks they should be and what they believe they actually are. Further extended by other researchers (Carver, Lawrence, & Scheier, 1999; Markus & Nurius, 1986; Ogilvie, 1987), the concept also includes discrepancies related to characteristics that a person feels they should not display, but worries they may not be able to conceal which is consistent with the perspective of Moscovitch (2009) described above. Although some mention of self-discrepancy theory has been made in the models of social anxiety (e.g., Hofmann, 2007), considering discrepant beliefs about the self is such a prominent theme across *all* models of social anxiety, research formally addressing this social-personality theory in social anxiety is not as advanced as one might expect.

Higgins (1987) introduced his original self-discrepancy theory to distinguish between different self-states and their relation to specific emotional vulnerabilities, proposing that individuals construct hypothetical as well as 'real' selves. Self-discrepancy theory essentially encompasses three self-representations, namely the *actual* self, which is "your representation of the attributes that someone (yourself or another) believes you actually possess" (p. 320); the *ideal* self, which is "your

representation of the attributes that someone (yourself or another) would like you, ideally, to possess" (p. 320); and the *ought* self, which is "your representation of the attributes that someone (yourself or another) believes you should or ought to possess" (p. 321). In addition, two standpoints of the self are introduced, the *own* and that of a significant *other*. As such, six combinations emerge, namely actual-own, actual-other, ideal-own, ideal-other, ought-own, and ought-other. The domains involving the actual self, particularly the actual-own, is what Higgins (1987) describes as a person's self-concept. The remaining self-state representations (e.g., ideal and ought selves) are standards to 'achieve' known as 'self-guides'. Individual differences determine which self-guide people are particularly motivated to meet but a self-discrepancy arises when there is a difference or gap between the persons self-guide and their self-concept.

Higgins (1987) proposed that self-discrepancies make a person vulnerable to emotional distress, but the type of distress that manifests varies depending on the specific discrepancy. For example, if a person possesses a discrepancy between their *actual* (self-concept) and *ideal* (self-guide) selves, the perceived current state of his or her actual attributes do not match the attributes that the person believes they would *ideally* like to possess. As a result of their perceived shortfalls the person holding an actual-ideal discrepancy is said to be vulnerable to dejection-related emotions such as depression (Higgins, 1987). On the other hand, and particularly relevant for the current thesis, if a person holds a discrepancy between their *actual* self and their *ought* self the person perceives that their current self-state does not match what they believe they *should* be and consequently is vulnerable to agitation-related emotions such as feelings of apprehension, fear, anxiety, and panic (Higgins, 1987).

More recently, Carver et al. (1999) extended Higgins (1987) self-discrepancy theory by proposing a fourth representation of the self: the *feared* self. Drawing on earlier literature describing the undesired self (e.g., Markus & Nurius, 1986; Ogilvie, 1987), Carver and colleagues described the feared self as being "a set of qualities the person wants not to become but is concerned about possibly becoming" (1999, p. 785). In contrast to the pursuit of particular self-guides proposed by Higgins (1987), Carver and colleagues proposed that when a person believes they are too close, or at risk of becoming too close, to their feared self they try to escape from it. To examine this new discrepancy, the authors conducted a study investigating Higgins' original self-discrepancies (actual-ideal and actual-ought) and the actual-feared self-discrepancy as predictors of agitation-related affects (e.g., anxiety), and dejection-related affects (e.g., depression). Regarding anxiety, the authors compared the strength of the actual-ought and actual-feared self-discrepancies while controlling for the other respective discrepancy, as well as the actual-ideal self-discrepancy. When controlling for the actual-ideal and actual-feared self-discrepancies, a discrepancy related to the ought self no longer predicted anxiety. The actual-feared self-discrepancy on the other hand, remained a significant predictor of agitation-related emotion when controlling for discrepancies of the ought and ideal selves. Based on their results, the authors concluded that the actual-feared self-discrepancy is perhaps more important in predicting agitation-related affects such as anxiety than the actual-ought self-discrepancy.

Taken together, despite the *type* of discrepancy (i.e., actual-ought or actual-feared), it is clear that socially anxious individuals are trying to decipher what is necessary within a social situation in order to avoid evaluation from others and/or exclusion from the social group. Pursuing the ought self can be considered as an

attempt to improve one's 'actual' attributes in order to be included in the group, and the avoidance of the feared self would likely be an effort to safeguard an individual from being ostracised. Therefore, both actions seemingly function as preventative measures from being negatively evaluated by others, a core component of social anxiety.

   Fear of evaluation. Fear of negative evaluation, the apprehension and distress over negative evaluations by others (Watson & Friend, 1969), has long been a major focus of social anxiety. After all, the perception of negative evaluation may lead to the perception that rejection is probable, so fearing negative evaluation is rooted in our need to belong (Baumeister & Leary, 1995; Baumeister & Tice, 1990). The earlier models of SAD have clearly highlighted fear of negative evaluation as a core component of the disorder. For example, two of the most well-known and widely cited models of social anxiety by Clark and Wells (1995) and Rapee and Heimberg (1997) discuss that those with SAD tend to overestimate the likelihood and consequences of negative evaluation which leads them to view social situations as dangerous. Yet, fear of negative evaluation is not the only evaluative concern that socially anxious individuals are proposed to hold. Counter-intuitively, fear of positive evaluation, namely the apprehension and distress over positive evaluations by others (Gilbert, 2001; Weeks, Heimberg, & Rodebaugh, 2008), has also been implicated as an additional cognitive component to social anxiety. The term counter-intuitive is used not only because earlier models of SAD (e.g., Clark & Wells, 1995; Rapee & Heimberg, 1997) suggest that those with social anxiety seek positive appraisal from others regarding one's own social performance, therefore fearing such an appraisal appears conflicting, but also due to the premise regarding our inherent need to belong and our fears of social exclusion. If we have the desire to be

included and liked by others in order to create or maintain interpersonal relationships, then it surely makes sense that receiving positive evaluation from others would be aligned with this goal. Therefore, on the surface, it is hard to fathom why positive evaluation would instil fear in those with social anxiety.

Weeks, Heimberg, and Rodebaugh's (2008) fear of positive evaluation essentially stems from Gilbert's "fear of doing well" (2001, p. 742). By way of explanation, Gilbert (2001) proposed that there are different social mentalities which are linked to the development and navigation of social situations. One such mentality said to be particularly relevant to social anxiety is 'competitiveness', which is based on social rank and position. It is suggested by Gilbert that socially anxious individuals tend to operate within the context of this rank-focussed view of social relationships and it is within this social mentality that fear of positive evaluation can be explained. According to Gilbert (2001), the ultimate goal of socially anxious individuals is to avoid challenging the dominant member of a social group, while simultaneously remaining within the safe confines of the group. He suggests that doing well may mean 'stealing the spotlight' from more dominant others which may lead to unwanted social repercussions (e.g., confrontation). Alternatively, doing well may also lead to perceived higher expectations from others which will need to be maintained in the future (Gilbert, 2001). However, if a person perceives that he/she does not have the ability to maintain social gains then higher expectations will become stressful (Gilbert, 2001). The latter explanation for fear of positive evaluation by Gilbert is in line with early work by Schlenker and Leary (1982) who proposed that those with social anxiety reject praise from others because they believe they cannot fulfil higher standards associated with the praise.

Taken together, the co-existence of fear of negative evaluation and fear of positive evaluation are proposed to serve distinct goals in social anxiety (Gilbert, 2001; Weeks & Howell, 2014). Specifically, socially anxious individuals may fear negative evaluation due to a fear of moving downward in the social hierarchy which may lead to ostracisation, and fear positive evaluation due to a fear of moving up in the social hierarchy which may lead to increased pressures regarding future social performance (Gilbert, 2001; Weeks & Howell, 2014). As such, individuals with social anxiety seemingly fear *any* evaluation, regardless of valence. Those with social anxiety are consequently most comfortable existing within the safety of the middle of the social hierarchy, where they can remain inconspicuous and avoid evaluation and social threat entirely (Weeks & Howell, 2014). The introduction of fear of positive evaluation by Weeks, Heimberg, and Rodebaugh (2008) has led to both the update of an existing theoretical model (Heimberg et al., 2010), and the introduction of a new bivalent fear of evaluation concept in social anxiety (Weeks & Howell, 2012). This bivalent approach to fear of evaluation may help explain why socially anxious individuals have equal approach-avoidance motives in social situations; they are caught between fearing negative evaluation and fearing positive evaluation. It is therefore deemed important to consider not only negative but also positive evaluation fears in the current thesis.

Dysfunctional cognitive processing. Cognitive-behavioural models of SAD (e.g., Clark & Wells, 1995; Heimberg et al., 2010; Hofmann, 2007) have implicated dysfunctional cognitive processing in the maintenance of the disorder, one such process is post-event rumination. Post-event rumination is likened to conducting a "post-mortem of the event" whereby the social interaction is reviewed in detail, with a specific focus on the negative aspects of the social situation (e.g., anxious feelings;

Clark & Wells, 1995, p. 74). Although physical anxiety symptoms quickly reduce once the social situation has ended, distressing post-event rumination typically takes over. On the surface, deliberate and conscious thought about ourselves and/or other people and events seems beneficial because it allows us to analyse what happened in the past and anticipate and plan for the future (Leary, 2004). However, when thinking is excessive and negative-laden, then thinking too much can be detrimental as people tend to get 'held captive' by such thoughts (Leary, 2004). Post-event rumination is recognised as a key maintaining factor in social anxiety (Brozovich & Heimberg, 2008), but more recently, has also been considered as a transdiagnostic process across a number of disorders (e.g., depressive disorders and other anxiety disorders; McLaughlin & Nolen-Hoeksema, 2011).

Brozovich and Heimberg (2008) suggest that researching post-event rumination may help us better understand why social fears are not extinguished despite repeated exposure in the natural environment. Exposure to a feared situation is said to challenge fear-related cognitions, which in turn reduces anxiety related to the feared situation (Foa & Kozak, 1986). However, despite consistent exposure to social situations, social anxiety persists. It is argued that social anxiety persists, in part, because the socially anxious individual tends to engage in excessive negative rumination, focussing on all the things that went 'wrong' in the social situation (Brozovich & Heimberg, 2008; Clark, 2001). According to Clark (2001), social anxious individuals tend to interpret ambiguous social cues as threatening, and overestimate the likelihood of negative social events occurring during a social situation. As such, the perceived negative aspects of the social situation are prominent in the individual's memory with little, if any, positive memories remaining after the social situation has ended (Clark, 2001). Therefore, when a

socially anxious individual recalls the situation in the hours or days following, it is likely to have a negative bias attached to it and it is these negative details that are pored over in detail (Clark, 2001). This negative post-event rumination gives fuel to anxiety when the socially anxious individual is contemplating the next social situation, which forms a vicious cycle. As such, rumination is deemed an important maintaining factor for social anxiety and thus is a focus of the current thesis.

Self-Discrepancies as a Contributor to Fear of Evaluation, Anxiety, and Post-Event Rumination in Social Anxiety

Research to date has shown that fear of negative evaluation is a driving force of anxiety symptoms in social situations (e.g., Coles, Turk, Heimberg, & Fresco, 2001; Horley, Williams, Gonsalvez, & Gordon, 2004; Mansell & Clark, 1999). Additionally, evidence for the importance of fear of positive evaluation in social anxiety is gaining momentum in the literature (Rodebaugh, Weeks, Gordon, Langer, & Heimberg, 2012; Weeks, Heimberg, & Rodebaugh, 2008; Weeks, Heimberg, Rodebaugh, & Norton, 2008; Weeks & Howell, 2012; Weeks, Jakatdar, & Heimberg, 2010). However, the underlying mechanism contributing to fear of evaluation (both negative and positive) in social anxiety is less clear. Schlenker and Leary (1982) questioned the driving force behind social anxiety, specifically asking "what is the lowest common denominator of fear in social anxiety" (p. 643). The literature has pointed to the potential contribution of the self in social anxiety. However, how the self may serve as one of the lowest common denominators of fear in social anxiety awaits investigation. Given that a) the self is integral to human experience, b) discrepant beliefs about the self are consistent across the models of SAD, and c) that fear of evaluation is the heart of social anxiety, it is thus valuable to explore whether discrepant beliefs about the self play a role in contributing to the

fear of evaluation fears, including both positive and negative evaluation, in social anxiety. In relation to this, Moscovitch (2009) argued that treatment needs to shift away from exposure to the feared situation and toward exposure to the self, specifically the self-attributes (i.e., those attributes that one believes they should possess, or fear possessing). However, the research on self-discrepancies in social anxiety is limited (J. Wong et al., 2014). The current thesis will address this issue by investigating the role of self-discrepancies in social anxiety. Specifically, this thesis will focus on self-discrepancies as potential underlying mechanisms of social fear, and investigate whether self-discrepancies contribute to fear of evaluation in social anxiety and its related cognitive processing, post-event rumination.

Contribution of the Current Thesis

The primary contribution of this thesis lies in the consolidation of a set of variables not typically studied together in the literature. This thesis proposes that self-discrepancies may influence both fear of negative and fear of positive evaluation in social anxiety, which then subsequently influences the level of anxiety, and the cognitive processing of post-event rumination experienced by socially anxious individuals.

Some of the current investigation will replicate previous findings, for example, the relationships between social anxiety and fear of evaluation, and social anxiety and post-event rumination. In addition, it will replicate the individual findings relating to the relationship between actual-ought self-discrepancy and social anxiety (Higgins, 1987), and actual-feared self-discrepancy and anxiety (Carver et al., 1999). However, this thesis will test the previously unknown, or scarcely researched, relationships between self-discrepancies and fear of evaluation, and self-discrepancies and post-event rumination in the context of social anxiety. Most

importantly, this thesis will extend previous research by a testing new theoretical model incorporating self-discrepancies, fear of evaluation, anxiety symptomology and rumination. Results are expected to provide empirical evidence supporting the role of self-discrepancies as one of the lowest common denominators of fear in social anxiety.

Theoretically, investigating self-discrepancies as a contributor to social anxiety symptomology and its cognitive processing will enhance our understanding of the role of the self in this prominent anxiety disorder. Clinically, there are several potential applications of the current investigation. It has been suggested that current therapies fall short for SAD, with many individuals remaining symptomatic following treatment (Hofmann & Bögels, 2006; Mayo-Wilson et al., 2014). As such, the enhancement of existing treatments for social anxiety have become a focus of the research. The introduction of fear of positive evaluation has seen the call to target both fear of negative and fear of positive evaluation in social anxiety in an effort to improve treatment outcomes (Weeks & Howell, 2014). Further, Moscovitch (2009) argues that in much the same way as physical symptoms are the main concern in panic disorder or intrusive thoughts are the focus of concern in obsessive-compulsive disorder, it is actually attributes of the self that are of chief concern in SAD, rather than the range of cognitions and/or behaviours, and that these characteristics should be targeted during treatment. Therefore, by investigating the role of self-discrepancies as a possible underlying mechanism to both negative and positive fears of evaluation, the current thesis will provide empirical evidence about the contribution of self-discrepancies to social anxiety and its cognitive processing. This knowledge may offer steps towards a treatment approach that targets self-discrepancies in social anxiety.

Structure of the Current Thesis

This thesis is arranged over seven chapters. Chapter 1 provided a broad overview of the theory related to social anxiety, and more specifically self-discrepancies, fear of evaluation, and rumination in social anxiety. Chapter 2 introduces and undertakes a preliminary test of a proposed theoretical model whereby self-discrepancies influence fear of evaluation in social anxiety and its related cognitive process of rumination. Chapters 3 and 4 further investigate the theoretical model within the context of two specific social situations, namely a naturalistic class presentation and a controlled laboratory setting using an impromptu speech task. Next, Chapter 5 provides a summary of the model testing across chapters 2, 3, and 4 whereby the consistent and inconsistent results are discussed. Chapter 6 investigates the effectiveness of brief cognitive restructuring and acceptance interventions for self-discrepancy in social anxiety. Finally, the findings of all four studies are summarised in Chapter 7, and the clinical implications and directions for future research are discussed.

CHAPTER 2: Study 1

Chapter 1 provided a broad conceptual overview of the theories underpinning SAD, such as the need to belong, and introduced common features found across the models of SAD, namely self-discrepancy, fear of evaluation and rumination. To investigate the relationships amongst these central concepts in SAD, the current chapter introduces and tests an integrated model based on the theory reviewed. Figure 2.1 presents the proposed model. On the basis of theoretical and empirical reasoning, the model assumes directional flow with multiple potential mediation relationships. The introduction of this chapter provides a more detailed overview of the empirical support for the specific relationships proposed in the model, starting with the paths involving self-discrepancies and moving through the model in sequence.
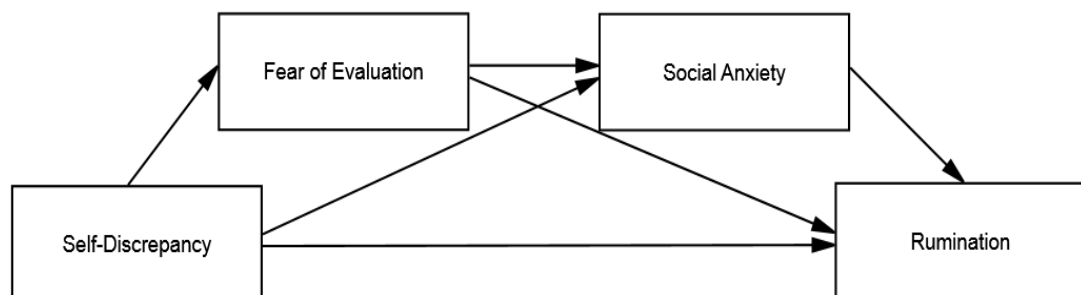
Figure 2.1. The proposed model for the role of self-discrepancies in fear of evaluation, social anxiety, and rumination.

Self-Discrepancies and Fear of Evaluation

As reviewed in Chapter 1, the self incorporates higher-order processes such as self-awareness and the recognition of others perspectives, which can be beneficial, but can also create distorted or discrepant beliefs about the self (Leary, 2004). Theoretically, discrepant beliefs about the self have been suggested across the models of social anxiety as one of the sources contributing to the core features of

social anxiety, which includes fear of evaluation. For example, in Heimberg et al.'s (2010) model, discrepant beliefs about the self (i.e., the mental representation of how one perceives they are viewed by the audience comparative to the presumed standards of the audience) is depicted as leading socially anxious individuals to judge the probability and consequences of evaluation by others, including both negative and positive evaluation.

Evidence has supported the relationship between actual-ought self-discrepancy, namely the discrepancy between what one thinks they should be and what one thinks they are, and fear of negative evaluation. For example, in a sample of undergraduate students, Strauman and Higgins (1988) used a measure of fear of negative evaluation to conceptualise social anxiety and found a significant, moderate correlation between this fear and actual-ought self-discrepancy. Rodebaugh and Donahue (2007) also revealed a significant correlation between actual-ought self-discrepancy and fear of negative evaluation in the context of a speech task, although the relationship between actual-ideal self-discrepancy and fear of negative evaluation was just as strong. In a sample of Israeli participants Bizman, Yinon, and Krotman (2001) found group-based actual-ought self-discrepancy (i.e., a discrepancy between the perception of a group members' actual attributes and the attributes that someone believes the group members should possess), was related to fear of negative evaluation of one's group (i.e., fear that Israelis would be evaluated negatively by other groups). Taken together, these findings suggest that if one perceives that their actual self will fail to meet the ought self, then they will fear that others will criticise or reject them. Therefore, the relationship between actual-ought self-discrepancy and fear of negative evaluation was included in the proposed

model. In addition, taking into account the results from Rodebaugh and Donahue (2007), the effects of depression are controlled in the analyses.

Given the concept of fear of positive evaluation is relatively new in social anxiety research, it is not surprising that specific tests investigating the relationship between actual-ought self-discrepancy and fear of positive evaluation have not been conducted. The closest investigation found in the literature for the relationship between actual-ought self-discrepancy and fear of positive evaluation was conducted by Weeks, Heimberg, Rodebaugh, et al. (2008), who investigated the 'discrepancy' subscale of the Almost Perfect Scale-Revised (Slaney, Mobley, Trippi, Ashby, & Johnson, 1996) as a measure of discriminant validity for fear of positive evaluation. The 'discrepancy' in this measure refers to the failure to meet one's own perfectionistic standards. Weeks, Heimberg, Rodebaugh, et al. (2008) found no relationship between perfectionistic discrepancy and fear of positive evaluation. Recently, Yap, Gibbs, Francis, and Schuster (2016), also investigated the relationship between fear of positive evaluation and perfectionism, which was in the form of both personal standards (i.e., one's own perfectionistic standards), and maladaptive perfectionism (i.e., concerns over mistakes, doubts about actions and parental criticism/expectations). In line with Weeks, Heimberg, Rodebaugh, et al. (2008), Yap et al. (2016) found that only maladaptive perfectionism, and not perfectionistic personal standards was positively correlated with fear of positive evaluation. These results suggest that it is the concern about falling short of perceived standards and expectations of others (whatever the level) that may be influencing fear of positive evaluation, not one's own perfectionistic pursuits. Therefore, it is possible to argue that those with social anxiety may fear positive

evaluation because of the perception that they do not meet the expected standards within a social situation.

Wallace and Alden (1997) conducted a study whereby they provided socially anxious individuals and controls with positive and negative feedback regarding a conversation with a confederate. Results revealed that as a result of the positive feedback socially anxious individuals believed that their conversation partner would hold higher standards for them. From this, the authors suggested that socially anxious individuals are likely to interpret social success as higher expectations for *future* performance, and believe that they will fall short of such expectations. This is in line with Gilbert (2001) who suggested that fear of positive evaluation may be a result of the perception of increased standards for future social performance. Taken together with the findings from Yap et al. (2016), if one perceives they cannot meet the perceived social standards due to their actual-ought self-discrepancy, and perceive that any positive evaluation would increase social standards for the future (the standards they already feel they cannot achieve), then the actual-ought self-discrepancy would likely induce fear of positive evaluation. Accordingly, it was predicted that there would be a relationship between actual-ought self-discrepancy and fear of positive evaluation.

To my knowledge, no studies have examined the specific relationship between actual-feared self-discrepancy and fear of negative evaluation. However, Moscovitch (2009) argues that negative evaluation is a consequence of one's feared self-attributes being exposed. In addition, diagnostic specifications of SAD indicate that socially anxious individuals believe that they will act in a way that will be undesirable to others (i.e., they perceive themselves as being close to their feared self) which will ultimately result in negative evaluations by others (American

Psychiatric Association, 2013). As such, it is reasonable to expect that if those with social anxiety enter a social situation with a perception of being close to their feared self, it is likely they will have stronger fears about negative evaluation. Hence, it was predicted that there would be a relationship between actual-feared self-discrepancy and fear of negative evaluation. Regarding fear of positive evaluation, there is no theoretical underpinning to suggest that actual-feared self-discrepancy would be related to fear of positive evaluation, and no sensible explanation of such a relationship can be offered. Therefore, no relationship between actual-feared self-discrepancy and fear of positive evaluation was proposed in the model.

Self-Discrepancies and Social Anxiety

A number of studies have been conducted to investigate self-discrepancies and various affect. Both correlational and experimental studies generally support the proposition that actual-ought self-discrepancy is related to, and a predictor of, agitation-related emotions such as anxiety (e.g., Higgins, 1987; Higgins, Bond, Klein, & Strauman, 1986; Higgins et al., 1985; Scott & O'Hara, 1993; Strauman, 1992). In addition, several studies with both correlational and experimental designs, using undergraduate and clinical samples, have found support for the actual-ought self-discrepancy to social anxiety relationship (e.g., Johns & Peters, 2012; Strauman, 1989; Strauman & Higgins, 1988). However, some researchers have reported inconsistent results showing that when the effects of depression were considered, no support was found for the *unique* relationship between actual-ought self-discrepancy and anxiety (e.g., Bruch, Rivet, & Laurenti, 2000; Scott & O'Hara, 1993; Tangney, Niedenthal, Covert, & Barlow, 1998), shyness (Bruch et al., 2000), and social anxiety (e.g., Rodebaugh & Donahue, 2007; Weilage & Hope, 1999). These contrasting results suggest that there may be an overlap between the actual-ought

self-discrepancy and both anxiety- and depression-related emotions. This has been acknowledged by Higgins (1999) who further urged to specify '*when*' a unique discrepancy-emotion relationship occurs.

Research has investigated factors that may impact the relationship between self-discrepancies and emotion. For example, a series of studies by Boldero and Francis (2000) revealed that the more important a self-guide is to the individual, the more likely it is that the self-discrepancy will influence emotion. Further, the relevance of the self-discrepancy to the situational context was another factor that was deemed important in predicting emotions. In line with this, Rodebaugh and Donahue (2007) aimed to investigate the unique relationships between actual-ought self-discrepancy and social anxiety. They adapted a measure of self-discrepancies to be more specific to a social task (e.g., asking participants about characteristics that are relevant to a speech task, rather than more general characteristics) and found that although better able to predict social anxiety than the original measure of self-discrepancies, no clear results supported the actual-ought self-discrepancy to social anxiety relationship when the actual-ideal self-discrepancy and depression were considered. This highlights the importance of identifying the unique contribution of self-discrepancies to social anxiety, and controlling for depression in such investigations becomes essential.

A slightly different take on 'when' self-discrepancies influence emotion comes from Carver et al. (1999) who investigated the actual-feared self-discrepancy and discovered that the relationship between the actual-ought self-discrepancy and anxiety was dependent on the proximity of the person to their feared self. Further replications by Heppen and Ogilvie (2003) supported Carver et al.'s (1999) notion that the relationship between the actual-ought self-discrepancy and agitation-related

affect depends (in part) on the proximity of the actual self to the undesired (i.e., feared) self. Specifically, the further a person is from their feared self (i.e., the larger the actual-feared self-discrepancy), the more actual-ought self-discrepancy predicted agitation-related affect.

Taken together, the relationship between actual-ought self-discrepancy and anxiety, relative to depression, is somewhat contentious. The question of *when* this relationship may occur has been addressed to a degree, for example, including a more specific assessment of self-discrepancy (e.g., specific to social anxiety/social situations), or considering depression in these relationships (e.g., Boldero & Francis, 2000; Rodebaugh & Donahue, 2007). Together with the limited evidence regarding the actual-feared self-discrepancy, it is clear that both self-discrepancies need further investigation within the context of social anxiety. As such, the current study aimed to further investigate these relationships in the proposed model, and predicts that both the actual-ought and actual-feared self-discrepancies will influence social anxiety.

Self-Discrepancies and Rumination

There are no studies, to my knowledge, investigating the influence of actual-ought self-discrepancy nor actual-feared self-discrepancy on post-event rumination in social anxiety. However, Carver and Scheier (2001) suggests that individuals engage in rumination about their self-discrepancies, particularly when they try, but are unable, to improve them (e.g., reduce their self-discrepancy). Although not investigated specifically in social anxiety, a relationship between self-discrepancies and depressive rumination has been reported in the literature (Roelofs et al., 2007). The repetitive, negative features of rumination are suggested as transdiagnostic across anxiety and depression (McLaughlin & Nolen-Hoeksema, 2011). Although

post-event rumination is event specific (i.e., rumination about the social event), and depressive rumination is more stable, the depression literature may help inform social anxiety research.

Related to depression, Roelofs et al. (2007) found both actual-ought and actual-feared self-discrepancies were significant predictors of depressive rumination. Similarly, results from Hong, Triyono, and Ong (2013) showed actual-ought self-discrepancy was related to depressive rumination, but in contrast did not support the relationship between the undesired (i.e., feared) self-discrepancy and depressive rumination. Considering these mixed results, and the fact that the self-discrepancy to rumination relationship has not yet been investigated in social anxiety, investigating the relationship between self-discrepancies and rumination in the context of social anxiety is warranted. It was expected that both the actual-ought and actual-feared self-discrepancies would be related to rumination within the context of social anxiety.

Fear of Evaluation and Social Anxiety

Fear of negative evaluation has been extensively researched over the years and as such the proposition that social anxiety is in response to fear of negative evaluation has been well established in theoretical models (e.g., Clark & Wells, 1995; Heimberg et al., 2010), and empirical studies (e.g., Coles et al., 2001; Horley et al., 2004; Mansell & Clark, 1999). In addition, theoretical models of SAD (e.g., Heimberg et al., 2010; Weeks & Howell, 2012) have recently also included fear of positive evaluation. Weeks and Howell (2014) provided a comprehensive review of the progression of the research investigating fear of positive evaluation in social anxiety, which demonstrated that this positively valened fear is another core component in social anxiety, and is important to consider in social anxiety research.

For example, research has demonstrated that fear of positive evaluation is significantly higher in those with a primary diagnosis of social anxiety disorder when compared with non socially-anxious controls (Fergus et al., 2009; Weeks, Heimberg, Rodebaugh, Goldin, & Gross, 2012). Importantly, Weeks and colleagues revealed that although fear of negative evaluation and fear of positive evaluation are related, the two fear domains account for unique, independent variance in social anxiety (Rodebaugh et al., 2012; Weeks & Howell, 2014). As such, these authors suggest that contributions of fear of negative evaluation and fear of positive evaluation to social anxiety should be considered separately. Based on these findings, the current study investigated the influence of fear of negative evaluation and fear of positive evaluation on social anxiety in separate models.

Fear of Evaluation and Rumination

Rapee and Heimberg's (1997) model of social anxiety depicts that the perceived likelihood of negative evaluation by those with social anxiety leads to the symptoms and cognitive processing of social anxiety, including rumination. The rumination experienced by those with social anxiety is focussed on perceived negative aspects of a social situation, that is, the aspects of the social situation that are perceived to have caused negative evaluation fears (Clark & Wells, 1995; Rapee & Heimberg, 1997). In other words, the more fear of negative evaluation experienced within the social situation, the more rumination that is engaged in after the social situation has ended.

Although the literature supports fear of negative evaluation as being related to, and a significant predictor of, rumination (Fehm, Schneider, & Hoyer, 2007; Zou & Abbott, 2012), little is known about the relationship between fear of positive evaluation and rumination in social anxiety. In their revised model, Heimberg et al.

(2010) suggests that the perceived likelihood of *any* evaluation contributes to rumination after a social situation. As such, if a socially anxious person feared positive evaluation during a social event because they were worried about increased standards for future social situations, then it is likely that these worries may form the contents of the post-event rumination. Taking into account the moderate correlation between negative and positive evaluation fears ($r = .36$; Weeks et al., 2012), the current study proposed that both fear of negative evaluation and fear of positive evaluation would play a significant role in leading to rumination.

Social Anxiety and Rumination

Cognitive behavioural models of social anxiety discuss the importance of rumination, whereby the detailed post-event review of the negative aspects of social situations is suggested as a key feature in the maintenance of the disorder (e.g., Clark & Wells, 1995; Heimberg et al., 2010). Brozovich and Heimberg (2008) conducted a comprehensive review of studies that used various methodologies (e.g., self-report, diary-methods, experimental manipulations) to investigate the relationship between social anxiety and rumination. Overall, the review highlighted that those with high levels of social anxiety (clinical and non-clinical samples) engage in more negative rumination about their social performances than those low in social anxiety. Given the consistent findings in the literature, the relationship between social anxiety and rumination was expected in this study.

Mediation

The literature reviewed above provides a base for the direct relationships depicted in the proposed model. In addition to these direct relationships, several mediation relationships were also expected. First, it was predicted that the relationship between self-discrepancies and social anxiety would occur, through fear

of evaluation. Heimberg et al.'s (2010) model of social anxiety shows that a discrepancy between the mental representation of the self and the perceived audience standards leads to fear of both negative and positive evaluation, which leads to the cognitive and somatic symptomology of social anxiety. As such, it was expected that fear of evaluation would serve as a mediator of the relationship between the discrepancy and social anxiety symptomology. However, little evidence has been provided to support this mediation relationship by including self-discrepancies, specific to self-discrepancy theory. Hence, this study addressed this issue by examining whether fear of negative and positive evaluation would mediate the relationship between actual-ought self-discrepancy and social anxiety, separately. Similarly, given the theoretical support for the relationships between actual-feared self-discrepancy and fear of negative evaluation, as well as fear of negative evaluation and social anxiety, it was expected that fear of negative evaluation would mediate the relationship between actual-feared self-discrepancy and social anxiety.

Second, the relationship between self-discrepancies and rumination was predicted based on depression literature. However, given the theoretical and empirical support for relationships existing between self-discrepancies and both fear of evaluation and social anxiety, along with the well-established relationships between fear of evaluation and rumination, and social anxiety and rumination, it was expected that fear of evaluation and social anxiety would play a part in the self-discrepancy-rumination relationship. In a similar vein, it was expected that social anxiety would serve as a mediator of the relationship between fear of evaluation and rumination.

Overall, the model predicted a mediation effect between self-discrepancies and rumination through both fear of evaluation and social anxiety, in sequence. This sequence is hypothesised based on the theoretically supported individual relationships between the variables in the literature that were discussed in Chapter 1, as well as the proposed relationships in the models of social anxiety, which show that a flow-on effect from self-discrepancies to fear of evaluation, to social anxiety and finally, to rumination is likely to occur. Given that no research has examined these factors into one integrative sequential model, the current proposal will address this gap. It was expected that findings would hold interesting implications for a therapeutic intervention that targets self-discrepancies as an underlying mechanism of fear of negative evaluation and subsequent social anxiety symptomology as well as its cognitive process of rumination.

Study 1 Overview

The current study aimed to examine self-discrepancies as a potential underlying mechanism in evaluation fears, social anxiety, and rumination. Despite the suggested key role of discrepant beliefs about the self in social anxiety (J. Wong et al., 2014), there is a lack of empirical research investigating its role in social anxiety, specifically its contribution to the core fears of evaluation, social anxiety symptomology and its cognitive process, rumination. Additionally, an investigation of these factors using an integrative approach is lacking. The current study addressed these issues by integrating actual-ought self-discrepancy and actual-feared self-discrepancy into models containing fears of evaluation, social anxiety and rumination. It was expected that results would assist a deeper understanding of the interplay between these factors, and provide evidence for the potential contribution of self-discrepancies towards the key fears (i.e., fear of evaluation) and cognitive

processing in social anxiety. Specifically, this first study was designed as a preliminary, ground-level investigation of the proposed model and therefore was conducted using a cross-sectional design focusing on non-specific social situations.

Hypotheses

First, as depicted in Figure 2.1, actual-ought self-discrepancy was hypothesised to influence (1) fear of negative evaluation, (2) fear of positive evaluation, (3) trait social anxiety, and (4) rumination directly. Furthermore, it was predicted that actual-ought self-discrepancy would indirectly influence (1) trait social anxiety, and (2) rumination through its relationship with fear of both negative and positive evaluation (in separate models). However, of chief interest was the prediction of the sequential relationship between actual-ought self-discrepancy and rumination through both fear of evaluation (negative, positive) and trait social anxiety. All predicted paths were expected to be positive.

Second, it was hypothesised that actual-feared self-discrepancy would directly influence (1) fear of negative evaluation, (2) trait social anxiety, and (3) rumination. Indirectly, it was expected actual-feared self-discrepancy would influence (1) trait social anxiety, and (2) rumination through its relationship with fear of negative evaluation. Finally, it was predicted that actual-feared self-discrepancy would influence rumination through its relationship with fear of negative evaluation and trait social anxiety, in sequence. As the closer a person gets to their feared self, the more agitation-related affect is experienced (Carver et al., 1999), the relationships between this self-discrepancy and the other variables were predicted to be negative.

Method

Participants

Three hundred and nine complete responses were received from university students at Flinders University ($n = 149$) and community volunteers ($n = 160$) aged between 17 and 64 ($M = 27.27$, $SD = 10.83$; 245 females; 2 participants did not specify sex, 6 did not specify age). University volunteers were first-year undergraduate psychology students recruited as part of a volunteer research pool whereby participation earned course credit. Participants from the community population were recruited using a snowball sampling approach (Biernacki & Waldorf, 1981) via social media and advertising websites. The majority of participants ($n = 302$; 97.7%) resided in Australia with a small number residing in other countries (USA, $n = 4$; UK, $n = 1$; Serbia, $n = 1$; Laos, $n = 1$). Participants were asked whether they identified with a particular ethic group (yes/no), those who answered yes were further asked to enter (free-text) the ethic group they identified with. Only a small number ($n = 57$) of participants answered yes to identifying with a particular ethnic group. Based on the 'Australian Standard Classification of Cultural and Ethnic Groups' (Australian Bureau of Statistics, 2016), the free-text responses of those 57 participants (e.g., Aboriginal, Australian, Japanese, Portuguese, Indian, Italian), were identified as follows: Oceanian, $n = 23$; Southern and Eastern European, $n = 13$; South-East Asian, $n = 8$; North-East Asian, $n= 6$; North African and Middle Eastern, $n = 3$; Southern and Central Asian, $n = 2$; People of the Americas, $n = 2$; Sub-Saharan African, $n = 1$.

Measures

Self-discrepancies. Self-discrepancies were measured using a modified version of the Selves Questionnaire (Higgins, 1987; see Appendix A). As adapted by

Carver et al. (1999), descriptions of the ought and feared selves were presented on separate pages to participants (counterbalanced between participants). Carver et al.'s (1999) adaptation was designed to allow participants to make their own judgements about their discrepancy, which was thought to make the measure more sensitive to smaller degrees of discrepancy. The instructions of the Selves Questionnaire were further adapted for the current study to be more specific to the context of a social situation (Higgins, 1999; Rodebaugh & Donahue, 2007). Participants were asked to list 7 trait characteristics that fit each description and then rate each characteristic they listed from 1 (I do not at all believe I ought to possess/fear possessing this characteristic) to 7 (I strongly believe I ought to possess/fear possessing this characteristic). On the next page participants rated the degree they believed they actually displayed each characteristic they listed from 1 (I am nothing at all like this characteristic) to 7 (I am just like this characteristic). The difference between the average ought/feared self and actual self ratings scores were calculated to achieve an average self-discrepancy rating in social situations. The original Selves Questionnaire has demonstrated good reliability and validity in studies conducted by those who developed the measure (e.g., Higgins et al., 1985; Scott & O'Hara, 1993; Strauman, 1989; Strauman & Higgins, 1988). Carver et al. (1999) reported acceptable internal reliability for the adapted actual-ought ($\alpha = .73$) and actual-feared ($\alpha = .77$) self-discrepancy measures. The Cronbach's alpha for the overall actual-ought self-discrepancy and actual-feared self-discrepancy scales in the present study were good ($\alpha = .80, .90$, respectively).

The Brief Fear of Negative Evaluation scale (BFNE). The original BFNE scale (Leary, 1983) is a 12-item self-report measure of fear and distress related to negative evaluation from others. The BFNE (see Appendix B) uses a 5-point rating

scale with higher scores representing a greater fear of negative evaluation. Rodebaugh, Woods, et al. (2004) and Weeks et al. (2005) reported that the 8 straightforwardly-worded items (BFNE-S) are more reliable and valid indicators of fear of negative evaluation than the original version and as such, only the straightforward items were used in analyses. The BFNE-S has demonstrated excellent internal consistency (all α's > .90) in undergraduate (Rodebaugh, Woods, et al., 2004) and clinical (Weeks et al., 2005) samples. Convergent and discriminant validity is deemed acceptable by results showing that this measure is more highly correlated with a measure of social anxiety (r = .59 with the Liebowitz Social Anxiety Scale) than a measure of depression (r = .32 with the Beck Depression Inventory; Weeks et al., 2005). Internal consistency in the current sample was excellent (α = .95).

The Fear of Positive Evaluation Scale (FPES). The 10-item FPES (Weeks, Heimberg, & Rodebaugh, 2008; Appendix C), measures fear and distress related to positive evaluation from others. This measure includes two reverse scored items that are administered to reduce response bias but are not included when calculating a total score for the measure. The FPES uses a 10-point rating scale with higher scores indicating greater fear of positive evaluation. The FPES has demonstrated good internal consistency (α = .80; Weeks, Heimberg, & Rodebaugh, 2008), and reasonable convergent and discriminant validity as demonstrated by a higher correlation with social anxiety (r = .48 with the Social Interaction Anxiety Scale) than generalised anxiety disorder (r = .34 with the Generalised Anxiety Disorder Questionnaire; Weeks, Heimberg, & Rodebaugh, 2008). Internal consistency in the current sample was good (α = .88).

Trait social anxiety. The Social Phobia Inventory (SPIN; Connor et al., 2000; Appendix D), was used to assess participant's levels of trait social anxiety. The SPIN assesses three dimensions of social anxiety (fear, avoidance, physiology), using a 5-point rating scale with higher scores indicating greater trait social anxiety. The SPIN has demonstrated good internal consistency (α = .87-.94), test-retest reliability (r = .86) convergent validity (r = .71 with Social Phobia Scale; r = .60 with Social Interaction Anxiety Scale), and discriminant validity (r = -.03 with Depression Anxiety Stress Scales – Depression subscale; Antony, Coons, McCabe, Ashbaugh, & Swinson, 2006; Connor et al., 2000). Cronbach's Alpha for the current sample was excellent (α = .94).

Rumination. The Extended Post-Event Processing Questionnaire (E-PEPQ; Fehm, Hoyer, Schneider, Lindemann, & Klusmann, 2008; Rachman, Gruter-Andrew, & Shafran, 2000) was used to assess participants' tendency to engage in social-specific rumination (Appendix E). As per Q. J. J. Wong, (2015), the 17-item E-PEPQ was adapted from a 100-point visual analogue scale to an 11-point rating-scale (0: not at all; 10: very much) in order to improve reliability, and reduce missing data (e.g., Couper, Tourangeau, & Conrad, 2006). The E-PEPQ has demonstrated excellent internal consistency (α = .90-.94), and construct validity whereby the E-PEPQ had a stronger association with the Social Phobia Scale than the Depression Anxiety Stress Scales (Q. J. J. Wong, 2015). Higher scores on this measure relate to greater social-evaluative rumination. Internal consistency in the current sample was excellent (α = .95).

Depression. Previous research (e.g., Rodebaugh & Donahue, 2007) has called into question the unique association between actual-ought self-discrepancy and social anxiety over and above the effects of depression, suggesting that there

may be an overlap between the actual-ought self-discrepancy and both anxiety- and depression-related emotions (e.g., Boldero & Francis, 2000; Rodebaugh & Donahue, 2007). It was therefore determined that depression should be a consideration in these relationships. In addition, depression is a common co-morbidity of social anxiety (American Psychiatric Association, 2013; McLaughlin & Nolen-Hoeksema, 2011). As such, depression was measured in the current study to establish clearer conclusions regarding all relationships, by controlling for it in analyses[1]. To measure depression, the Depression Anxiety Stress Scales-21 (DASS-$_{21}$; Lovibond & Lovibond, 1995) was used. The DASS$_{21}$ is a short form version of the original 42-item DASS (Lovibond & Lovibond, 1995) and combines a set of three self-report scales assessing depression, anxiety, and stress into one 21-item scale. For the purposes of controlling for depression in subsequent analyses (and reducing demands on participants), only the 7-item depression subscale of the DASS$_{21}$ was administered (DASS$_{21}$-D; see Appendix F). Respondents rated how much each statement applied to them over the past week on a 4-point rating scale from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). Antony, Bieling, Cox, Enns, and Swinson (1998) showed that the DASS$_{21}$-D demonstrates excellent internal consistency ($\alpha = .94$) and good convergent validity ($r = .79$ with the Beck Depression Inventory). Internal consistency in the current study was excellent ($\alpha = .93$).

Procedure

Demographic questions and the measures described above were converted into an online survey format. The survey was advertised on the Flinders University

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[1] For those interested readers, please see footnote for relevant tests not including depression in the models tested. Similar trends and effect sizes were noted between the models that included depression as a control variable and those that did not.

research participation system (for student participants) and the social media site Facebook, and advertising website, Gumtree (for community participants). Participants were asked to complete the 30-minute survey via the survey software Qualtrics. The current study was approved by the Flinders University Social and Behavioural Research Ethics Committee.

Statistical Analysis

Means, standard deviations, and bootstrapped bivariate and partial correlations were calculated using IBM SPSS Statistics version 22. The mediation models were examined using an SPSS macro PROCESS (A. F. Hayes, 2013) which provides estimates and bootstrap confidence intervals for the direct, indirect and total effects. When using the serial mediator model (Model 6) PROCESS allows mediation models with multiple mediator variables to be linked in a causal chain with a specified direction assumed (A. F. Hayes, 2013). Additional simple mediation models and post-hoc analyses were conducted using PROCESS Model 4 (A. F. Hayes, 2013). As per recommendations by A. F. Hayes (2013), all reported coefficients using PROCESS are unstandardized. Statistical significance was inferred if the bootstrapped 95% confidence interval (CI) for the coefficient did not span zero. A large number of bootstrap samples (10,000) was chosen to minimise sampling error in the estimation of the end points of the confidence interval (A. F. Hayes, 2013).

<div align="center">

Results

</div>

Age, Sex and Recruitment Group Differences

Correlations and independent samples *t* tests were first conducted to determine if any variables in the model differed based on age, sex, and/or recruitment group before conducting the main analyses. A significant negative

correlation between age and actual-feared self-discrepancy ($r(303) = -.14$, $p = .015$) was revealed but no other correlations were significant. Regarding sex, there were no significant differences on any variable with the exception of the actual-feared self-discrepancy. Males scored significantly lower ($M = .74$, $SD = 1.14$), than their female counterparts ($M = 1.43$, $SD = 1.30$; $t(305) = -3.79$, $p = <.001$), indicating that males were closer to their feared selves than females. A significant difference between university and community samples emerged only for the actual-feared self-discrepancy and depression. Community participants were closer to their feared self ($M = 1.12$, $SD = 1.28$), than university participants ($M = 1.46$, $SD = 1.30$; $t(307) = -2.32$, $p = .021$). Community participants also scored higher on depression ($M = 7.43$, $SD = 5.82$) compared to university participants ($M = 5.03$, $SD = 4.92$; $t(304.20) = 2.40$, $p = < .001$).

Descriptive Statistics

Given the negative relationship between age and actual-feared self-discrepancy, the difference between sexes on actual-feared self-discrepancy, and the difference between recruitment groups on actual-feared self-discrepancy and depression, partial correlations controlling for age, sex, and recruitment group were conducted to allow all variables to be equivalent. Table 2.1 displays the means and bootstrapped partial correlation matrix for all variables. Significant partial correlations were observed for all expected relationships except actual-feared self-discrepancy, which only revealed a significant partial correlation with fear of negative evaluation. All significant correlations were positive, including the relationship between actual-feared self-discrepancy and fear of negative evaluation.

Table 2.1

Descriptive Statistics and Partial Correlation Matrix of Variables included in the Models, Controlling for Age, Sex, and Recruitment

Sample

Variables	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*
1. Ought SD	1.30	1.51	-					
2. Feared SD	1.28	1.30	.01	-				
3. FNE	23.46	8.91	.41*	.12*	-			
4. FPE	30.18	16.95	.37*	.03	.59*	-		
5. Social Anxiety	24.72	15.03	.44*	.01	.77*	.66*	-	
6. Rumination	103.04	42.40	.34*	.07	.56*	.48*	.52*	-
7. Depression	6.27	5.53	.40*	-.02	.55*	.47*	.55*	.44*

Note. N = 309. Ought SD = actual-ought self-discrepancy; Feared SD = actual-feared self-discrepancy; FNE = fear of negative

evaluation; FPE = fear of positive evaluation; 10,000 bootstrap samples.

*Significant as bootstrap 95% CI did not span zero

Actual-Ought Self-Discrepancy Model Testing

As illustrated in Figure 2.1, the model proposes that self-discrepancy influences evaluation fears, which then influences trait social anxiety and subsequently influences rumination. First, the models related to the actual-ought self-discrepancy were tested with age, sex, and recruitment group controlled during analyses. To address some of the previous criticisms regarding the *unique* relationship between actual-ought self-discrepancy and agitation-related affect, testing of models was performed with depression also controlled. In addition, to remove variance associated with the actual-feared self-discrepancy (i.e., as a moderation effect was seen in Carver et al.'s 1999 study), this self-discrepancy was also controlled for while testing the models involving the actual-ought self-discrepancy (and vice versa). First, the direct effects of the two actual-ought self-discrepancy models were examined (see Table 2.2 and Figure 2.2 for fear of negative evaluation; see Table 2.3 and Figure 2.3 for fear of positive evaluation). As predicted, after controlling for the covariates, actual-ought self-discrepancy directly influenced fear of negative evaluation, fear of positive evaluation, and trait social anxiety. Contrary to expectations, actual-ought self-discrepancy did not directly influence rumination in either model. However, in line with expectations, fear of evaluation in both models showed a direct relationship to trait social anxiety and rumination, and trait social anxiety was directly related to rumination.

Next, indirect effects for the two models involving actual-ought self-discrepancy were examined. All indirect effects were significant. First, the indirect effects of actual-ought self-discrepancy on trait social anxiety and rumination respectively through fear of negative evaluation (Table 2.2) and fear of positive evaluation (Table 2.3) were significant. Similarly, the relationship between actual-

ought self-discrepancy and rumination through trait social anxiety was significant in both models. The relationship between fear of evaluation and rumination through trait social anxiety in both models was also significant. Most importantly, supporting the key hypotheses regarding the relationship between actual-ought self-discrepancy and rumination through both fear of evaluation and trait social anxiety in sequence was found to be significant in both models.

Although not central to the current thesis, additional post-hoc analyses were performed to investigate the relative strength of the actual-ought self-discrepancy to trait social anxiety through both fear of negative evaluation and fear of positive evaluation (where the two fears were operating in parallel within the same model). This was undertaken to provide a better understanding of the roles of fear of negative and positive evaluation in the actual-ought self-discrepancy to social anxiety relationship. This analysis was also conducted for the actual-ought self-discrepancy to rumination relationship. Controlling for age, sex, recruitment group, depression, and actual-feared self-discrepancy, this analysis revealed no significant difference between the strength of the indirect effect of the actual-ought self-discrepancy to social anxiety through fear of negative evaluation compared with this indirect effect through fear of positive evaluation[2], $B = .55$, $SE = .31$, 95% CI [-.04, 1.19]. Likewise, the indirect effect of actual-ought self-discrepancy on rumination through fear of negative evaluation was not statistically different from the indirect effect through fear of positive evaluation[3], $B = 1.02$, $SE = .78$, 95% CI [-.40, 2.65].

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[2]Actual-ought self-discrepancy → fear of negative evaluation → social anxiety: $B = 1.16$, $SE = .28$, 95% CI [.65, 1.75].
Actual-ought self-discrepancy → fear of positive evaluation → social anxiety: $B = .61$, $SE = .19$, 95% CI [.29, 1.04].
[3]Actual-ought self-discrepancy → fear of negative evaluation → rumination $B = 2.17$, $SE = .64$, 95% CI [1.08, 3.59].
Actual-ought self-discrepancy → fear of positive evaluation → rumination $B = 1.14$, $SE = .45$, 95% CI [.43, 2.27].

Table 2.2

Direct and Indirect Effects of Actual-Ought Self-Discrepancy on Fear of Negative Evaluation, Trait Social Anxiety and Rumination,

Controlling for Age, Sex, Recruitment Sample, Depression, and Actual-Feared Self-Discrepancy

Predictor variable	Dependent variable	*B*	*SE*	BC 95% CI	
				Lower	Upper
SD	FNE	1.32	.30	.73	1.91
SD	SA	1.18	.40	.40	1.97
SD	RUM	2.18	1.50	-.77	5.13
FNE	SA	1.09	.08	.94	1.24
FNE	RUM	1.58	.37	.86	2.30
SA	RUM	.43	.22	.00	.86
Total effect		5.39	1.56	2.32	8.46
Indirect effects					
SD→FNE→SA		1.43	.33	.83	2.12
SD→FNE→RUM		2.08	.69	.93	3.63
SD→SA→RUM		.51	.35	.02	1.47

FNE→SA→RUM	.55	.26	.05	1.08
SD→FNE→SA→RUM[4]	.62	.38	.01	1.51

Note. $N = 301$. BC = bias-corrected; CI = confidence interval; SD = actual-ought self-discrepancy; FNE = fear of negative evaluation; SA = trait social anxiety; RUM = rumination. 10,000 bootstrap samples.

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[4]Actual-ought self-discrepancy → fear of negative evaluation → trait social anxiety → rumination, without depression controlled: $B = 1.58$, $SE = .71$, 95% CI [.35, 3.15]. This model demonstrated a similar trend as the model that included depression as a control variable. However, larger effect sizes were found when depression was not included in the model.

Figure 2.2. The final model for the role of actual-ought self-discrepancy on fear of negative evaluation, trait social anxiety and rumination.

Table 2.3

Direct and Indirect Effects of Actual-Ought Self-Discrepancy on Fear of Positive Evaluation, Trait Social Anxiety and Rumination,

Controlling for Age, Sex, Recruitment Sample, Depression, and Actual-Feared Self-Discrepancy

Predictor variable	Dependent variable	*B*	*SE*	BC 95% CI	
				Lower	Upper
SD	FPE	2.45	.61	1.25	3.66
SD	SA	1.58	.44	.71	2.45
SD	RUM	2.29	1.52	-.71	5.29
FPE	SA	.42	.04	.34	.51
FPE	RUM	.49	.16	.17	.81
SA	RUM	.72	.20	.34	1.11
Total effect		5.39	1.56	2.32	8.46
Indirect effects					
SD→FPE→SA		1.04	.29	.51	1.65
SD→FPE→RUM		1.21	.48	.45	2.44
SD→SA→RUM		1.13	.48	.38	2.32

FPE→SA→RUM	.36	.10	.19	.56
SD→FPE→SA→RUM[5]	.75	.31	.29	1.55

Note. N = 301. BC = bias-corrected; CI = confidence interval; SD = actual-ought self-discrepancy; FPE = fear of positive evaluation; SA = trait social anxiety; RUM = rumination. 10,000 bootstrap samples.

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[5]Actual-ought self-discrepancy → fear of positive evaluation → trait social anxiety → rumination, without depression controlled: *B* = 1.94, *SE* = .53, 95% CI [1.05, 3.18]. This model demonstrated a similar trend as the model that included depression as a control variable. However, larger effect sizes were found when depression was not included in the model.

Figure 2.3 The final model for the role of actual-ought self-discrepancy on fear of positive evaluation, trait social anxiety and

rumination.

Actual-Feared Self-Discrepancy Model Testing

Next, the model involving the actual-feared self-discrepancy (controlling for the covariates; see Table 2.4 and Figure 2.4) was tested. A significant direct effect was found between actual-feared self-discrepancy and fear of negative evaluation but as per the partial correlations, this relationship was positive where it was expected that a negative relationship would be found. Although a negative coefficient was shown between actual-feared self-discrepancy and trait social anxiety, this direct path was not significant. The path between actual-feared self-discrepancy and rumination was also not significant. However, as predicted, significant direct effects were observed between fear of negative evaluation and trait social anxiety, fear of negative evaluation and rumination, and between trait social anxiety and rumination. Finally, the indirect effects for the model containing the actual-feared self-discrepancy were investigated (see Table 2.4). When controlling for the covariates, all indirect effects were significant except for the actual-feared self-discrepancy to rumination through trait social anxiety, and the fear of negative evaluation to rumination through trait social anxiety relationships. However, the indirect effects that were significant were not in the predicted direction. First, the significant indirect effects of actual-feared self-discrepancy on trait social anxiety and rumination through fear of negative evaluation respectively, were positive. Next, the relationship between actual-feared self-discrepancy and rumination through both fear of negative evaluation and trait social anxiety in sequence was positive.
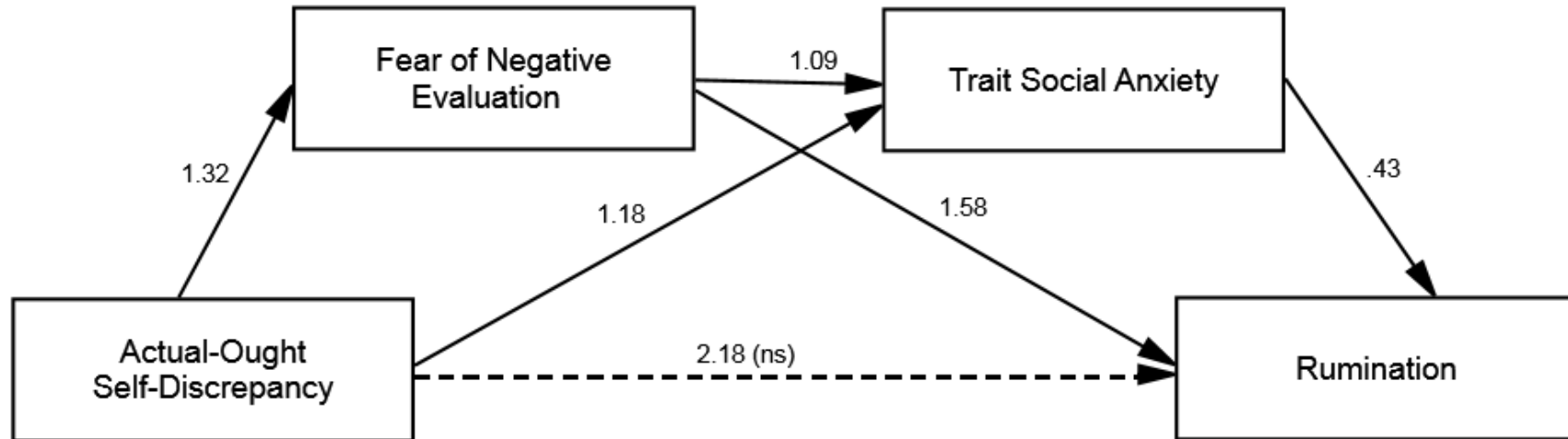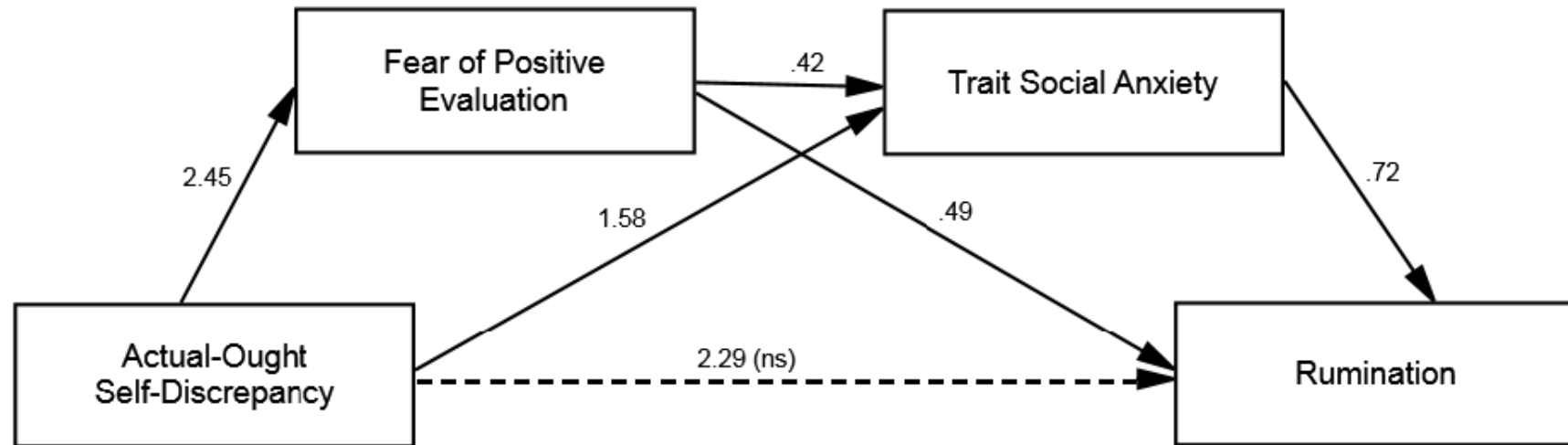
Table 2.4

Direct and Indirect Effects of Actual-Feared Self-Discrepancy on Fear of Negative Evaluation, Trait Social Anxiety and Rumination,

Controlling for Age, Sex, Recruitment Sample, Depression, and Actual-Ought Self-Discrepancy

Predictor variable	Dependent variable	*B*	*SE*	BC 95% CI	
				Lower	Upper
SD	FNE	.91	.32	.27	1.55
SD	SA	-.74	.42	-1.58	.09
SD	RUM	.99	1.58	-2.12	4.10
FNE	SA	1.09	.08	.94	1.24
FNE	RUM	1.58	.37	.86	2.30
SA	RUM	.43	.22	.00	.86
Total effect		2.53	1.69	-.81	5.86
Indirect effects					
SD→FNE→SA		.99	.36	.33	1.72
SD→FNE→RUM		1.43	.63	.46	3.02
SD→SA→RUM		-.32	.28	-1.18	.03

FNE→SA→RUM	.44	.25	-.03	.95
SD→FNE→SA→RUM[6]	.42	.28	.03	1.20

Note. $N = 301$. BC = bias-corrected; CI = confidence interval; SD = actual-feared self-discrepancy; FNE = fear of negative evaluation;

SA = trait social anxiety; RUM = rumination. 10,000 bootstrap samples. 10,000 bootstrap samples.

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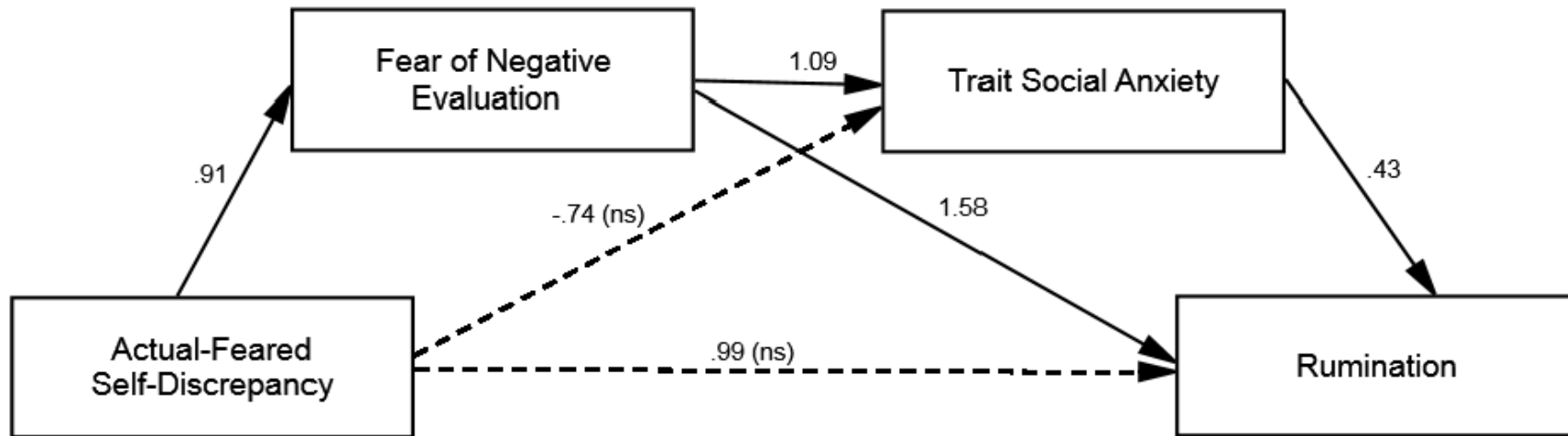
[6]Actual-feared self-discrepancy → fear of negative evaluation → trait social anxiety → rumination, without depression controlled: $B = .57$, $SE = .36$, 95% CI [.09, 1.59]. This model demonstrated a similar effect size and trend as the model that included depression as a control variable.

Figure 2.4. The final model for the role of actual-feared self-discrepancy on fear of negative evaluation, trait social anxiety and rumination.

Discussion

The current study undertook a preliminary exploration of three separate models incorporating self-discrepancies as potential underlying factors of evaluation fears in social anxiety. Specifically, applying Higgins (1987) self-discrepancy theory and its extension (Carver et al., 1999), three models were examined focussing on the relationship between actual-ought self-discrepancy and negative and positive evaluation fears, and the relationship between actual-feared self-discrepancy and negative evaluation fears in social anxiety. In addition, the influence of these relationships on trait social anxiety and rumination was examined.

Before discussing the findings, it should be noted that the results of this study need to be interpreted with caution. The data in this study were collected at a single time point, and despite it being common practice in social sciences literature to use cross-sectional designs to study mediation effects, some researchers have argued that this approach is entirely inappropriate due to its lack of a longitudinal design (e.g., Cole and Maxwell, 2003; Maxwell & Cole, 2007; Maxwell, Cole, & Mitchell, 2011). However, in some more recent literature other researchers have, on the other hand, argued that mediation analysis with cross-sectional data is warranted for describing relationships and testing hypotheses (e.g., Darlington & Hayes, 2017; Hayes & Rockwood, 2016). Given the opposing views on this matter, the issue is worth unpacking further. Cole and Maxwell (2003) sensibly state that because mediation is essentially a causal chain, the causal variables must precede the outcome variables. Otherwise inferences about causation will be potentially incorrect and, without a restrictive set of conditions being met (e.g., 'stationary processes' and 'system equilibrium'; Cole & Maxwell, 2003), cross-sectional studies will provide biased and potentially misleading estimates of mediational processes

(Cole & Maxwell, 2003). Further, Maxwell and Cole (2007) and Maxwell et al. (2011) demonstrated that cross-sectional approaches to longitudinal mediation can substantially over- or underestimate longitudinal effects. Thus, a variable that is found to be a strong mediator in a cross-sectional analysis may not be a mediator at all in longitudinal analysis, or vice versa. Based on this, the authors (Maxwell & Cole, 2007; Maxwell et al., 2011) expressed concerns regarding the use of cross-sectional analysis as a preliminary investigation for future longitudinal designs. Instead, the authors recommend that researchers should collect data in a fashion that allows time to elapse between the theoretical cause and its anticipated effect.

Mediation is of fundamental interest in many areas of psychology because of the central role it can play in answering questions about underlying processes. Despite Maxwell and Cole (2007) strongly disagreeing with mediation in cross-sectional designs, they themselves acknowledge that over the past 20 years, most efforts to test for mediation have been based on cross-sectional data and in fact, upon a review of the literature these authors found that cross-sectional tests of mediation were the norm in premier journals from a diversity of psychological disciplines. On the other side of the debate, Hayes and Rockwood (2016) take a less restrictive approach to mediation analysis by allowing room for the understanding that meeting the requirements for 'pure' mediation analysis is difficult, if not impossible, as summarised in the following quote:

> *There are some hardliners who say that to claim the existence of cause-effect relationships (and mediation is by definition a cause-effect process), one must engage in experimental manipulation with random assignment, collect data over time or, ideally, both. Furthermore, one must meet an overwhelming number of*

assumptions beyond those of linear modeling that go by such names as "sequential ignorability," "stable unit treatment value" and others, many that are quite technical in nature or hard or impossible to test. Others argue that one cannot conduct a mediation analysis with merely correlational data, that moderators must be independent of presumed causes of effects, and the list of requirements goes on and on (see e.g., Emsley, Dunn, & White, 2010; Preacher, 2015, for a discussion of many of these assumptions). We feel that if these are taken as literal requirements rather than as just ideals or recommendations, most research would not be done because most researchers cannot meet these requirements (due to resource constraints, ethics, and a myriad list of other reasons). Indeed, the use of such a high standard for causal inference would render most of the natural sciences unable to say anything about cause-effect relationships, given that experimentation, manipulation, and the various assumptions that social scientists often impose on themselves are rarely used or met in the natural sciences (c.f., Darlington & Hayes, 2017, pp. 166-168). We would rather see more imperfect work conducted and published than see research slow to a trickle because investigators don't feel that their work will satisfy all critics and pass every test for valid causal inference. (p. 2)

Hayes and Rockwood (2016) do admit to having a more 'relaxed' attitude with regard to the requirements for mediation. However, their standing is underpinned by their argument that theory and a solid logical argument are of primary importance. As such, they do not agree that one cannot conduct a mediation

analysis with correlational data, as it can provide some insight into the relationships you are investigating (Hayes & Rockwood, 2016).

Taken together, the issue of mediation in cross-sectional designs ultimately requires 'taking a side'. The stance taken for the current thesis is that it is most important of all to justify the causal story through existing theory, current literature, and logical reasoning, especially when the data collection methods leave questions about causality (Hayes & Rockwood, 2016). Given that the causal story for the mediation model proposed in the current thesis is justified through the review of the existing literature and logical argument, this thesis sided with Hayes and colleagues. For these reasons, mediation analysis was chosen for the cross-sectional design. However, of note, Hayes & Rockwood (2016) and Darlington and Hayes (2017) do still recommend that acknowledgement of the potential limitations associated with mediation in cross-sectional data should be given, and that the interpretation of causal relationships should be done with the appropriate cautions. As such, despite theoretically the proposed model suggested directional flow, given the cross-sectional design of the study, it is impossible to make solid conclusions regarding causal relationships. Any terms related to mediation are used loosely and with full acknowledgement of the limitations of the study design. The two models involving the actual-ought self-discrepancy were mostly in line with predictions. Regarding the direct effects, as expected, the actual-ought self-discrepancy directly influenced fear of negative evaluation, fear of positive evaluation, and trait social anxiety. These results provide additional empirical support to both Heimberg et al.'s (2010) theoretical model that discrepant beliefs about the self may lead to evaluation fears and social anxiety, and J. Wong et al.'s (2014) proposition that a discrepancy between the individuals' perception of the demands of a social situation and their

perceived abilities is a key contributor to social anxiety. As these results were found whilst controlling for depression and the actual-feared self-discrepancy, this study also adds to the debate on whether actual-ought self-discrepancy is *uniquely* related to social anxiety (e.g., Rodebaugh & Donahue, 2007; Weilage & Hope, 1999). Results from this study support the unique contribution of actual-ought self-discrepancy to social anxiety, independent of the effects of depression and actual-feared self-discrepancies. However, given the contention in the literature about the unique associations between self-discrepancies and agitation- and dejection-related affect, findings from the current study suggest that an investigation into the unique effect of actual-ought self-discrepancy on depression may be worthwhile. However, this is beyond the scope of the current investigation and therefore awaits future research.

In contrast, findings did not support a direct relationship between actual-ought self-discrepancy and rumination. The relationship between actual-ought self-discrepancy and rumination was predicted based on theoretical reasoning and the previously demonstrated relationship between this self-discrepancy and depressive rumination (e.g., Roelofs et al., 2007). Despite rumination being suggested as a transdiagnostic process between depression and social anxiety, in the context of social anxiety, actual-ought self-discrepancy failed to show its direct influence on rumination. In this study, rather than a more general ruminative tendency, social-specific rumination was measured. Similarly, the self-discrepancy measure was adapted to measure characteristics that were relevant specifically to social situations. The possible different contents of the self-discrepancies and ruminative thoughts in this study compared to the previous studies investigating depression (e.g., Roelofs et al., 2007) may contribute to the inconsistencies.

The significant direct relationships between fear of evaluation and trait social anxiety, fear of evaluation and rumination, and trait social anxiety and rumination found in this study were consistent with findings from previous studies (e.g., Coles et al., 2001; Fehm et al., 2007; Horley et al., 2004; Mansell & Clark, 1999; Zou & Abbott, 2012), as was the significant relationship between fear of positive evaluation and trait social anxiety (e.g., Weeks, Heimberg, Rodebaugh, et al., 2008). A novel finding in the current study is the relationship between fear of positive evaluation and rumination. Although Heimberg et al.'s (2010) model depicts that fear of evaluation may lead to rumination, to date, little empirical evidence has been provided for the relationship between fear of positive evaluation and rumination. The current study predicted that fear of positive evaluation would influence rumination in a similar way to fear of negative evaluation due to their moderate correlation. The expected results suggest that not only fear of negative evaluation but also fear of positive evaluation are related to the troublesome cognitive process of rumination. As such, if a socially anxious person worries about others perceiving them as appearing 'too good' after a social situation, this may lead them to ruminate about others expectations for future social performance, or about potential conflict with others deemed as holding a higher social standing (e.g., Gilbert, 2001).

The importance of rumination in maintaining social anxiety has been suggested in cognitive-behavioural models (e.g., Clark & Wells, 1995; Heimberg et al., 2010). In addition, according to Weeks and Howell (2012), both negative and positive evaluation fears should be targeted in order to improve social anxiety. The relationships found in this study between both fear of negative, and fear of positive evaluation and rumination provide support for the bivalent approach to social anxiety introduced by Weeks and Howell (2012). As such, the results of this study

also have clinical implications, suggesting that targeting both fears may be able to reduce rumination, one of the key maintenance factors in social anxiety.

Next, examination of the indirect effects of actual-ought self-discrepancy on social anxiety and rumination in separate models revealed that, as predicted, actual-ought self-discrepancy indirectly influenced trait social anxiety through fear of negative/positive evaluation. Boldero and Francis (2000) suggested that further investigations into factors that might be underlying the self-discrepancy to anxiety relationship should be conducted. The current study examined whether some of the variance in the actual-ought self-discrepancy to social anxiety relationship would be explained by fear of evaluation. By controlling for depression and actual-feared self-discrepancy, this result supports the role of both fears of evaluation as potential mediators of the relationship between the self-discrepancy and social anxiety.

Further, the indirect effects from actual-ought self-discrepancy to rumination through fear of negative evaluation and fear of positive evaluation, separately, were significant. Given that the direct relationship between actual-ought self-discrepancy and rumination was not significant, the significant result from this mediation analysis suggests that self-discrepancy may not directly impact on rumination but may do so through its relationship with fears of evaluation. Therefore, in order to reduce rumination, reducing fear of evaluation by targeting self-discrepancies may be potentially effective. On the other hand, the indirect effect may also be explained by the measure of social-specific rumination, which typically focusses on aspects of a social situation that may be evaluated by others. As such, the rumination questionnaire assesses the concerns about the evaluation rather than their perceived discrepancy, which may explain the lack of direct effects from self-discrepancy to

rumination. Future research should modify the contents of the rumination measure to be more specific to self-discrepancy and examine its direct effects on rumination.

Additional post-hoc analyses were undertaken to investigate whether there was a difference between the indirect effects from actual-ought self-discrepancy to trait social anxiety or rumination through the two evaluation fears. These analyses revealed no significant difference between the indirect effect involving fear of negative evaluation compared to the indirect effect involving fear of positive evaluation. Taken together, actual-ought self-discrepancy may directly lead to both negative and positive evaluation fears and social anxiety. Indirectly, such a discrepancy may also generate social anxiety and rumination via both evaluation fears, and each of the pathways through fear of evaluation are equally important to consider (i.e., one is not stronger than the other).

Of most interest to the current thesis was the test of the integrated models from actual-ought self-discrepancy to evaluation fears, social anxiety, and rumination in sequence. In two separate models, results supported actual-ought self-discrepancy as indirectly influencing rumination through both evaluation fears (negative/positive), and social anxiety in sequence. The significant sequential mediation models support theoretical perspectives suggesting that actual-ought self-discrepancy may increase evaluation fears, leading to an increase in social anxiety and in turn leading to a subsequent increase in rumination. Previous literature has reported results of many of the independent relationships including the relationships between actual-ought self-discrepancy and social anxiety (e.g., Johns & Peters, 2012; Strauman, 1989; Strauman & Higgins, 1988), fear of evaluation and social anxiety (Coles et al., 2001; Fergus et al., 2009; Horley et al., 2004; Mansell & Clark, 1999; Weeks et al., 2012), and social anxiety and rumination (Brozovich &

Heimberg, 2008). However, no studies have investigated an integrated model incorporating these factors using self-discrepancies derived from self-discrepancy theory. The present study addressed this gap in the literature in order to better understand the relationships between these factors, which in turn can help inform therapeutic interventions for SAD.

To date, fears of evaluation have been repeatedly researched in social anxiety. Although the models of social anxiety do implicate self-discrepancies as a factor that influences social anxiety, specific tests on their contribution to fear of evaluation from the perspective of self-discrepancy theory, particularly incorporating fear of positive evaluation, and other cognitive symptoms of social anxiety (i.e., rumination) are lacking. The current results support the sequential model involving actual-ought self-discrepancy and provide preliminary evidence for the role of the self, namely discrepant beliefs about what one believes they should be and what one believes they actually are, in contributing to *both* fears of evaluation and rumination in social anxiety. Investigating the models in an integrative manner provides some insight into not only how the self-discrepancy influences the core fear in social anxiety, but also how reducing this fear through targeting actual-ought self-discrepancy may be beneficial for other symptoms, and cognitive processing. As suggested by Weeks and Howell (2012), targeting both fear of negative and fear of positive evaluation is important in order to reduce social anxiety. Based on the results from this study, targeting the actual-ought self-discrepancy as a potential mechanism underlying both fears of evaluation may be effective at reducing these fears of evaluation, which further results in a reduction in the in-situation anxiety and the rumination after the social event.

The results of the model involving the actual-feared self-discrepancy were less clear. Although actual-feared self-discrepancy was significantly related to fear of negative evaluation, contrary to predictions, this relationship was positive. Diagnostic specifications of SAD suggest that negative evaluation is a consequence of acting in a way that is undesirable to others (American Psychiatric Association, 2013). Thus, it was expected that being close to ones feared self (i.e., a lower actual-feared self-discrepancy) would produce a greater fear of negative evaluation, resulting in a negative relationship between the two variables. However, the positive direct and indirect effects found in this study failed to support the proposed notion, suggesting that the further away a person is from their feared self, the more fear of negative evaluation that is experienced (or the closer they become, the less fear of negative evaluation that is experienced). In addition, no support was found between actual-feared self-discrepancy and trait social anxiety, or rumination.

Regarding the indirect effects of actual-feared self-discrepancy to social anxiety and rumination through fear of negative evaluation, separately, although the indirect effects were significant, due to the positive relationship between actual-feared self-discrepancy and fear of negative evaluation, these indirect effects were not in line with predictions. These results are suggesting that when a person perceives distance from their feared self, they experience more fear of negative evaluation, which then leads to social anxiety or rumination. The indirect effect between actual-feared self-discrepancy and rumination through social anxiety was not significant, nor was the fear of negative evaluation to rumination through social anxiety relationship, although the latter was significant in the model involving the actual-ought self-discrepancy. Further, in contrast to predictions, the sequential relationship between actual-feared self-discrepancy and rumination through both

fear of negative evaluation and social anxiety, albeit significant, did not represent the expected results. Again, as there was a positive relationship between actual-feared self-discrepancy and fear of negative evaluation this significant sequential model suggests that the more distance between the actual and feared selves, the more negative evaluation that is experienced, which then leads to increases in social anxiety and subsequently rumination.

To offer a possible explanation for these unexpected results, Carver et al. (1999) suggests that people's motives to either move toward their desired self (i.e., their ought self) or move away from their feared self, depends on the circumstances they encounter. For example, if a person believes they are close to their feared self, then distancing themselves from their feared self will be the primary motive while moving toward their ought self will become secondary. However, if they believe they have some distance from their feared self, then pursuing the ought self may become the primary motive. In the current study, participants were required to complete an online survey whereby they were asked to answer the questionnaires with reference to a general social situation. As such, they were not faced with an actual situation where their feared characteristics might be exposed. The absence of a tangible social threat in the current study (i.e., there was no impending social situation to instil an immediate sense of threat or fear in participants) may have allowed the participants to have some distance from their feared self. Therefore, escape motives related to the feared self may have been lessened allowing more room for the participant to focus on pursuing the ought self. This may explain why the actual-feared self-discrepancy did not influence fear of negative evaluation in the expected way whereas the actual-ought self-discrepancy did.

This study is not without its limitations. As described previously, although A. F. Hayes (2013) states that the method of testing the sequential models used in the current study assumes a specified direction (i.e., one variable causing the other in sequence), the cross-sectional design means that it is impossible to conclude casual relationships between the variables. The study design was chosen as a means of making a first attempt at testing the proposed models before moving onto more stringent methodology. Thus, the current study gives a good ground-level understanding of the variables and how they may relate to one another. In addition, although the selves questionnaire used in this study has demonstrated good reliability and validity in studies conducted by those who developed the measure (e.g., Higgins et al., 1985; Scott & O'Hara, 1993; Strauman, 1989; Strauman & Higgins, 1988), other studies conducted by independent researchers have contested the validity of this measure (e.g., Tangney et al., 1998). However, current study used Carver et al.'s (1999) adapted version of the original selves questionnaire which had demonstrated good reliability in Carver et al.'s study, deeming it appropriate for use. Supporting this, the adapted version of the selves questionnaire also demonstrated good reliability in the current study.

The results provide important preliminary empirical support for the potential contributing role of actual-ought self-discrepancy to both fear of negative and fear of positive evaluation, and rumination in social anxiety. Based on these results, it is likely that compared to the actual-feared self-discrepancy, the actual-ought self-discrepancy is more important to consider in social anxiety due to its contribution to fear of evaluation, social anxiety, and rumination. However, the impact of the situational context of the current study on the self-discrepancies needs to be considered. Therefore, it is necessary to further test the models within a socially

threatening situation, such as a speech task, to better understand and consolidate the

role of both self-discrepancies in fear of evaluation, social anxiety and rumination.

CHAPTER 3: Study 2

Chapter 2 introduced a proposed theoretical model incorporating self-discrepancies, fear of evaluation, social anxiety, and rumination, and investigated their relationships using online survey data. The results supported the sequential relationships of actual-ought self-discrepancy and rumination through both fear of evaluation (negative/positive), and trait social anxiety. In contrast, predictions were not supported regarding the sequential relationship of actual-feared self-discrepancy to rumination through both fear of negative evaluation and trait social anxiety. Given that situational factors such as the presence or absence of an immediate social threat may influence the accessibility of the ought and feared selves (Carver et al., 1999), the unexpected results regarding actual-feared self-discrepancy may be due to the absence of an immediate social threat in Study 1. Therefore, further investigation of the role of each self-discrepancy in social anxiety within a situational context involving an immediate social threat is needed. The present chapter aimed to extend findings from Study 1 and address its limitation of the cross-sectional design by investigating the proposed model within the context of a concrete social threat.

Studies have identified that public speaking is one of the most common anxiety provoking situations (e.g., Furmark, 2002; Ruscio et al., 2008). In addition, as suggested by Baumeister and colleagues (Baumeister & Leary, 1995; Baumeister & Tice, 1990), the greater the threat of evaluation that exists, the more anxiety provoking the social situation will be. Based on these suggestions, a class presentation (i.e., public speaking), which forms part of an assessment for a Bachelor Degree topic (i.e., obvious threat of evaluation) was chosen as the social task to further investigate the proposed models.

Study 2 Overview

The aim for Study 2 was to further examine the proposed model involving self-discrepancies, evaluation fears, social anxiety, and rumination within the context of a socially threatening situation. The absence of an immediate social threat in Study 1 may have allowed participants to better access their ought self than their feared self. Therefore, involving a social threatening situation such as public speaking should provide a better understanding of how each self-discrepancy (actual-ought and actual-feared) influences fear of evaluation, social anxiety and rumination. The current study used a class presentation and as such instead of the trait-based measures used in Study 1, state-based measures of self-discrepancies, fear of evaluation and social anxiety were utilised. Specifically, the actual-ought and actual-feared self-discrepancies involved characteristics related specifically to the class presentation, and fear of evaluation, social anxiety, and rumination were modified to be specific to the class presentation as well.

Hypotheses

It was hypothesised that actual-ought self-discrepancy related to the presentation would directly influence (1) fear of negative evaluation, (2) fear of positive evaluation, (3) state anxiety, and (4) rumination pertaining to the presentation. Further, it was predicted that actual-ought self-discrepancy would indirectly influence (1) state anxiety, and (2) rumination through its relationship with fear of both negative evaluation and positive evaluation (in separate models). Finally, actual-ought self-discrepancy was expected to show a relationship with rumination through both fear of negative evaluation/fear of positive evaluation and state anxiety, in sequence. As per Study 1, all predicted paths were expected to be positive.

Next, actual-feared self-discrepancy related to the presentation was predicted to directly influence (1) fear of negative evaluation, (2) state anxiety, and (3) rumination about the presentation. Indirectly, it was expected that actual-feared self-discrepancy would influence (1) state anxiety, and (2) rumination through its relationship with fear of negative evaluation. Finally, it was predicted that actual-feared self-discrepancy would influence rumination through its relationship with fear of negative evaluation and state anxiety, in sequence. As per Study 1, the relationships between actual-feared self-discrepancy and the other variables were predicted to be negative. All other relationships in this model where expected to be positive.

Method

Participants

Participants were first-year undergraduate students ($N = 64$) undertaking a topic as part of an education/teaching degree at Flinders University. Participants were aged between 18 and 45 ($M = 21.45$, $SD = 4.82$; 45 female).

As per Study 1, participants were asked whether they identified with a particular ethic group (yes/no), those who answered yes were asked to enter (free-text) the ethic group they identified. Three participants identified as belonging to an ethnic or cultural group. Based on the 'Australian Standard Classification of Cultural and Ethnic Groups' (Australian Bureau of Statistics, 2016), the participants responses were identifed as: Oceanian, $n = 2$; South-East Asian/Southern and Eastern European, $n = 1$. An in-class group presentation formed part of the assessment requirements for the education topic. Participation in the current study was completely voluntary (i.e., there was no impact on the topic grades for participation or non-participation in the current study). A small remuneration of $5

was rewarded to those who chose to participate. Enrolment in the topic and participation in the presentation as part of the topic assessment were the only criteria for participation. To increase the opportunity for participant involvement, data was collected over two consecutive years, hence two distinct enrolment groups were included in the study.

Measures

      Trait social anxiety and depression. The SPIN (Connor et al., 2000; Appendix D) and DASS$_{21}$-D (Lovibond & Lovibond, 1995; Appendix F) used in Study 1 were used to measure participant's trait social anxiety and depression. Reliability for the SPIN ($\alpha = .89$) and DASS$_{21}$-D ($\alpha = .92$) in this study were excellent.

      State self-discrepancies. The instructions of the modified version of the Selves Questionnaire (Carver et al., 1999; Higgins, 1987) used in Study 1 were modified further for the class presentation (see Appendix G). The ought and feared self guide descriptions were presented on separate pages, counterbalanced between participants. Participants were asked to list 7 characteristics that fit each description with specific reference to their class presentation, and rated each characteristic on the 7-point scale. They were then asked to rate (on the 7-point scale) the degree to which they believed they *actually* displayed (during their presentation) each of the characteristics they listed. Participants self-discrepancies were calculated as the difference between the average ought/feared self rating and the average actual self rating. Internal consistency in this study was good for the actual-ought self-discrepancy ($\alpha = .83$) and the actual-feared self-discrepancy ($\alpha = .89$).

      State fear of negative evaluation. The BFNE (Leary, 1983; Rodebaugh, Woods, et al., 2004; Weeks et al., 2005) used in Study 1 was adapted to be

specifically related to the class presentation (Appendix H). For example, an original item on the BFNE '*I am afraid that others will not approve of me*' was adapted to '*I was afraid that the audience would not approve of my presentation*'. Participants were asked to rate how much it reflected their feelings during their class presentation using the standard 5-point rating scale for this measure (1: not at all; 5: extremely). Internal consistency in this study was excellent ($\alpha = .93$).

State fear of positive evaluation. The FPES (Weeks, Heimberg, & Rodebaugh, 2008) used in Study 1 was also adapted to be specifically related to the class presentation. For example, the item '*I am uncomfortable exhibiting my talents to others, even if I think my talents will impress them*' was adapted to '*I was uncomfortable exhibiting my talents during my presentation, even though I thought my talents would impress the audience*' (Appendix I). Participants were asked to rate how much it reflected their feelings during their presentation using the 10-point rating scale for this measure (0: not at all true; 9: very true). Internal consistency in this study was good ($\alpha = .86$).

State anxiety. The State Anxiety Rating (SAR; Rapee & Abbott, 2007) is a 10-item measure designed to assess state anxiety specifically related to a speech (Appendix J). To make the measure more task-specific, the SAR was modified slightly to replace '*speech*' with '*class presentation*'. The SAR was measured on a 5-point rating scale from 0 (not at all) to 4 (extremely) with participants indicating how they felt during the delivery of their speech. A total state anxiety score was achieved by summing all items on the SAR, with higher scores representing higher state anxiety experienced during the class presentation. Rapee and Abbott (2007) reported excellent reliability for this scale ($\alpha = .96$). The internal consistency in this study was good ($\alpha = .86$).

Rumination. The Thoughts Questionnaire (TQ; Abbott & Rapee, 2004; Edwards, Rapee, & Franklin, 2003) is a measure of both positive and negative rumination specifically related to a speech task. The TQ contains 24 items (15 negative; 9 positive) related to various aspects of an oral presentation. Previous research has shown that social anxiety is related to negative rumination, but not positive rumination (Abbott & Rapee, 2004). Therefore, in the interests of reducing demands on participants, only the negative rumination items were used in the present study. Again, subtle modifications were made to the measure by replacing '*speech*' with '*class presentation*' (Appendix K). Participants rated how often they thought about the various, negative aspects of their class presentation using a 5-point rating scale (0: never; 4: very often). A total score was calculated with higher scores representing greater negative rumination about the class presentation. Reliability of the negative subscale in previous studies is excellent ($\alpha = .94$; Abbott & Rapee, 2004). Internal consistency in this study was also excellent ($\alpha = .91$).

Procedure

Two weeks prior to the class presentations commencing, students from each tutorial class for the topic were introduced to the study (in-class) and given the opportunity to sign-up for participation. As presentations occurred across several weeks, when signing up for the study the participants also indicated the date they were presenting. An email containing a link to an online survey was sent one week prior to each individual's presentation date, for the participant to complete within the week leading up to their presentation. Completion time was, on average, 4.10 days prior to the presentation. The online survey included demographic questions, and the measures of trait social anxiety, depression, and the ought and feared self related to the presentation. To control for how much preparation and practice the participants

had engaged in prior to their class presentation, two additional questions '*how much time have you spent preparing for your class presentation*' ($M_{hours} = 15.04$, $SD = 24.56$) and '*how much time have you spent practicing your class presentation*' ($M_{hours} = 2.67$, $SD = 2.49$) were included in the online survey.

The allocated presentation time was 30 minutes in the first year of data collection and 50 minutes in the second year. This difference was due to a change in topic co-ordinator who amended the length of the presentation. Across both years, presentations were performed in groups of four to five with each group member being allocated a few minutes to speak individually. The groups performed their presentations in front of their classmates (~20 per class), the tutor for the class, and the researcher. The tutor of the class, and the classmates were involved in evaluating the presentations. In-class, immediately following their presentation, participants were given time to complete the post-speech measures which included their actual selves (ought/feared), fear of negative evaluation, fear of positive evaluation and state anxiety. The individual ought and feared self characteristics listed by each participant during the online survey were copied onto the actual self measures so the participants were rating their own characteristics. At the end of the class, participants were given instructions both verbally and in writing regarding the rumination questionnaire to be completed 24 hours after their class. After each presentation was completed, an email was sent with another online survey link containing the rumination questionnaire. The email re-iterated the instructions that required the participants to complete the rumination questionnaire in 24-hours from the completion of their class presentation. All participants returned the rumination questionnaire, however completion time varied from 9.90 to 196.47 hours ($M_{hours} = 43.33$, $SD = 30.19$).

The presentations were evaluated by both the tutors of the classes and peers who attended the class. Written feedback was provided by peers and collected by the tutor after the class. Grades were based on the peer feedback, in conjunction with the tutor's evaluation of the presentation. Tutors and peers were asked not to give any feedback until after the rumination questionnaire had been received by the researcher. Hence, the formal grades and written peer feedback were not given to these participants until the week after the class presentation was completed.

Statistical Analysis

Missing Values Analysis was conducted, identifying 23 individual item scores Missing Completely at Random (MCAR). When there is only a small amount of data missing and they are MCAR (as determined by Little's MCAR Test), it is considered appropriate to use single-imputation methods such as Expectation-Maximisation (EM) imputation (Tabachnick & Fidell, 2014). As such, EM imputation was utilised to replace these missing data. As per Study 1, means, standard deviations, and bootstrap partial correlations were calculated using IBM SPSS Statistics version 23. The mediation models were examined with PROCESS Models 4 and 6, using the same procedure as Study 1.

Results

Age, Sex and Recruitment Group Differences

Age, sex and recruitment group differences were examined using Bivariate correlations and Independent samples t tests. No significant relationships were found between age and any variable included in the models. Regarding sex, differences emerged on fear of positive evaluation whereby females ($M = 20.07$, $SD = 15.30$) had significantly higher scores than males ($M = 11.89$, $SD = 9.75$; $t(62) = -2.15$, $p = .036$). Sex differences on the actual-ought self-discrepancy ($t(62) = -1.94$, $p = .057$),

and state anxiety ($t(50.59) = -1.99$, $p = .052$) also approached significance, as such sex was controlled for in subsequent analyses. No significant difference between the two recruitment years (i.e., due to difference in presentation times) was found on any variable, therefore the two groups were pooled together.

Descriptive Statistics

Table 3.1 displays means, standard deviations, and partial correlation matrix of all variables (controlling for sex, practice and preparation times, and time taken to complete rumination questionnaire). Although actual-ought and actual-feared self-discrepancies were correlated with trait social anxiety, neither self-discrepancy showed a significant correlation with any other variables. All remaining correlations involving trait social anxiety were significant. Fear of negative evaluation was significantly correlated with fear of positive evaluation, both of which were significantly correlated with state anxiety and rumination. There was also a significant correlation between state anxiety and rumination.

Table 3.1

Descriptive Statistics and Partial Correlation Matrix of Variables included in the Models, Controlling for Sex, Practice and

Preparation Times, and Rumination Completion Time

Variables	M	SD	1	2	3	4	5	6	7
1. Ought SD	1.24	1.30	-						
2. Feared SD	1.33	1.63	-.03	-					
3. FNE	21.59	8.01	.15	.22	-				
4. FPE	17.64	14.31	.05	.23	.49*	-			
5. State Anxiety	9.81	6.99	.11	-.08	.66*	.46*	-		
6. Rumination	14.78	9.90	.16	.12	.62*	.49*	.75*	-	
7. Trait Social Anxiety	15.95	10.52	.26*	.44*	.25*	.38*	.30*	.50*	-
8. Depression	4.77	4.87	.06	.07	.30	.31*	.27*	.41*	.34*

Note. $N = 64$. Ought SD = actual-ought self-discrepancy; Feared SD = actual-feared self-discrepancy; FNE = fear of negative

evaluation; FPE = fear of positive evaluation; 10,000 bootstrap samples.

*Significant as bootstrap 95% CI did not span zero.

Actual-Ought Self-Discrepancy Model Testing

Table 3.2 and 3.3 and Figures 3.1 and 3.2 present the results of the model testing for the actual-ought self-discrepancy, controlling for the covariates. Fear of negative evaluation was directly related to state anxiety, and state anxiety was directly related to rumination. The indirect effect of fear of negative evaluation to rumination through state anxiety was significant. In a similar fashion, fear of positive evaluation was related directly to state anxiety which in turn was directly related to rumination. The indirect effect between fear of positive evaluation and rumination through state anxiety was also significant. However, no other direct or indirect effects were found.

Table 3.2

Direct and Indirect Effects of Actual-Ought Self-Discrepancy on Fear of Negative Evaluation, State Anxiety and Rumination,

Controlling for Sex, Preparation and Practice Times, Rumination Completion Time, Depression, and Actual-Feared Self-Discrepancy

Predictor variable	Dependent variable	*B*	*SE*	BC 95% CI	
				Lower	Upper
SD	FNE	.79	.75	-.71	2.28
SD	SA	-.03	.55	-1.12	1.07
SD	RUM	.58	.69	-.80	1.95
FNE	SA	.65	.10	.45	.85
FNE	RUM	.14	.17	-.20	.48
SA	RUM	.93	.18	.57	1.28
Total effect		1.13	1.00	-.87	3.14
Indirect effects					
SD→FNE→SA		.51	.64	-.57	2.02
SD→FNE→RUM		.11	.29	-.15	1.20
SD→SA→RUM		-.03	.71	-1.72	1.14

FNE→SA→RUM	.60	.14	.34	.91
SD→FNE→SA→RUM[7]	.47	.61	-.43	2.13

Note. $N = 60$. BC = bias-corrected; CI = confidence interval; SD = actual-ought self-discrepancy; FNE = fear of negative evaluation; SA = state anxiety; RUM = rumination. 10,000 bootstrap samples.

Figure 3.1. The final model for the role of actual-ought self-discrepancy on fear of negative evaluation, state anxiety, and rumination.

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[7]Actual-ought self-discrepancy → fear of negative evaluation → state anxiety → rumination, without depression controlled: $B = .57$, $SE = .64$, 95% CI [-.37, 3 9]. This model demonstrated a similar effect size and trend as the model that included depression as a control variable.

Table 3.3

Direct and Indirect Effects of Actual-Ought Self-Discrepancy on Fear of Positive Evaluation, State Anxiety and Rumination,

Controlling for Sex, Preparation and Practice Times, Rumination Completion Time, Depression, and Actual-Feared Self-Discrepancy

Predictor variable	Dependent variable	B	SE	BC 95% CI	
				Lower	Upper
SD	FPE	.36	1.30	-2.24	2.96
SD	SA	.39	.65	-.91	1.69
SD	RUM	.64	.68	-.73	2.01
FPE	SA	.25	.07	.11	.39
FPE	RUM	.07	.08	-.09	.23
SA	RUM	.97	.15	.67	1.26
Total effect		1.13	1.00	-.87	3.14
Indirect effects					
SD→FPE→SA		.09	.45	-.79	1.09
SD→FPE→RUM		.03	.20	-.23	.68
SD→SA→RUM		.38	.89	-1.39	2.05

FPE→SA→RUM	.25	.09	.10	.47
SD→FPE→SA→RUM[8]	.09	.44	-.68	1.19

Note. $N = 60$. BC = bias-corrected; CI = confidence interval; SD = actual-ought self-discrepancy; FPE = fear of positive evaluation; SA = trait social anxiety; RUM = rumination. 10,000 bootstrap samples.
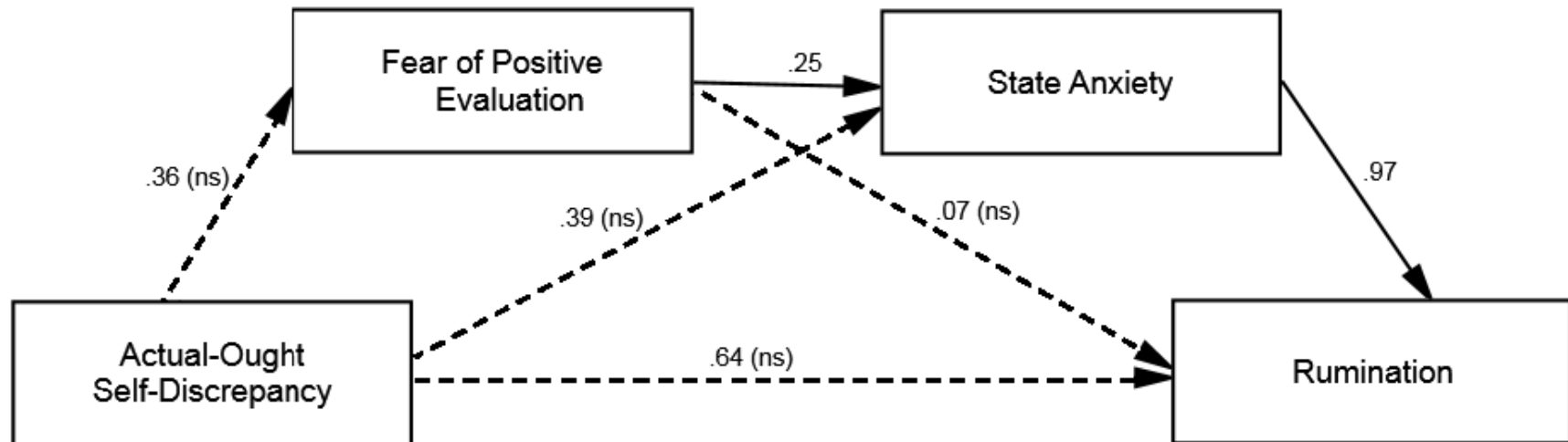
Figure 3.2. The final model for the role of actual-ought self-discrepancy on fear of positive evaluation, state anxiety, and rumination.

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[8]Actual-ought self-discrepancy → fear of positive evaluation → state anxiety → rumination, without depression controlled: $B = .15$, $SE = .46$, 95% CI [-.60, 1.36]. This model demonstrated a similar effect size and trend as the model that included depression as a control variable.

Actual-Feared Self-Discrepancy Model Testing

Table 3.4 and Figure 3.3 display the results of the model containing actual-feared self-discrepancy. As expected, actual-feared self-discrepancy was directly and negatively related to state anxiety but was not related to either fear of negative evaluation or rumination. Fear of negative evaluation was related to state anxiety, which was related to rumination. Fear of negative evaluation did not directly influence rumination. Indirectly, actual-feared self-discrepancy influenced rumination through state anxiety. Further, fear of negative evaluation was related to rumination through state anxiety. No other significant indirect effects emerged.

Table 3.4

Direct and Indirect Effects of Actual-Feared Self-Discrepancy on Fear of Negative Evaluation, State Anxiety and Rumination,

Controlling for Sex, Preparation and Practice Times, Rumination Completion Time, Depression, and Actual-Ought Self-Discrepancy

Predictor variable	Dependent variable	*B*	*SE*	BC 95% CI	
				Lower	Upper
SD	FNE	.99	.63	-.28	2.27
SD	SA	-1.10	.47	-2.05	-.16
SD	RUM	.96	.62	-.29	2.21
FNE	SA	.65	.10	.45	.85
FNE	RUM	.14	.17	-.20	.48
SA	RUM	.93	.18	.57	1.28
Total effect		.67	.85	-1.04	2.37
Indirect effects					
SD→FNE→SA		.64	.46	-.20	1.63
SD→FNE→RUM		.14	.27	-.17	.94
SD→SA→RUM		-1.03	.60	-2.45	-.07

FNE→SA→RUM	.50	.13	.29	.82
SD→FNE→SA→RUM[9]	.60	.46	-.08	1.80

Note. $N = 60$. BC = bias-corrected; CI = confidence interval; SD = actual-feared self-discrepancy; FNE = fear of negative evaluation; SA = trait social anxiety; RUM = rumination. 10,000 bootstrap samples.
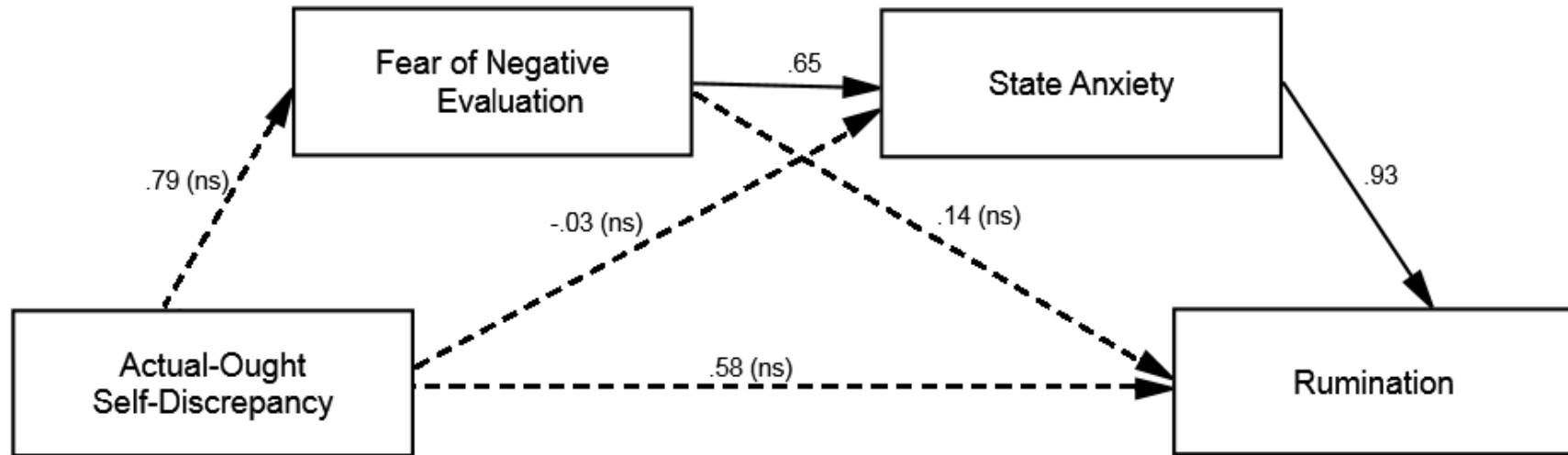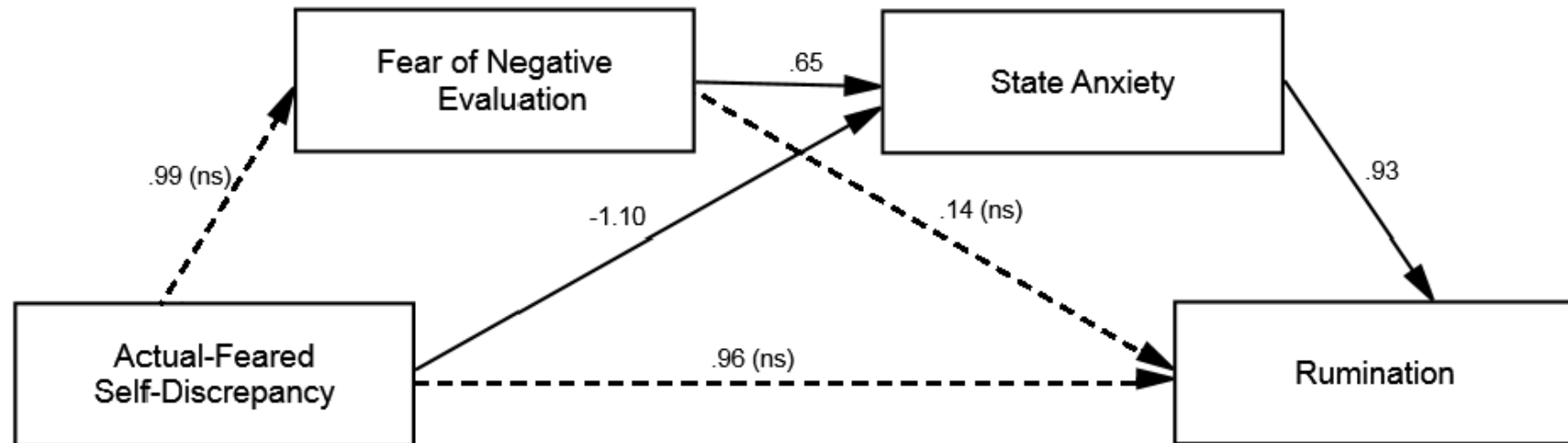

Figure 3.3. The final model for the role of actual-feared self-discrepancy on fear of negative evaluation, state anxiety, and rumination.

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[9]Actual-feared self-discrepancy → fear of negative evaluation → state anxiety → rumination, without depression controlled: $B = .71$, $SE = .53$, 95% CI [-.12, 1.99]. This model demonstrated a similar effect size and trend as the model that included depression as a control variable.

Discussion

The main limitations of Study 1 were that 1) causal relationships between self-discrepancies, fears of evaluation, social anxiety, and rumination could not be concluded due to the cross-sectional design, and 2) the use of a broad context of social situations rather than a specific social situation (e.g., a presentation), may have impacted the results for the actual-feared self-discrepancy. The arguments put forth by Cole and Maxwell (2003), Maxwell and Cole (2007), and Maxwell et al. (2011) with regard to mediation using cross-sectional study designs resulted in recommendations for researchers to collect data in a fashion that allows time to elapse between the theoretical cause and its anticipated effect. In line with these recommendations, the current study aimed to address the limitations of Study 1 through the examination of the proposed model in the context of a specific social situation, using a sequential design that better allowed causal conclusions to be drawn. However, it is important to note that fear of evaluation and state anxiety were still measured simultaneously. As such, as per purely cross-sectional designs, any causal attributions still need to be interpreted with caution. In addition, in a more recent study Mitchell and Maxwell (2013) extended their previous work on mediation in cross-sectional designs by investigating whether sequential designs were an improvement to the purely cross-sectional designs. The authors concluded that biased results are still likely to be found in sequential designs. As such, this approach is not necessarily superior to the purely cross-sectional approach, for full mediation. It does however, have an advantage over cross-sectional designs for partial mediation where the direction of the bias is more predictable than cross-sectional designs. Accordingly, although the current results based on the sequential design may provide partial evidence for the mediation relationships, it is difficult to

draw a solid conclusion about the results due to the potential bias associated with sequential designs.

First, it was expected that Study 2 would achieve similar results as Study 1 regarding the two actual-ought self-discrepancy models. These findings would have consolidated the relationships proposed in the models and deepened the understanding of the role of the actual-ought self-discrepancy in social anxiety. However, contrary to predictions, when controlling for actual-feared self-discrepancy, depression, and the other covariates, no direct effects were found between actual-ought self-discrepancy and fear of evaluation (negative/positive), state anxiety, or rumination. Strauman and Higgins (1988) demonstrated a relationship between actual-ought self-discrepancy and fear of negative evaluation. However, findings from the current study are in line with other authors who have debated whether a unique relationship between actual-ought self-discrepancy and social anxiety exists after considering depression (e.g., Rodebaugh & Donahue, 2007; Weilage & Hope, 1999). Regarding rumination, the non-significant relationship between actual-ought self-discrepancy and rumination from this study is in line with Study 1, which consolidates the possibility that actual-ought self-discrepancy may not directly influence rumination in social anxiety.

It was also expected in the current study that the introduction of a tangible social threat would reveal the predicted results for the actual-feared self-discrepancy model. However, actual-feared self-discrepancy was not directly related to fear of negative evaluation or rumination. To date, little was known about the relationship between actual-feared self-discrepancy and fear of negative evaluation although it was proposed by some researchers (e.g., Moscovitch, 2009). The unsupported results from this study question this relationship and requires further investigation to

achieve a more consolidated conclusion. On the other hand, as expected, when controlling for the actual-ought self-discrepancy, depression, and the other covariates, the actual-feared self-discrepancy was negatively related to state anxiety. This result suggests that the closer a person perceived themselves to be to their feared self (i.e., the lower the actual-feared self-discrepancy), the more state anxiety about the presentation that was experienced. This further supports Carver et al.'s (1999) findings that when controlling for the actual-ought self-discrepancy the actual-feared self-discrepancy does indeed predict anxiety. The indirect effects that actual-feared self-discrepancy was related to rumination through state anxiety, again is in line with Carver et al. (1999), and suggests the importance of state anxiety in the relationship between the actual-feared self-discrepancy and rumination.

In Study 1 where no immediate social threat existed, the actual-ought self-discrepancy showed the expected effect, whereas the actual-feared self-discrepancy did not. Based on Carver et al. (1999), when faced with a threatening situation, a person's primary concern becomes the actual-feared self-discrepancy, and the actual-ought self-discrepancy becomes a secondary concern. As such, the current study included an immediate social threat to test the proposed models. The absence of a relationship between actual-ought self-discrepancy and state anxiety, and the relationship between actual-feared self-discrepancy and state anxiety in the current study is in line with the suggestions by Carver et al. (1999). However, the lack of relationship between the actual-feared self-discrepancy and fear of negative evaluation was unexpected, given that negative evaluation is expected if one perceives themselves to act in a way that that will be scrutinised (American Psychiatric Association, 2013; Moscovitch, 2009). Overall, the non-supported relationship between self-discrepancy and fear of evaluation questions the relevant

role of self-discrepancies to fear of evaluation in the context of a presentation and require further investigation.

Across all models, fear of evaluation was directly related to state anxiety which is in line with the previous research demonstrating the robustness of the relationship between fear of negative evaluation (e.g., Coles et al., 2001; Horley et al., 2004; Mansell & Clark, 1999), and fear of positive evaluation (Fergus et al., 2009; Weeks et al., 2012) and social anxiety, respectively. Of interest however, females scored significantly higher on fear of positive evaluation than males. This finding is in contrast with both existing literature (e.g., Weeks, Heimberg, Rodebaugh, & Norton, 2008), and Study 1 where no differences have been found. The inconsistency could be due to the adaptation of the trait-based fear of positive evaluation measure used in study 1 (and previous studies), to a state-based measure in Study 2. Trait-fear of positive evaluation would represent a longer-lasting and temporally stable phenomenon, whereas state-fear of positive evaluation would represent a short-term change in an individuals' evaluation fears. Adapting a measure designed to capture a trait into a measure to capture a state affect, runs the risk of insufficiently capturing the desired phenomenon, or changing how it is captured. In the current study, due to the lack of a measure to suitably assess the state fear of positive evaluation, the trait measure was adapted to suit the study design. This may have resulted in females scoring higher scores on fear of positive evaluation than males, which was not shown in Study 1, or in previous studies (e.g., Weeks, Heimberg, Rodebaugh, & Norton, 2008). However, as this is the first study to measure state-based fear of positive evaluation further examination is required.

However, only state anxiety was directly related to rumination, rather than either fear of evaluation. This result is inconsistent with previous studies that have

demonstrated that fear of negative evaluation is related to rumination (Fehm et al.,
2007; Zou & Abbott, 2012). However, the unique study procedure (i.e., class
presentation) may explain this inconsistency. Together with the unexpected
relationship between fear of positive evaluation and rumination, these results should
be interpreted with caution. However, across all three models, fear of evaluation was
indirectly related to rumination through state anxiety, which consolidates the fact
that fear of evaluation impacts on rumination via state anxiety. Finally, there was no
support for the sequential relationship from self-discrepancy to rumination through
fear of evaluation and state anxiety in the current study for any of the three proposed
models.

The lack of results may best be explained within the context of the
limitations of the current study. An oral presentation is a common anxiety provoking
situation and is a widely-used manipulation to induce anxiety in this field of study
(Chen, Rapee, & Abbott, 2013; Penney & Abbott, 2015; Rapee & Abbott, 2007).
However, according to the anecdotal feedback from participants, due to the nature of
an education/teaching degree the participants in this study have an increased
exposure to presentations of this type. Specifically, they regularly practice
presenting in front of their peers to gain experience for their future profession as a
school teacher. As is well known from the literature, exposure to a feared stimulus
can challenge fear related cognitions, reducing social anxiety (Foa & Kozak, 1986).
Given that this was a Semester 2 university topic with presentations administered
toward the end of the academic year, participants may already have undergone
numerous presentations prior to their participation in the current study. This may, in
part, account for the lack of a relationship between self-discrepancies and fear of
evaluation, as the students may have already had sufficient opportunities to

challenge their fear and adjust their self-discrepancies. A class presentation was chosen as it contains obvious evaluation by others that is likely to be important for participants (i.e., forms part of university grades), which was expected to produce higher anxiety in participants (e.g., Baumeister & Leary, 1995; Baumeister & Tice, 1990). However, given the exposure to presenting, the sample was perhaps not representative of the wider population with relation to common public speaking fears (Ruscio et al., 2008), which may contribute to the results found.

Furthermore, the presentation was performed in groups of four to five people. Social psychology literature explains a concept called 'responsibility attribution' whereby those who fail at a task when part of a group attribute less responsibility to themselves than those who fail at a task as an individual (Mynatt & Sherman, 1975). Therefore, it could be that presenting as part of a group rather than individually may lessen the fear of evaluation and/or state anxiety experienced during the oral presentation, due a reduction in individual responsibility for the outcome (i.e., the grade). For example, a person who is presenting individually will carry the full responsibility of the success/non-success of the presentation, however when presenting as part of a group, the responsibility for the success/non-success of the presentation is shared amongst the group. The feedback about the presentation (i.e., the evaluation), was given to the group rather than individually which perhaps means that participants felt less responsible for the outcomes of the presentation and as such did not feel as fearful about the evaluation as would be expected. The sex differences found in the state measure for Fear of Positive Evaluation, which was adapted from the trait Fear of Positive Evaluation Scale also needs further examination to determine whether this captures the construct validity of the trait based measure.

Additionally, due to the nature of the requirement for the topic assessment, completion of the presentation was accompanied with feedback from both the tutors and peers. For the purpose of the research, tutors and peers were requested not to provide feedback to the participants until the participants completed the rumination questionnaire, 24 hours after the presentation. However, although formal feedback was not given until one week after the presentation was completed, it was difficult to control any casual feedback from the peers following the presentation, which may have affected rumination.

Taken together, the applicability of the sample used in this study and the potential diffusion of responsibility for the presentation outcomes that potentially accompanied the group presentation raised questions to be further investigated. Given these limitations and their potential impacts on the unexpected results, it is necessary to undertake a final investigation of the model using a more stringent methodology with a general sample and individual presentations in a controlled laboratory setting. Doing so will control the influence of the potential confounds mentioned, which will allow for more consolidated conclusions about the proposed models.

CHAPTER 4: Study 3

Chapter 3 investigated the proposed model within the context of a social

situation that included an obvious evaluative threat (i.e., a class presentation to be

assessed as part of the participants degree). Significant results were found for the

direct path between actual-feared self-discrepancy and state anxiety, and the indirect

path from actual-feared self-discrepancy to rumination through state anxiety.

However, no other significant results involving actual-ought or actual-feared self-

discrepancy were found. Further, in contrast to predictions, no support was found for

the predicted sequential models from self-discrepancies to fear of evaluation, social

anxiety, and rumination. As discussed in Chapter 3, there were several

methodological limitations that may explain the lack of expected results. These

include 1) repeated exposure to the presentation situation as part of the degree

requirements that may potentially influence the participants' cognition and levels of

state anxiety, 2) performance of the class presentations in a group rather than

individually, and 3) possible informal peer feedback given to participants prior to

them completing the rumination questionnaire. Given that these potential confounds

may have contributed to the unsupported results, Chapter 4 aimed to address these

issues by conducting a further investigation of the models using a stricter

methodology.

Study 3 Overview

The aim of the current study was to further examine the proposed model

involving self-discrepancies, evaluation fears, social anxiety, and rumination within

the context of a socially threatening situation. To address the potential

methodological issues identified in Chapter 3, the current study provided a

controlled setting using an individual speech task to draw more solid conclusions

about the proposed model. An individual speech task performed to a video camera within a controlled laboratory setting is commonly used in research investigating social anxiety (Chen et al., 2013; Rapee & Abbott, 2007). The speech task is designed to provoke anxiety based on the premise that public speaking is a common anxiety-provoking situation (Ruscio et al., 2008), and the video camera recording is designed to induce concerns about evaluation by others. Therefore, the current study adopted this approach and investigated the proposed model in a laboratory setting. Like Chapter 3, state-based measures of self-discrepancies, fear of evaluation, social anxiety, and rumination relating to the individual speech task were administered, with the instructions and item wording modified specifically for the speech task.

Hypotheses

It was expected that actual-ought self-discrepancy related to the speech task would directly influence (1) fear of negative evaluation, (2) fear of positive evaluation, (3) state anxiety, and (4) rumination about the speech. Further it was predicted that actual-ought self-discrepancy would indirectly influence (1) state anxiety, and (2) rumination through its relationships with fear of negative evaluation and fear of positive evaluation (separately). Finally, actual-ought self-discrepancy was expected to be related to rumination through both fear of negative evaluation/fear of positive evaluation and state anxiety, in sequence. All predicted paths related to the actual-ought self-discrepancy models were expected to be positive.

Actual-feared self-discrepancy related to the speech task was predicted to directly influence (1) fear of negative evaluation, (2) state anxiety, and (3) rumination about the speech. Indirectly, actual-feared self-discrepancy was expected to influence (1) state anxiety, and (2) rumination through its relationship with fear of

negative evaluation. Finally, it was predicted that actual-feared self-discrepancy would influence rumination through its relationship with fear of negative evaluation and state anxiety, in sequence. Similar to the previous chapters, the relationships between this actual-feared self-discrepancy and the other variables were predicted to be negative. All other relationships in this model where expected to be positive.

Method

Participants

Participants were 103 students from Flinders University (first year undergraduate psychology students and students from the wider university population) aged between 18 and 52 ($M = 22.53$, $SD = 6.62$; 80 female). As per Study 1 and 2, participants were asked whether they identified with a particular ethic group (yes/no), those who answered yes were asked to enter (free-text) the ethic group they identified with. Forty-five participants identified as belonging to a particular ethnic or cultural group. Based on the 'Australian Standard Classification of Cultural and Ethnic Groups' (Australian Bureau of Statistics, 2016), the participants responses were identified as: North-East Asian, $n = 12$; South-East Asian, $n = 7$; Oceanian, $n = 6$; North-West European, $n = 4$; People of the Americas, $n = 4$; Southern and Central Asian, $n = 4$; North African and Middle Eastern, $n = 3$; Southern and Eastern European, $n = 3$; Sub-Saharan African, $n = 1$; No description, $n = 1$. With the exception of being 18 or over and fluent in English language, no exclusion criteria were applied. Participants received course credit ($n = 26$) or a small reimbursement ($n = 77$) for their participation. Ethics approval was granted from the Social and Behavioural Research Ethics Committee, Flinders University.

Measures

The same measures as Chapter 3 were used with subtle changes made to the wording of the instructions and items included in the self-discrepancies (Carver et al., 1999; Higgins, 1987; Appendix L), fear of negative evaluation (BFNE; Leary, 1983; Rodebaugh, Woods, et al., 2004; Weeks et al., 2005; Appendix M), fear of positive evaluation (FPES; Weeks, Heimberg, & Rodebaugh, 2008; Appendix N), state anxiety (SAR; Rapee & Abbott, 2007; Appendix O), and rumination (TQ; Abbott & Rapee, 2004; Edwards et al., 2003; Appendix P) measures, replacing '*class presentation*' with '*speech task*'. The SPIN (Connor et al., 2000; Appendix D) and $DASS_{21}$-D (Lovibond & Lovibond, 1995; Appendix F) were again used to measure trait social anxiety and depression. Reliability estimates in the current study were as follows: trait social anxiety, $\alpha = .91$; depression, $\alpha = .89$; actual-ought self-discrepancy, $\alpha = .69$; actual-feared self-discrepancy, $\alpha = .82$; fear of negative evaluation, $\alpha = .95$; fear of positive evaluation, $\alpha = .83$; state anxiety, $\alpha = .95$; and rumination, $\alpha = .94$.

Procedure

This study was run as an individual laboratory session. Upon arrival, participants were informed that they would be required to perform a three-minute speech to a video camera and that their recorded speech would be shown to an audience of three post-graduate students for objective evaluation. This manipulation was designed to elicit evaluation concerns and anxiety. Post-graduate students were chosen for the bogus audience as they have a perceived higher authority than undergraduate students due to their mentor roles for the undergraduate students, and it was reasonable for them to be involved in the evaluation. Although the speech was

recorded, the recording was deleted immediately after each session ended and therefore was shown to no-one.

Participants completed a questionnaire booklet consisting of demographic questions and the trait social anxiety and depression measures. Next, participants were given a list of 10 speech topics that they were required to choose one to deliver their speech on (university life, my hometown, my favourite book/film, my hobby, my first holiday, school experiences/memories, my first pet, environmental pollution, international tourism, tourist attractions in hometown). To control for familiarity with the speech topic, participants rated how familiar they were with the topic 0 (not at all familiar) to 10 (very much familiar; $M = 7.60$, $SD = 1.66$). Next, participants were presented with the ought and feared self descriptions (counterbalanced between participants) with specific reference to the speech task and were asked to list 7 characteristics that fit each description. Adopting the procedure from previous studies using a speech task (e.g., Rapee & Abbott, 2007), participants were allowed two minutes to mentally prepare for their speech before the recording was started. No note taking was permitted during this time. Following the preparation time, participants were asked to stand in front of the video camera to deliver their speech. Participants were encouraged to speak for the entire three minutes, or the longest duration they could within this time. Speech time ranged from 50 seconds to three minutes in length ($M_{seconds} = 170.95$; $SD = 22.78$). During the speech, the experimenter copied the ought and feared self characteristics into the actual self measure so that participants could rate their own characteristics after their speech.

Following the speech, participants completed the post-speech measures including the actual self for both the ought and feared self characteristics, fear of

negative evaluation, fear of positive evaluation, and state anxiety. After completion of these measures, participants were reminded about the rumination questionnaire to be completed 24-hours after the laboratory session ended. Approximately eight to 12 hours after their in-person session, an email was sent to participants which contained the rumination questionnaire link and instructions to complete the online rumination questionnaire in 24-hours from the completion time of the in-person session. If the participants did not complete the questionnaire in 24-hours, a reminder email was sent. All participants returned the rumination questionnaire, with completion time varying between 8.13 to 319.47 hours ($M_{hours} = 36.85$, $SD = 40.76$).

Statistical Analysis

Missing Values Analysis was conducted and Expectation-Maximization estimations were imputed for a total of 32 individual scores Missing Completely at Random (MCAR). When there is only a small amount of data missing and they are MCAR (as determined by Little's MCAR Test), it is considered appropriate to use single-imputation methods such as Expectation-Maximisation (EM) imputation (Tabachnick & Fidell, 2014). As such, EM imputation was utilised to replace these missing data. Means, standard deviations, and bootstrap partial correlations were conducted using IBM SPSS Statistics version 23. The mediation models were examined with PROCESS Models 4 and 6, using 10, 000 bootstrap samples. Statistical significance was inferred if the bootstrapped 95% confidence interval (CI) for the coefficient did not span zero.

Results

Age, Sex and Recruitment Group Differences

Independent samples *t* tests and Bivariate correlations were conducted to determine if any variables in the model differed based on age, sex, or recruitment

sample (i.e., individuals participating for course-credit or for monetary reimbursement), before undertaking the descriptive and mediation analyses. A significant, negative correlation was found between age and trait social anxiety, whereby higher social anxiety was related to lower age ($r = -.24$, $N = 103$, $p = .017$). A significant correlation was also found between age and depression, again with depression being higher in individuals of lower age ($r = -.21$, $N = 103$, $p = .034$). No other significant correlations were found between age and any variable. Regarding sex, there was no significant difference on any variable except for rumination. Females had significantly higher rumination scores ($M = 22.01$, $SD = 15.20$), than their male counterparts ($M = 15.96$, $SD = 9.87$; $t(55.06) = -2.27$, $p = .027$), indicating that females ruminated about their speeches more so than males did. There were no significant differences found on any variable between students participating for course-credit, and the students participating for monetary reimbursement, therefore the two samples were combined.

Descriptive Statistics

Table 4.1 displays means, standard deviations, and partial correlation matrix of all variables included in the model, trait social anxiety, and depression (controlling for the covariates of age, sex, familiarity with speech topic, and rumination completion time[10]). Actual-ought self-discrepancy was significantly correlated with fear of negative evaluation, state anxiety, rumination and trait social anxiety but was not related to fear of positive evaluation. Actual-feared self-discrepancy was significantly related to fear of negative evaluation, state anxiety, and rumination. No significant relationship was revealed between actual-feared self-

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[10]It should be noted that controlling for extraneous correlations does not prevent those variables from interacting with the variables of interest. However, it is common practice to enter a potential confound as a covariate in statistical analyses in order to control for any variance associated with such a confound (Field, 2013; Tabachnick & Fidell, 2014).

discrepancy and trait social anxiety. All other correlations between fear of negative/positive evaluation, state anxiety, rumination, and trait social anxiety were significant.

Table 4.1

Descriptive Statistics and Partial Correlation Matrix of Variables included in the Models, Controlling for Age, Sex, Familiarity with

Speech Topic, Rumination Completion Time

Variables	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
1. Ought SD	1.89	1.50	-						
2. Feared SD	.84	1.29	-.19	-					
3. FNE	23.17	8.84	.36*	-.32*	-				
4. FPE	28.53	14.85	.13	-.14	.66*	-			
5. State Anxiety	17.49	10.92	.45*	-.37*	.83*	.57*	-		
6. Rumination	20.66	14.36	.33*	-.29*	.61*	.37*	.68*	-	
7. Trait Social Anxiety	23.80	13.45	.30*	-.19	.66*	.49*	.67*	.52*	-
8. Depression	4.97	4.70	.13	-.05	.37*	.33*	.37*	.36*	.55*

Note. N = 103. Ought SD = actual-ought self-discrepancy; Feared SD = actual-feared self-discrepancy; FNE = fear of negative

evaluation; FPE = fear of positive evaluation; 10,000 bootstrap samples.

*Significant as bootstrap 95% CI did not span zero.

Actual-Ought Self-Discrepancy Model Testing

First, the model containing the actual-ought self-discrepancy and fear of negative evaluation was examined, controlling for age, sex, speech topic familiarity, rumination completion time, depression, and actual-feared self-discrepancy (see Table 4.2 and Figure 4.1). Actual-ought self-discrepancy directly influenced fear of negative evaluation and state anxiety, but did not directly influence rumination. Fear of negative evaluation directly influenced state anxiety, but not rumination. State anxiety directly influenced rumination. Mediation analyses revealed that actual-ought self-discrepancy indirectly influenced state anxiety through fear of negative evaluation, and rumination through state anxiety. The indirect effect of actual-ought self-discrepancy to rumination through fear of negative evaluation was not significant. Fear of negative evaluation was indirectly related to rumination through state anxiety. The sequential relationship between actual-ought self-discrepancy and rumination through both fear of negative evaluation and state anxiety was significant.

Second, the model containing actual-ought self-discrepancy and fear of positive evaluation was examined, controlling for the same covariates as the above model (see Table 4.3 and Figure 4.2). Actual-ought self-discrepancy directly influenced state anxiety, but was not directly related to either fear of positive evaluation or rumination. Fear of positive evaluation was directly related to state anxiety, but not rumination. State anxiety was directly related to rumination. The mediation models showed an indirect effect from actual-ought self-discrepancy to rumination through state anxiety, and an indirect effect from fear of positive evaluation to rumination through state anxiety. However, no significant indirect effects emerged for the relationships between actual-ought self-discrepancy and state

anxiety, or rumination, through fear of positive evaluation. The sequential

relationship between actual-ought self-discrepancy to rumination through both fear

of positive evaluation and state anxiety was not significant.

Post-hoc analyses were performed to investigate the relative strength of the

actual-ought self-discrepancy to state anxiety through both fear of negative

evaluation and fear of positive evaluation (where the two fears were operating in

parallel within the same model). This analysis was also conducted for the actual-

ought self-discrepancy to rumination relationship. Controlling for age, sex, speech

topic familiarity, rumination completion time, depression, and actual-feared self-

discrepancy, this analysis revealed that the relationship between actual-ought self-

discrepancy and state anxiety through fear of negative evaluation was significantly

stronger than through fear of positive evaluation[11], $B = 1.35$, $SE = .47$, 95% CI [.56,

2.38]. Likewise, the indirect effect of actual-ought self-discrepancy on rumination

through fear of negative evaluation was significantly stronger than this same

relationship through fear of positive evaluation[12], $B = 1.28$, $SE = .62$, 95% CI [.41,

2.80].

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[11]Actual-ought self-discrepancy → fear of negative evaluation → social anxiety: $B = 1.36$, $SE = .48$, 95% CI [.50, 2.38].
Actual-ought self-discrepancy → fear of positive evaluation → social anxiety: $B = .02$, $SE = .08$, 95% CI [-.08, .29].
[12]Actual-ought self-discrepancy → fear of negative evaluation → rumination $B = 1.27$, $SE = .57$, 95% CI [.42, 2.61].
Actual-ought self-discrepancy → fear of positive evaluation → rumination $B = -.01$, $SE = .13$, 95% CI [-.38, .18].

Table 4.2

Direct and Indirect Effects of Actual-Ought Self-Discrepancy on Fear of Negative Evaluation, State Anxiety and Rumination,

Controlling for Age, Sex, Speech Topic Familiarity, Rumination Completion Time, Depression, and Actual-Feared Self-Discrepancy

Predictor variable	Dependent variable	*B*	*SE*	BC 95% CI	
				Lower	Upper
SD	FNE	1.58	.52	.56	2.60
SD	SA	1.13	.40	.33	1.94
SD	RUM	.36	.77	-1.17	1.89
FNE	SA	.86	.08	.70	1.01
FNE	RUM	.22	.21	-.21	.64
SA	RUM	.62	.19	.25	1.00
Total effect		2.25	.83	.59	3.91
Indirect effects					
SD→FNE→SA		1.35	.44	.54	2.25
SD→FNE→RUM		.34	.48	-.42	1.55
SD→SA→RUM		.71	.43	.07	1.77

FNE→SA→RUM	.60	.21	.17	1.01
SD→FNE→SA→RUM[13]	.84	.43	.18	1.87

Note. *N* = 103. BC = bias-corrected; CI = confidence interval; SD = actual-ought self-discrepancy; FNE = fear of negative evaluation; SA = state anxiety; RUM = rumination. 10,000 bootstrap samples.
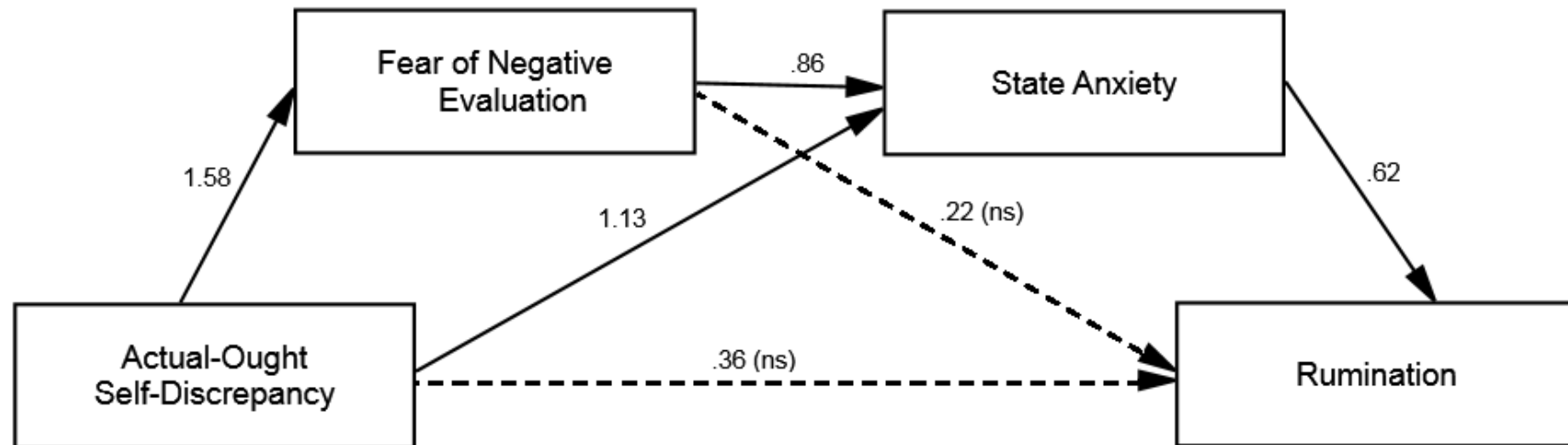
Figure 4.1. The final model for the role of actual-ought self-discrepancy on fear of negative evaluation, state anxiety, and rumination.

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[13]Actual-ought self-discrepancy → fear of negative evaluation → state anxiety → rumination, without depression controlled: *B* = 1.08, *SE* = .50, 95% CI [.31, 2.29]. This model demonstrated a similar effect size and trend as the model that included depression as a control variable.

Table 4.3

Direct and Indirect Effects of Actual-Ought Self-Discrepancy on Fear of Positive Evaluation, State Anxiety and Rumination,

Controlling Age, Sex, Speech Topic Familiarity, Rumination Completion Time, Depression, and Actual-Feared Self-Discrepancy

Predictor variable	Dependent variable	*B*	*SE*	BC 95% CI	
				Lower	Upper
SD	FPE	.62	.96	-1.28	2.52
SD	SA	2.29	.50	1.29	3.29
SD	RUM	.31	.79	-1.25	1.87
FPE	SA	.32	.05	.21	.42
FPE	RUM	-.02	.09	-.20	.15
SA	RUM	.79	.15	.50	1.08
Total effect		1.13	1.00	-.87	3.14
Indirect effects					
SD→FPE→SA		.19	.32	-.47	.82
SD→FPE→RUM		-.01	.12	-.39	.15
SD→SA→RUM		1.80	.61	.79	3.09

FPE→SA→RUM	.27	.07	.15	.42
SD→FPE→SA→RUM[14]	.15	.26	-.36	.69

Note. $N = 103$. BC = bias-corrected; CI = confidence interval; SD = actual-ought self-discrepancy; FPE = fear of positive evaluation; SA = state anxiety; RUM = rumination. 10,000 bootstrap samples.

Figure 4.2. The final model for the role of actual-ought self-discrepancy on fear of positive evaluation, state anxiety, and rumination.

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[14]Actual-ought self-discrepancy → fear of positive evaluation → state anxiety → rumination, without depression controlled: $B = .30$, $SE = .34$, 95% CI [-.33, 1.00] This model demonstrated a similar effect size and trend as the model that included depression as a control variable.

Actual-Feared Self-Discrepancy Model Testing

Lastly, the model containing actual-feared self-discrepancy was examined controlling for age, sex, speech topic familiarity, rumination completion time, depression, and actual-ought self-discrepancy (see Table 4.4 and Figure 4.3). Actual-feared self-discrepancy was directly and negatively related to fear of negative evaluation and state anxiety, but not rumination. Fear of negative evaluation was directly related to state anxiety, and state anxiety was directly related to rumination. No direct relationship between fear of negative evaluation and rumination was shown. As revealed in the mediation analyses, actual-feared self-discrepancy was indirectly related to state anxiety through fear of negative evaluation, and to rumination through state anxiety, but no significant indirect effect was found from actual-feared self-discrepancy to rumination through fear of negative evaluation. Fear of negative evaluation was indirectly related to rumination through state anxiety. The sequential mediation model from actual-feared self-discrepancy to rumination through both fear of negative evaluation and state anxiety was significant and negative.

Table 4.4

Direct and Indirect Effects of Actual-Feared Self-Discrepancy on Fear of Negative Evaluation, State Anxiety and Rumination,

Controlling for Age, Sex, Speech Topic Familiarity, Rumination Completion Time, Depression, and Actual-Ought Self-Discrepancy

Predictor variable	Dependent variable	*B*	*SE*	BC 95% CI	
				Lower	Upper
SD	FNE	-1.70	.60	-2.89	-.51
SD	SA	-.95	.47	-1.88	-.02
SD	RUM	-.60	.88	-2.34	1.14
FNE	SA	.86	.08	.70	1.01
FNE	RUM	.22	.21	-.21	.64
SA	RUM	.62	.19	.25	1.00
Total effect		-2.46	.97	-4.39	-.53
Indirect effects					
SD→FNE→SA		-1.45	.65	-2.75	-.17
SD→FNE→RUM		-.37	.50	-1.80	.33
SD→SA→RUM		-.59	.40	-1.61	-.02

FNE→SA→RUM	.59	.22	.16	1.01
SD→FNE→SA→RUM[15]	-.91	.58	-2.40	-.07

Note. $N = 103$. BC = bias-corrected; CI = confidence interval; SD = actual-feared self-discrepancy; FNE = fear of negative evaluation;

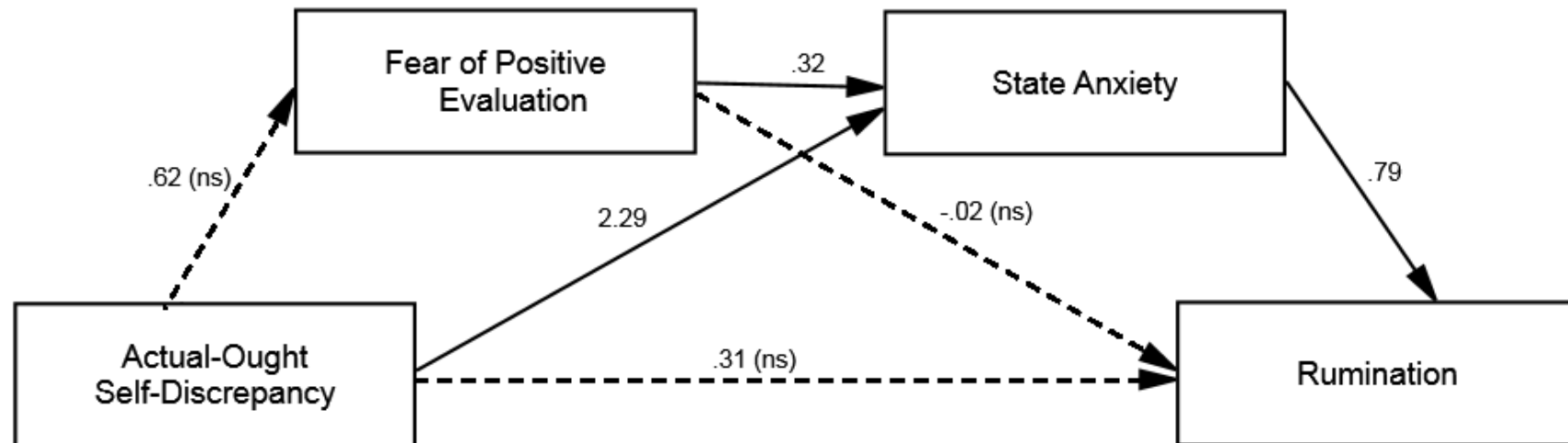SA = state anxiety; RUM = rumination. 10,000 bootstrap samples.
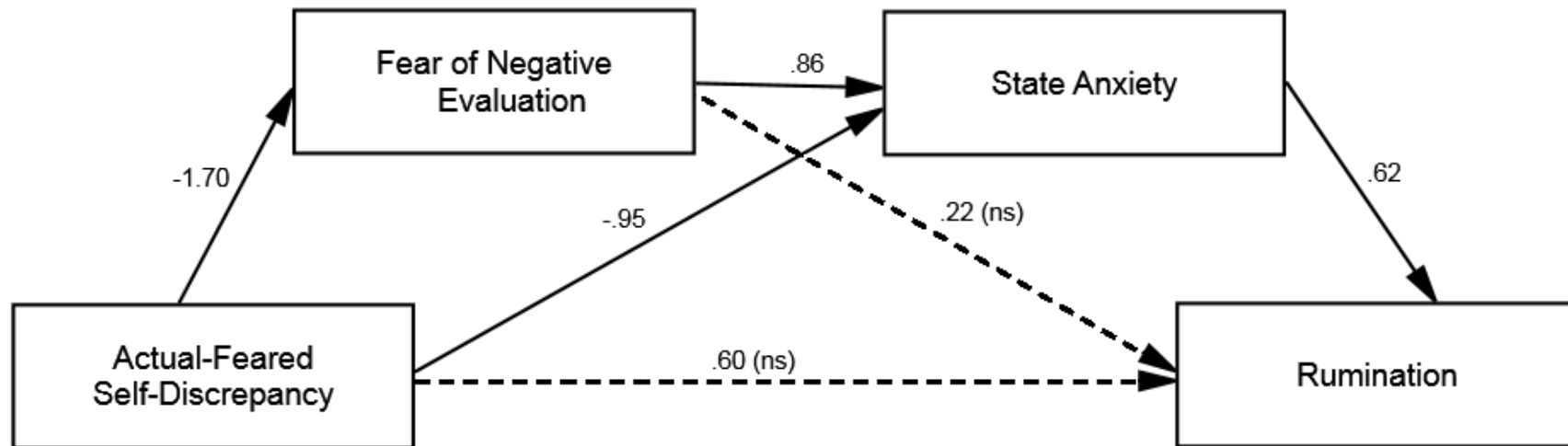
Figure 4.3. The final model for the role of actual-feared self-discrepancy on fear of negative evaluation, state anxiety, and rumination.

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[15] Actual-feared self-discrepancy → fear of negative evaluation → state anxiety → rumination, without depression controlled: *B* = -1.05, *SE* = ..60, 95% CI [-2.58, -.15]. This model demonstrated a similar effect size and trend as the model that included depression as a control variable.

Discussion

The present study aimed to investigate the proposed models using a controlled laboratory setting involving a social situation typically used in the literature, namely an impromptu speech. It was expected that testing the proposed model using improved methodology would allow more solid conclusions to be made regarding the results found in Study 1 and Study 2. However, as with Study 2, it is important to note that variables were again measured simultaneously, and as such any causal attributions should be interpreted with caution, given the potential bias associated with cross-sectional designs (Cole & Maxwell, 2003; Maxwell & Cole, 2007; Maxwell et al., 2011), and the arguments that have been made that sequential designs may not be superior to cross-sectional designs, at least for full mediation (Mitchell & Maxwell, 2013).

First, testing the model containing the actual-ought self-discrepancy and fear of negative evaluation revealed, as expected, that actual-ought self-discrepancy directly influenced fear of negative evaluation and state anxiety. This suggests that in the context of an individual speech task, the further away one is from their ought self, the more fear of negative evaluation and state anxiety about the speech that is experienced. The current study used an impromptu speech and a manipulation of evaluation fears (i.e., instructions that the speech was recorded and shown to an audience after the session) to increase the level of the participant's anxiety pertaining to the speech. Self-discrepancy was also assessed in relation to the speech task (i.e., participants listed characteristics that they felt they should have in the speech), making the measure more relevant to the speech task. Together with the fact that the current study controlled for both depression and the actual-feared self-discrepancy, the results support previous studies regarding the contribution of

actual-ought-self-discrepancy to fear of negative evaluation (Strauman & Higgins, 1988) and social anxiety (Johns & Peters, 2012; Strauman, 1989; Strauman & Higgins, 1988). In addition, the expected results such that fear of negative evaluation directly influenced state anxiety, and state anxiety was related to rumination, are consistent with previous studies demonstrating correlations between these constructs in speech and conversation tasks (Chen et al., 2013; Zou & Abbott, 2012).

Contrary to predictions, the lack of direct relationship between actual-ought-self-discrepancy and rumination suggests that holding a discrepancy between what one thinks they should be during a speech and what one thinks they are, does not directly lead to rumination about the speech. Despite Roelofs et al. (2007) finding that actual-ought self-discrepancy was related to depressive rumination, this relationship had not been investigated in social anxiety, specifically within a socially threatening task. Previous studies using a speech task have shown a relationship between self-appraisal of performance (i.e., how one actually thought they performed) is likely to predict rumination (Abbott & Rapee, 2004; Chen et al., 2013), however this appraisal was not in comparison to an ought self guide. The results from the current study inform the literature that the discrepancy between the actual and ought self may not lead to rumination in social anxiety directly.

Surprisingly, fear of negative evaluation related to the speech task also failed to show its direct impact on rumination. This is inconsistent with previous studies using either a speech task or an interaction task (e.g., a conversation), that have demonstrated that trait fear of negative evaluation or state threat appraisals (e.g., probability and cost of negative evaluation occurring) are related to, and a significant predictor of, rumination (Brozovich & Heimberg, 2011; Fehm et al., 2007; Zou & Abbott, 2012). The current study adapted the trait fear of negative

evaluation measure to a state measure. This may account for some of the differences between the current findings and previous studies. The results of this study suggest that neither actual-ought self-discrepancy nor fear of negative evaluation directly influences speech-related rumination. Instead, their effects on rumination may occur indirectly through state anxiety. The measurement used for rumination focusses on anxiety symptoms of the speech task (e.g., 'I looked nervous'). This may increase the possibility of rumination as a specific consequence of the anxious symptoms rather than the actual-ought self-discrepancy or fear of negative evaluation per se. Alternatively, it is also likely that in the context of a specific social task in the form of impromptu speech, state anxiety is indeed playing an important role in contributing to rumination, as demonstrated by previous studies showing a relationship between state anxiety and rumination relating to a speech task (Chen et al., 2013; Edwards et al., 2003; Perini, Abbott, & Rapee, 2006; Zou & Abbott, 2012). Nevertheless, the direct effects from the actual-ought self-discrepancy or fear of negative evaluation to state anxiety, suggest that these factors contribute to the state anxiety which is then the source of rumination.

As predicted, support was found for the key hypothesis relating to the sequential relationship between actual-ought self-discrepancy and rumination through both fear of negative evaluation and state anxiety. This result suggests that actual-ought self-discrepancy leads to an increase in fear of negative evaluation, which in turn elevates state anxiety and consequently rumination 24-hours after the completion of the speech task. This significant finding extends our understanding from Study 1 and informs the literature about how these variables work together in a specific social situation, suggesting the importance of actual-ought self-discrepancy in contributing to fear of negative evaluation, its subsequent social anxiety

symptomology, and relevant cognitive processing. Based on this result, actual-ought self-discrepancy may be considered as a target for interventions for social anxiety to achieve a decrease in fear of negative evaluation during a social situation and subsequent anxiety symptoms as well as the degree of rumination.

Second, examining the model containing actual-ought self-discrepancy and fear of positive evaluation revealed that actual-ought self-discrepancy directly influenced state anxiety as expected, which again supports the unique contribution of this self-discrepancy in social anxiety (Johns & Peters, 2012; Strauman, 1989; Strauman & Higgins, 1988). Yet, contrary to predictions, actual-ought self-discrepancy did not directly influence either fear of positive evaluation or rumination. Additionally, no significant indirect effects emerged for the relationships between actual-ought self-discrepancy and state anxiety or rumination through fear of positive evaluation.

The relationship between actual-ought self-discrepancy and fear of positive evaluation was proposed in line with Gilbert (2001) who suggested that positive evaluation may relate to increases in future social performance. For example, Alden, Taylor, Mellings, and Laposa (2008) revealed that socially anxious individuals may interpret social success as increased standards for future performance that they will fall short of. The unexpected result from this study may be explained by the study procedure. In the current study, participants were only asked to deliver one speech. As such, no future standard for a second speech task existed which may have potentially impacted the effects of the actual-ought self-discrepancy on fear of positive evaluation. Future research could investigate this relationship within the context of a repeat social situation (e.g., two speech tasks). Given this study is the first to investigate the relationship between the actual-ought self-discrepancy and the

fear of positive evaluation, findings from this study contribute to the literature by providing empirical evidence on these two important phenomena in social anxiety research. The lack of relationship between actual-ought self-discrepancy and rumination is consistent with the results in the model involving actual-ought self-discrepancy and fear of negative evaluation. Together with the significant indirect relationship from actual-ought self-discrepancy to rumination through state anxiety, these results again suggest the importance of state anxiety in rumination pertaining to the speech task.

In support of predictions and in line with previous research, fear of positive evaluation was directly related to state anxiety, and state anxiety directly influenced rumination. Weeks and Zoccola (2015) recently demonstrated a relationship between fear of positive evaluation and state anxiety related to a speech task, the current result is consistent with this finding, and supports the importance of fear of positive evaluations in social anxiety. Unexpectedly, fear of positive evaluation did not directly influence rumination but did so through state anxiety. This result is consistent with those from Study 1. The mediation of the relationship between fear of positive evaluation and rumination through state anxiety is consistent with the model involving fear of negative evaluation, again demonstrating the importance of state anxiety in the relationship between fear of evaluation and rumination. Given the lack of knowledge about the relationship between fear of positive evaluation and rumination, this finding contributes to the literature by providing evidence about the role of fear of positive evaluation in influencing rumination related to a speech task.

Unlike the model containing fear of negative evaluation, no support was found for the sequential relationship between actual-ought self-discrepancy to rumination through both fear of positive evaluation and state anxiety. This result

suggests that actual-ought self-discrepancy may be more important in influencing fear of negative evaluation than it is in influencing fear of positive evaluation. In fact, post-hoc analyses comparing the specific indirect effects from actual-ought self-discrepancy to state anxiety or rumination, through fear of negative evaluation and fear of positive evaluation, respectively, supported this assertion. The results demonstrated that when included in the same model, the pathway from actual-ought self-discrepancy to state anxiety or rumination through fear of negative evaluation was significant, whereas the pathway from actual-ought self-discrepancy to state anxiety or rumination through fear of positive evaluation was not. This contrasts with Study 1 where no differences emerged in the specific indirect effects from actual-ought self-discrepancy to state anxiety or rumination, through either fear of negative evaluation or fear of positive evaluation. When faced with an immediate social threat such as a speech task, it is more likely that the actual-ought self-discrepancy leads to an immediate concern regarding fear of negative evaluation due to the perception of not meeting standards. On the other hand, given that positive evaluation is said to increase standards for future social performance (e.g., Alden et al., 2008), the prospect of only one speech task (as was the case in the current study) may mean that positive evaluation about one's performance is welcomed rather than feared. Without a second speech, it may be difficult to identify whether an actual-ought self-discrepancy may lead to both fear of negative and fear of positive evaluation because of the potential for immediate rejection (fear of negative evaluation), and also the (perceived) increase in standards for the second speech (fear of positive evaluation) if the first speech went well.

Lastly, testing the model containing actual-feared self-discrepancy revealed that the actual-feared self-discrepancy was directly and negatively related to fear of

negative evaluation and state anxiety, as expected. These results suggest that the closer the person perceives they are to their feared self, the more fear of negative evaluation and state anxiety about the speech task that is experienced. Additionally, actual-feared self-discrepancy was indirectly related to state anxiety through fear of negative evaluation. These results are consistent with Carver et al. (1999), who demonstrated the relationship between actual-feared self-discrepancy and anxiety, and extend previous knowledge by providing empirical evidence for the role of actual-feared self-discrepancy in leading to fear of negative evaluation and state anxiety in the context of a social threat. The direct and indirect relationships involving actual-feared self-discrepancy, fear of negative evaluation and state anxiety support the suggestion that fear of negative evaluation may be a consequence of the perception that one's feared self-attributes will be exposed (e.g., Moscovitch, 2009), and also add to the literature regarding how the actual-feared self-discrepancy is related to social anxiety.

Similar to the actual-ought self-discrepancy, actual-feared self-discrepancy and fear of negative evaluation were not directly related to rumination, nor was actual-feared self-discrepancy indirectly related to rumination through fear of negative evaluation. Actual-feared self-discrepancy and fear of negative evaluation were however related to rumination through state anxiety, which is again consistent with the importance of state anxiety in rumination in the context of a speech task. Supporting predictions, the sequential mediation model from actual-feared self-discrepancy to rumination through both fear of negative evaluation and state anxiety was significant. Similar to the actual-ought self-discrepancy model, this significant finding contributes a new understanding of how actual-feared self-discrepancy contributes to fear of negative evaluation in a specific social situation. Findings of

this study suggest that in the context of a speech task, while fear of negative evaluation influences state anxiety, which contributes to rumination, the actual-feared self-discrepancy may fuel of these relationships. Accordingly, interventions aiming to improve fear of negative evaluation should take into account the potential impact from the actual-feared self-discrepancy and develop relevant techniques targeting this phenomenon.

In the current study, although participants were not selected from a clinical population (i.e., those seeking treatment for social anxiety disorder), their mean trait social anxiety scores were above the proposed clinical cut-off (Letamendi, Chavira, & Stein, 2009). As such, our results may have clinical implications for understanding and developing an intervention for social anxiety disorder that specifically targets self-discrepancies. Nevertheless, future research should consider further investigating the models using a clinical sample. Further, although a social performance situation was chosen due to this being more prone to causing anxiety than other social situations (Ruscio et al., 2008), further investigation is needed to determine whether the models reveal the same results in a range of social situations (e.g., social interaction situations). Additionally, no measures were administered regarding the believability of the evaluation manipulation. As such it was unknown whether participants actually believed that their speech was a) recorded and b) shown to an audience after the session.

In summary, despite the limitations of the study, the actual-ought and actual-feared self-discrepancies showed indirect relationships to rumination through fear of negative evaluation and state anxiety in sequence. Unexpectedly, the sequential model involving the actual-ought self-discrepancy and fear of positive evaluation was not significant. The results from this study demonstrate that when controlling

for actual-feared self-discrepancy and depression, the larger the actual-ought self-discrepancy (i.e., the further away the participant was from their ought self), the more fear of negative evaluation, and in turn the more state anxiety about the speech that was experienced, which then led to greater negative rumination about the speech. Further, when controlling for actual-ought self-discrepancy and depression, the lower the actual-feared self-discrepancy (i.e., the closer the person was to their feared self), the more fear of negative evaluation and state anxiety that was experienced, and subsequently the more rumination about the speech that was experienced. The results from this study contribute to the literature by clarifying the role of the actual-ought and actual-feared self-discrepancies in contributing to fear of evaluation, social anxiety and its cognitive process, rumination.

CHAPTER 5: Summary of the Model Testing

As introduced in Chapter 1, the concept of the self allows us to perceive how we are acting in a social situation, and what kind of impression others are forming of us (Leary, 2004). However, it is also the self that makes it difficult to view one's performance objectively. This can explain why people often make comparisons of how they think they are performing in a social situation and how they think they should be performing in a social situation, which can lead to distorted perceptions regarding what kind of impression one is making (Leary, 2004). Based on their review of the cognitive behavioural models of social anxiety where discrepant beliefs about the self are proposed to contribute to the symptoms and cognitive processing of social anxiety, J. Wong et al. (2014) suggested that self-discrepancy is 'key' to social anxiety disorder. As such, it was deemed important to better understand how this 'key' concept may be linked specifically to one of the core features of social anxiety, fear of evaluation.

The preceding chapters examined models which proposed actual-ought and actual-feared self-discrepancies as potential underlying mechanisms in evaluation fears (negative/positive), social anxiety, and rumination. Three studies were designed to examine the proposed models, including a general social situation using an online survey, a naturalistic class presentation, and a controlled individual speech task. Although some results were mixed and limitations of the studies were identified (as discussed in each chapter), the model testing across three different social situations overall provided a better understanding of the relationships between self-discrepancies, fear of evaluation, social anxiety and rumination. In light of the mixed findings, this chapter will provide a brief summary of the consistent and inconsistent results across the three studies and offer some insights drawn from the

overall findings. Table 5.1 and Table 5.2 display the significant and non-significant results for the direct and indirect effects across the three studies, respectively.

Consistent and Inconsistent Results Across Study 1, 2, and 3

Self-Discrepancies and Fear of Evaluation

After controlling for depression and the other respective self-discrepancy, the most consistent relationship shown across the three studies regarding self-discrepancy and fear of evaluation was actual-ought self-discrepancy to fear of negative evaluation. This relationship was supported in both a general social situation (online survey), and specific social situation (individual speech task). On the other hand, the actual-ought self-discrepancy to fear of positive evaluation relationship was found only in the online survey, and the actual-feared self-discrepancy to fear of negative evaluation relationship was found only in the individual speech task study.

Self-Discrepancies and Social Anxiety

Both the actual-ought and actual-feared self-discrepancies were found to significantly influence social anxiety across two of the three studies. Controlling for depression and actual-feared self-discrepancy, actual-ought self-discrepancy was related to social anxiety in the context of a general social situation (online survey) and the individual speech task, but not the class presentation, whereas actual-feared self-discrepancy was related to social anxiety both in the class presentation and individual speech task, but not the online survey. The relationships between actual-ought self-discrepancy and social anxiety were most consistently mediated by fear of negative evaluation across the three studies. Fear of negative evaluation served as a mediator of the relationship between actual-ought self-discrepancy and social anxiety in the online survey and in the individual speech task study, whereas fear of

positive evaluation served as a mediator in the online survey study only. On the other hand, fear of negative evaluation mediated the relationship between actual-feared self-discrepancy and social anxiety only in the individual speech task study.

Self-Discrepancies and Rumination

The direct relationship from actual-ought self-discrepancy and actual-feared self-discrepancy to rumination was not supported in any of the three studies, suggesting that there might be little direct impact from self-discrepancy to rumination. Mediation analyses testing fear of evaluation as a mediator of the relationship between self-discrepancy and rumination also revealed mixed results. Negative and positive fears of evaluation only mediated the relationship between actual-ought self-discrepancy and rumination in the online survey, while there was no mediation occurring through fear of negative evaluation for the relationship between actual-feared self-discrepancy and rumination in any study. On the other hand, there were more convincing results regarding social anxiety (trait and state) as a mediator of the relationship between self-discrepancy and rumination, with both trait and state anxiety serving as mediators for the actual-ought self-discrepancy to rumination relationship in the online survey and individual speech task, respectively. In addition, state anxiety served as a mediator of the relationship between actual-feared self-discrepancy and rumination in the class presentation and individual speech task studies.

Fear of Evaluation, Social Anxiety, and Rumination

Across all three studies, unwavering support was found for the relationships between fear of negative evaluation/fear of positive evaluation and social anxiety (trait and state), and relationships between social anxiety (trait and state) and rumination. In contrast, fear of negative evaluation and fear of positive evaluation

were only related to rumination in the online survey study, with no relationship showing in the socially threatening situations (i.e., the class presentation and individual speech task). Results were also consistent across all three studies supporting the mediation role of trait and state anxiety in the relationship between fear of evaluation and rumination, with the exception of the model involving the actual-feared self-discrepancy in the online survey.

Sequential Models

Across the three studies, the most consistent support was found for the model predicting a relationship from actual-ought self-discrepancy to fear of negative evaluation, to social anxiety and finally to rumination. This model was supported in both the online survey (general social situation) and individual speech task (specific social situation). On the other hand, the model involving actual-ought self-discrepancy, fear of positive evaluation, social anxiety, and rumination was only significant in the online survey study, but not in the socially threatening situations (i.e., class presentation and individual speech task). The model involving actual-feared self-discrepancy, fear of negative evaluation, social anxiety and rumination was significant (and in the expected direction) only in the individual speech task study.

Table 5.1

Summary of Direct Effects Across Study 1, 2, and 3

Model 1		Study		
Predictor variable	Dependent variable	Study 1	Study 2	Study 3
AOSD	FNE	✓	✗	✓
AOSD	SA	✓	✗	✓
AOSD	RUM	✗	✗	✗
FNE	SA	✓	✓	✓
FNE	RUM	✓	✗	✗
SA	RUM	✓	✓	✓
Model 2		Study		
Predictor variable	Dependent variable	Study 1	Study 2	Study 3
AOSD	FPE	✓	✗	✗
AOSD	SA	✓	✗	✓
AOSD	RUM	✗	✗	✗
FPE	SA	✓	✓	✓
FPE	RUM	✓	✗	✗
SA	RUM	✓	✓	✓
Model 3		Study		
Predictor variable	Dependent variable	Study 1	Study 2	Study 3
AFSD	FNE	✗[a]	✗	✓
AFSD	SA	✗	✓	✓
AFSD	RUM	✗	✗	✗
FNE	SA	✓	✓	✓
FNE	RUM	✓	✗	✗
SA	RUM	✓	✓	✓

Note. AOSD = actual-ought self-discrepancy; FNE = fear of negative evaluation; SA = social anxiety; RUM = rumination; FPE = fear of positive evaluation; AFSD = actual-feared self-discrepancy; Study 1 = online survey study; Study 2 = class presentation study; Study 3 = laboratory study; ✓ = significant direct effect; ✗ = non-significant direct effect.

[a]Direct effect was significant but positive, where a negative effect was expected.

Table 5.2

Summary of Indirect Effects Across Study 1, 2, and 3

Model 1	Study 1	Study 2	Study 3
AOSD→FNE→SA	✓	✗	✓
AOSD→FNE→RUM	✓	✗	✗
AOSD→SA→RUM	✓	✗	✓
FNE→SA→RUM	✓	✓	✓
AOSD→FNE→SA→RUM	✓	✗	✓
Model 2	**Study 1**	**Study 2**	**Study 3**
AOSD→FPE→SA	✓	✗	✗
AOSD→FPE→RUM	✓	✗	✗
AOSD→SA→RUM	✓	✗	✓
FPE→SA→RUM	✓	✓	✓
AOSD→FPE→SA→RUM	✓	✗	✗
Model 3	**Study 1**	**Study 2**	**Study 3**
AFSD→FNE→SA	✗[a]	✗	✓
AFSD→FNE→RUM	✗[a]	✗	✗
AFSD→SA→RUM	✗	✓	✓
FNE→SA→RUM	✗	✓	✓
AFSD→FNE→SA→RUM	✗[a]	✗	✓

Note. AOSD = actual-ought self-discrepancy; FNE = fear of negative evaluation; SA = social anxiety; RUM = rumination; FPE = fear of positive evaluation; AFSD = actual-feared self-discrepancy; Study 1 = online survey study; Study 2 = class presentation study; Study 3 = laboratory study; ✓ = significant direct effect; ✗ = non-significant direct effect.

[a]Direct effect was significant but positive, where a negative effect was expected

Overview and Implications for Potential Intervention

Based on the results from the three studies, three major messages can be generalised 1) actual-ought self-discrepancy does indeed contribute to fear of negative evaluation and social anxiety, 2) both fear of negative and fear of positive evaluation play an important role in social anxiety, and 3) social anxiety is associated with rumination. These findings contribute to the literature by replicating and extending the existing data on fear of evaluation, rumination, and self-discrepancies in the context of social anxiety and further provide empirical evidence supporting the relationships between these factors in an integrative manner.

To date, the cognitive behavioural models of social anxiety and empirical studies have long supported the relationship between fear of negative evaluation and social anxiety (Clark & Wells, 1995; Coles et al., 2001; Heimberg et al., 2010; Horley et al., 2004; Mansell & Clark, 1999). More recent research has also strongly supported the relationship between fear of positive evaluation and social anxiety (Fergus et al., 2009; Heimberg et al., 2010; Weeks et al., 2012). Rumination is also well-known as a key cognitive process of social anxiety (e.g., Brozovich & Heimberg, 2008; Clark & Wells, 1995; Heimberg et al., 2010). However, despite self-discrepancies being implicated as 'key' to social anxiety (J. Wong et al., 2014), there was a limited understanding of the contribution of self-discrepancies to fear of evaluation, with only a few studies investigating this from the theoretical perspective of self-discrepancy theory. For example, Strauman and Higgins (1988) conducted a study whereby the associations between actual-ideal self-discrepancy, actual-ought self-discrepancy, depression, and social anxiety were examined in a sample of undergraduate students. The authors reported a stronger correlation between actual-ought self-discrepancy and fear of negative evaluation ($r = .32$), than between the

actual-ideal self-discrepancy and fear of negative evaluation ($r = .24$). A later study by Rodebaugh and Donahue (2007) investigated the same relationships in a sample of speech anxious individuals. Although the results showed a significant correlation between actual-ought self-discrepancy and fear of negative evaluation ($r = .33-.42$), the correlation between actual-ideal self-discrepancy and fear of negative evaluation was of equal strength ($r = .33-.45$). Taken together with the fact that little is known about the relationship between actual-ought self-discrepancy and fear of positive evaluation or the relationship between actual-feared self-discrepancy and fear of negative evaluation, further investigation was warranted to identify the unique contribution of each discrepancy to social anxiety and its core fear, namely fear of negative evaluation.

The three studies in Chapters 2 to 4 served to clarify these issues. The findings lend most support for the role of actual-ought self-discrepancy in contributing to fear of negative evaluation. Future research is needed to address some of the potential limitations across the studies in order to better understand if and when the actual-ought self-discrepancy to fear of positive evaluation and actual-feared self-discrepancy to fear of negative evaluation relationships are important to consider. These results suggest that when considering self-discrepancies as potential mechanisms underlying fear in social anxiety, it is most likely that actual-ought self-discrepancy may play the most important role in relation to fear of negative evaluation. Further, the consistently supported model whereby actual-ought self-discrepancy influenced fear of negative evaluation, social anxiety and rumination, in sequence, suggests that actual-ought self-discrepancy may fuel fear of negative evaluation, which leads to social anxiety and subsequent biased cognitive processing. Overall, these results support the earlier models of social anxiety (e.g.,

Clark & Wells, 1995; Hofmann, 2007; Rapee & Heimberg, 1997), which suggested that discrepant beliefs about the self lead those with social anxiety to fear negative evaluation.

Implications for Potential Interventions

From the results of the three studies, it can be concluded that attributes related to the ought self, rather than the feared self, are most detrimental to fear of negative evaluation. As such, targeting these attributes is an essential step. According to Gilbert (2001), for those with social anxiety fear of negative evaluation relates to worries about exclusion from the social group. Therefore, if actual-ought self-discrepancy contributes to fear of evaluation, ultimately contributing to worries about exclusion from the social group, then perhaps helping individuals modify this self-discrepancy will lead to a decrease in such worries. The challenge then is what strategies might be beneficial for such a purpose.

Cognitive Behaviour Therapy and mindfulness-based therapies such as Acceptance and Commitment Therapy typically work to challenge dysfunctional cognitions, and promote psychological flexibility, respectively (Beck, 2011; S. C. Hayes, Strosahl, & Wilson, 1999). Higgins (1999) described that increases in the magnitude of a discrepancy will lead to greater affect. As such, one of the possibilities is tackling the actual-ought self-discrepancy using a Cognitive Behaviour Therapy approach to challenge the ought self. This may well decrease the magnitude of the discrepancy and in turn reduce fear of negative evaluation. Higgins (1999) further described that increases in the accessibility of a discrepancy will lead to greater affect. Therefore, as an alternative to Cognitive-Behaviour Therapy, helping the socially anxious person to approach the discrepancy with greater flexibility and acceptance through Acceptance and Commitment Therapy may also

reduce concerns about evaluation by others by allowing the person to have some distance from the discrepancy. The next chapter aimed to investigate these approaches to targeting actual-ought self-discrepancy and examine how effective each approach is at reducing fear of negative evaluation, social anxiety and rumination.

CHAPTER 6: The Efficacy of Brief Interventions for Actual-Ought Self-Discrepancy in Social Anxiety

Chapters 2 to 4 reported three studies investigating the role of both actual-ought self-discrepancy and actual-feared self-discrepancy as influencing fear of evaluation, social anxiety, and rumination. Overall, results from these investigations most consistently supported the model involving actual-ought self-discrepancy as influencing fear of negative evaluation, which influenced social anxiety and subsequent rumination. Based on these results, this chapter aimed to investigate two brief interventions targeting the actual-ought self-discrepancy to determine whether they are effective at reducing the self-discrepancy and in turn effective at reducing fear of negative evaluation, and the anxiety symptoms and cognitive processing of social anxiety.

In a recent review, Gregory and Peters (2016) demonstrated that cognitive behaviour therapy for SAD is effective at modifying self-related constructs. Yet treatments specifically targeting the actual-ought self-discrepancy have not, to my knowledge, been investigated in the context of social anxiety. The current study aimed to address this gap by providing a preliminary investigation of the efficacy of two brief interventions, namely cognitive restructuring and acceptance, for actual-ought self-discrepancy. Challenging the ought self through cognitive restructuring, and approaching the actual-ought self-discrepancy with greater psychological flexibility through the practice of mindfulness and acceptance were expected to be effective strategies to decrease the actual-ought self-discrepancy. Specifically, this study aimed to investigate whether 1) cognitive restructuring and acceptance are effective at decreasing actual-ought self-discrepancy, and 2) modifying actual-ought

self-discrepancy would result in a reduction in fear of negative evaluation, social anxiety and rumination.

Cognitive Restructuring

Cognitive-Behaviour Therapy (CBT) for SAD predominantly combines cognitive restructuring and exposure tasks to challenge beliefs (Heimberg & Becker, 2002). One of the original ideas of CBT is based on a cognitive model of psychological disorders that proposes that dysfunctional thinking influences a client's mood and behaviour (Beck, 2011). Coined the current 'gold standard' of treatment for various psychological disorders, CBT is a well-established treatment for SAD. Moderate to large treatment effect sizes for SAD symptom reduction through the use of CBT are reported, along with support for the maintenance of treatment effects of up to 10 years (Acarturk, Cuijpers, van Straten, & de Graaf, 2009; Heimberg, 2002; Mayo-Wilson et al., 2014; Powers, Sigmarsson, & Emmelkamp, 2008; Willutzki, Teismann, & Schulte, 2012).

Although to date several CBT treatment protocols have been developed that incorporate components such as cognitive restructuring, exposure, social skills training, and applied relaxation, there is some debate about which components may be most effective in social anxiety (Acarturk et al., 2009; Powers et al., 2008; Rodebaugh, Holaway, & Heimberg, 2004). For example, in their meta-analysis incorporating randomised studies, Acarturk et al. (2009) found comparable results for cognitive restructuring, exposure, social skills training, and applied relaxation which suggests that each component of CBT may have its merit in the treatment of SAD. However, in earlier traditional CBT protocols for social anxiety (e.g., Heimberg & Becker, 2002), cognitive restructuring was suggested as a key technique for modifying dysfunctional cognitions. Cognitive restructuring

challenges fear related cognitions through gathering evidence for and against the cognitions and examining alternate explanations, or more realistic and adaptive ways of viewing feared situations (Beck, 2011; Heimberg & Becker, 2002). As such, learning from the traditional CBT protocol and using cognitive restructuring to challenge dysfunctional cognitions related to the actual-ought self-discrepancy may be an efficacious approach to reduce not only the discrepancy, but also other common features of social anxiety, such as fear of negative evaluation.

CBT and The Self

The strong focus of the self in the models of social anxiety has led to researchers examining whether CBT is effective at modifying self-related constructs related to SAD. Studies have typically investigated elements of self-content, for example, thoughts and beliefs about the self, self-esteem, and self-schema (e.g., Boden et al., 2012; Goldin et al., 2013; Moscovitch, Rowa, Paulitzki, Antony, & McCabe, 2015; Norton & Abbott, 2016), or self-processes, for example self-perception/self-evaluation and self-focused attention (e.g., Abbott & Rapee, 2004; Bögels, Wijts, Oort, & Sallaerts, 2014; Rapee & Abbott, 2009), which have overall demonstrated that CBT is efficacious in modifying self-related constructs.

Despite the efficacy of CBT for self-related constructs, to my knowledge, no study has specifically targeted the actual-ought self-discrepancy in the context of social anxiety. There are however studies that can inform this approach. For example, Hofmann and Scepkowski (2006) introduced and investigated an enhanced version of CBT entitled social self-reappraisal therapy which aimed to target "a number of maintaining factors of social phobia more directly and aggressively" (p. 47), than traditional CBT. In this uncontrolled pilot study using ten participants with a diagnosis of social phobia, Hofmann and Scepkowski (2006) directly targeted

factors such as social standards and goals, self-focused attention and self-perception, estimated social cost, perception of emotional control, perceived social skills, and rumination. The treatment included 12 weekly sessions of social self-reappraisal therapy. The 'social standards and goals' targeted in social self-reappraisal therapy bears similarity to the actual-ought self-discrepancy. Specifically, the 'social standards and goals' incorporates the desire of socially anxious individuals to convey a particular impression on others, but that they also engage in cognitive processing that interferes with the attainment of this goal (Hofmann & Scepkowski, 2006). As such social self-reappraisal therapy aimed to assist participants to set realistic goals by clarifying the social standard and perceived expectations from others prior to exposure, and to use these newly formed goals to evaluate whether the social encounter was successful or not. Results showed that social self-reappraisal therapy was effective at reducing social anxiety symptoms. However, in relation to social standards and goals, social self-reappraisal therapy specifically focussed on clarifying goals and evaluating whether goal attainment was achieved rather than targeting any self-discrepancy per se (e.g., the ought self and consequences of pursuing this). As such, a more straight forward strategy that targets the actual-ought self-discrepancy is warranted.

On the other hand, in depression literature, Strauman et al. (2001) investigated whether a 12-session course of group CBT for participants meeting criteria for major depressive episode would reduce self-discrepancies related to the ideal and ought selves. Although a significant reduction in the actual-ideal self-discrepancy was observed following treatment, the actual-ought self-discrepancy did not reduce significantly. In a second study, using a similar sample of patients, Strauman et al. (2001) investigated the efficacy of a 4-month treatment course of

either individual CBT or interpersonal psychotherapy and evaluated the results
comparative to anti-depressant medication. In this study both CBT and interpersonal
psychotherapy were effective at reducing the actual-ideal self-discrepancy. In
contrast, only a minor decrease in actual-ought self-discrepancy was observed.
Given that a discrepancy related to the ideal self is most relevant to depression, and a
discrepancy related to the ought self is most relevant to anxiety (Higgins, 1987), it
makes sense that targeting depression in a sample of depressed individuals resulted
in reductions in the actual-ideal discrepancy but not the actual-ought self-
discrepancy. In fact, as reported in the second study by Strauman et al. (2001) the
pre-intervention actual-ought self-discrepancy was quite low compared to the actual-
ideal self-discrepancy (i.e., a discrepancy of less than 1 for the actual-ought self-
discrepancy compared to a discrepancy of almost 4 for the actual-ideal self-
discrepancy), demonstrating the relevance of actual-ideal self-discrepancy, but not
actual-ought self-discrepancy to depression. Taking a slightly different approach,
self-system therapy, "a brief, structured psychotherapy that focuses on the role of
self-regulation in depression" (Vieth et al., 2003, p. 245), specifically incorporates
Higgins (1987) self-discrepancy theory and has shown promising effects for the
actual-ideal self-discrepancy in depression literature. For example, Strauman et al.
(2006) conducted a randomised trial comparing 12 sessions of self-system therapy
with cognitive therapy for patients meeting criteria for major depressive or
dysthymic disorder. Following treatment, both self-system therapy and cognitive
therapy were revealed to be equally efficacious for reducing depressive symptoms,
with large effects.

Given that actual-ought self-discrepancy holds most relevance to anxiety,
rather than depression, there is overall support for CBT in modifying constructs of

the self in social anxiety (Gregory & Peters, 2016), and cognitive therapy is shown

to be efficacious in reducing actual-ideal self-discrepancy in depression literature,

the current study considered cognitive restructuring as a sensible first approach to

targeting the actual-ought self-discrepancy.

Targeting Self-Discrepancy through Cognitive Restructuring

Based on cognitive theory, cognitive restructuring aims to change the content

of dysfunctional thoughts and beliefs to be more realistic and evidence-based, which

results in reduced negative emotions. Hence, cognitive restructuring techniques may

be helpful to modify the importance of a person's dysfunctional belief, namely ought

self. Higgins (1987) suggested that the greater the magnitude of a self-discrepancy,

the more anxiety that will be experienced. Accordingly, it was expected that

challenging the ought self through cognitive restructuring would reduce the

magnitude of the discrepancy and therefore reduce the impact the ought self has on a

person. Based on the findings from the previous three studies, it was also expected

that reducing the actual-ought self-discrepancy would in turn, reduce the fear,

anxiety and rumination experienced by those with social anxiety.

Acceptance

Despite the dominance in the literature of traditional CBT strategies for SAD

treatment, a recent movement to 'third wave' or 'third generation' behavioural and

cognitive therapy has sought to change a client's *relationship* with their thoughts,

rather than trying to change the content of the thoughts. Of the various strategies that

exist, Acceptance and Commitment Therapy (ACT; S. C. Hayes et al., 1999) has

received the most attention in the literature. ACT aims to promote psychological

flexibility, enabling a client to pursue valued goals in life (S. C. Hayes, Luoma,

Bond, Masuda, & Lillis, 2006; S. C. Hayes et al., 1999). This is achieved through

making room for, or accepting unpleasant feelings and sensations, instead of trying to suppress them or push them away, as well as seeing thoughts and feelings for what they are, simply thoughts and feelings.

Although newer than traditional CBT, medium to large effect sizes have been found for ACT treatment in various psychological disorders, including anxiety and social anxiety, that are comparable or in some cases superior to traditional CBT (e.g., Arch et al., 2012; Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Hofmann, Sawyer, Witt, & Oh, 2010; Powers, Zum Vorde Sive Vording, & Emmelkamp, 2009). For example, Kocovski, Fleming, Hawley, Huta, and Antony (2013) conducted a randomized controlled trial of mindfulness and acceptance-based group therapy and cognitive-behavioural group therapy (12 weekly sessions) for participants with a principal diagnosis of SAD. The authors found comparable results between the two therapies, with both approaches reducing SAD symptoms comparative to a waitlist control. Further these treatment gains were maintained at 3-month follow-up. Another study by England et al. (2012) compared 6-sessions of exposure plus acceptance with exposure plus habituation (e.g., classical and operant conditional principles) for participants who experienced social anxiety relating specifically to public speaking. The authors found the acceptance condition to be more effective at reducing public speaking anxiety than the habituation condition with treatment gains maintained at 6-week follow-up. More recently, Shikatani, Antony, Kuo, and Cassin (2014) investigated the efficacy of single session cognitive restructuring and mindfulness strategies on rumination in a sample of socially anxious individuals with concerns about public speaking comparative to a rumination-attention control. The mindfulness strategy also included an acceptance element (i.e., participants were encouraged to notice and accept their thoughts). The

authors found equal efficacy for the treatment approaches in reducing social anxiety related rumination, with both being superior to the control condition. Overall, acceptance appears to be a promising method for reducing the symptoms and cognitive processing of SAD, such as public speaking anxiety and rumination. As such, it may also serve as an effective approach to targeting actual-ought self-discrepancy in social anxiety.

Acceptance and The Self

To my knowledge, no studies have investigated mindfulness-based approaches such as ACT for actual-ought self-discrepancy in the context of social anxiety. Regarding self-related constructs more generally, Shikatani et al. (2014) measured maladaptive self-beliefs using the Self-Beliefs Related to Social Anxiety Scale (Q. J. J. Wong & Moulds, 2011) in their study that investigated the efficacy of a single session cognitive restructuring and mindfulness strategy on rumination in social anxiety. The Self-Beliefs Related to Social Anxiety Scale measures high standards for social performance, conditional beliefs about social evaluation and unconditional beliefs about the self (Q. J. J. Wong & Moulds, 2011). Results showed no difference between cognitive restructuring, mindfulness or control at reducing the maladaptive beliefs. However, the mindfulness strategy used in this study was focussed on cognitive processing more generally (i.e., ruminative thoughts) rather than specifically targeting self-beliefs. As such, further investigation of these brief strategies for self-discrepancy is needed.

In depression literature, Crane et al. (2008) investigated the effects of mindfulness-based cognitive therapy (8 weekly sessions) on self-discrepancies for individuals in recovery from a depressive episode, compared to a waitlist control. These results showed that those in the mindfulness-based cognitive therapy

condition significantly reduced their actual-ideal self-discrepancy comparative to the control, whereas it did not reduce the actual-ought self-discrepancy. These results are consistent with results found by Strauman et al. (2001) who utilised CBT without the mindfulness component. Further, Crane et al. (2008) found that 'letting go' of unhelpful ideal self guides led to a reduction in self-discrepancy for the mindfulness-based cognitive therapy group comparative to control. Based on this result, the authors concluded that changes in the self-guide, rather than changes in the actual self may contribute to the treatment effects of mindfulness-based cognitive therapy for those vulnerable to depression. Consistent with Strauman et al. (2001), the results of Crane et al. (2008) regarding actual-ought self-discrepancy may reflect the greater association between actual-ideal self-discrepancy and depression than actual-ought self-discrepancy and depression. As such, further investigation is needed in SAD, given that the actual-ought self-discrepancy may be more relevant to anxiety.

Overall, despite the apparent success of ACT for SAD, it is uncertain whether targeting actual-ought self-discrepancy through acceptance and mindfulness approaches will result in actual-ought self-discrepancy reduction. However, given the general support for these strategies in SAD, and the potential reasons for the lack of effect on the actual-ought self-discrepancy shown in depression (e.g., that actual-ought self-discrepancy is most relevant to anxiety than depression), investigating the effect of acceptance for actual-ought self-discrepancy is warranted.

Targeting Self-Discrepancy through Acceptance

Although challenging dysfunctional thoughts and beliefs related to actual-ought self-discrepancy and reducing the discrepancy through cognitive restructuring is one way to approach actual-ought self-discrepancy reduction, it could also be helpful to change the individual's *relationship* with the self-discrepancy. Acceptance

aims to change a person's relationship with their thoughts through noticing and accepting the thoughts without judgement, which helps create distance from one's thoughts. Higgins (1999) suggests that the greater the accessibility of a maladaptive self-guide (e.g., the ought self), the greater the influence it will have on affect such as social anxiety. Thus, taking knowledge from Crane et al. (2008) whereby 'letting go' of an unhelpful self-guide rather than trying to change the actual self reduced the actual-ideal self-discrepancy, the aim of acceptance in this context would be to encourage a person to let go of the worry about the ought self and the discrepancy. This process would likely reduce the accessibility of the discrepancy which in turn may reduce fear of evaluation, social anxiety and rumination.

Study 4 Overview

Given the potential influence of actual-ought self-discrepancy in social anxiety but the relative paucity of research looking at strategies for modifying this self-discrepancy in social anxiety, it is necessary to examine interventions to determine whether change in actual-ought self-discrepancy can reduce the fear of evaluation, and other somatic and cognitive symptoms of SAD. Cognitive restructuring and acceptance techniques appear to be promising methods to achieve this goal. As such, the current study compared single-session cognitive restructuring and acceptance interventions with a control condition to examine the individual influence of each brief intervention on actual-ought self-discrepancy, fear of negative evaluation, state anxiety, and rumination pertaining to a social performance situation. Given the potential efficacy of both CBT and ACT (e.g., Kocovski et al., 2013), and the aim of the study being to explore which intervention (cognitive restructuring, acceptance) was more efficacious than control, no specific hypothesis was proposed comparing the two active conditions, instead *a priori* hypotheses

concerned the comparison of cognitive restructuring with control, and acceptance with control. Further, based on the model testing conducted across Chapters 2 to 4, this study also examined whether a change in actual-ought self-discrepancy would predict post-intervention scores on the measures of fear of negative evaluation, state anxiety, and rumination.

Using a sample of university students identified as experiencing difficulties with social anxiety, the current study investigated the efficacy of the interventions within the context of an individual speech task. A 3 (condition: cognitive restructuring, acceptance, control) by 2 (pre-intervention, post-intervention) study design was used, with a follow-up of the rumination undertaken 24 hours after the laboratory session was completed. State-based measures of self-discrepancies, fear of evaluation, social anxiety, and rumination relating to the individual speech task were utilised, along with the 24-hour follow-up rumination measurement. This study also included a measure of the participant's perception of their speech performance in order to assess whether the interventions were effective at improving how participants subjectively felt they performed in the speech tasks. As per previous studies in this thesis, the current study controlled for depression when investigating the efficacy of the interventions.

Hypotheses

Hypothesis 1: It was hypothesised that comparative to the control condition, the cognitive restructuring condition would:

a) Improve actual-ought self-discrepancy, fear of negative evaluation, state anxiety, perception of speech performance, and rumination from pre-intervention to post-intervention

    b) Improve rumination from pre-intervention to 24 hours after the

      laboratory session

Hypothesis 2: It was hypothesised that in comparison to the control condition, the

acceptance condition would:

    a) Improve actual-ought self-discrepancy, fear of negative evaluation, state

      anxiety, perception of speech performance, and rumination from pre-

      intervention to post-intervention

    b) Improve rumination from pre-intervention to 24 hours after the laboratory

      session

Hypothesis 3: It was hypothesised that change in actual-ought self-discrepancy

would predict post-intervention scores on fear of negative evaluation, state anxiety,

perception of speech performance, and rumination.

Method

Participants

Students from Flinders University were recruited through the volunteer

research pool (first-year undergraduate psychology students) where participation

earned course credit. Advertisements were also posted at various locations around

the university campus for recruitment of students from the wider university

population, where participation was remunerated with $20. Participants were

required to be fluent in English language and over the age of 17. Individuals who

had completed any previous studies related to this thesis, or any other studies on

social anxiety using similar procedures (e.g., an impromptu speech) were excluded.

Prior to signing up, interested individuals were required to complete an

online pre-screening questionnaire (Mini-Social Phobia Inventory; Connor, Kobak,

Churchill, Katzelnick, & Davidson, 2001; Appendix Q) to determine their eligibility

for the study. Those who scored six or more on the screening questionnaire, which is suggested as the cut-off score for identifying clinical levels of social anxiety (Connor et al., 2001; Weeks, Spokas, & Heimberg, 2007), were provided with a code number which allowed them to sign-up for the study, if interested. Upon arrival to the laboratory session, additional screening (i.e., diagnostic interview and trait social anxiety measures – see measures section) was completed to be used later to determine eligibility for inclusion in analyses. The reason for calculating trait social anxiety scores after the session was for recruitment and participants' convenience as these strategies aimed to prevent participants from attending twice for assessments, which may increase the possibility of withdrawal. This also reduced waiting times for participants (e.g., if the scores were to be calculated in session). Figure 6.1 provides a flow chart of the recruitment process. As per Studies 1-3, participants were asked a number of demographic questions, including whether they identified with a particular ethic group (yes/no). Those who answered yes to this question were asked to enter (free-text) the ethic group they identified with. Based on the 'Australian Standard Classification of Cultural and Ethnic Groups' (Australian Bureau of Statistics, 2016), Table 6.1 presents the identified ethnic or cultural groups. Table 6.1 also presents the demographic information for the total sample, and for each condition separately. This study received ethical approval from the Social and Behavioural Research Ethics Committee, Flinders University.

Sample Size Calculation

An *a priori* power analysis was conducted to determine sample size for the study. Results of studies using similar brief interventions for social anxiety, or related cognitive factors were used to estimate effect sizes (e.g., Shikatani et al., 2014). Based on a power of .80 and the medium effect sizes found from these

studies, sample size calculation determined that 30 participants per condition would

be needed to detect effects.
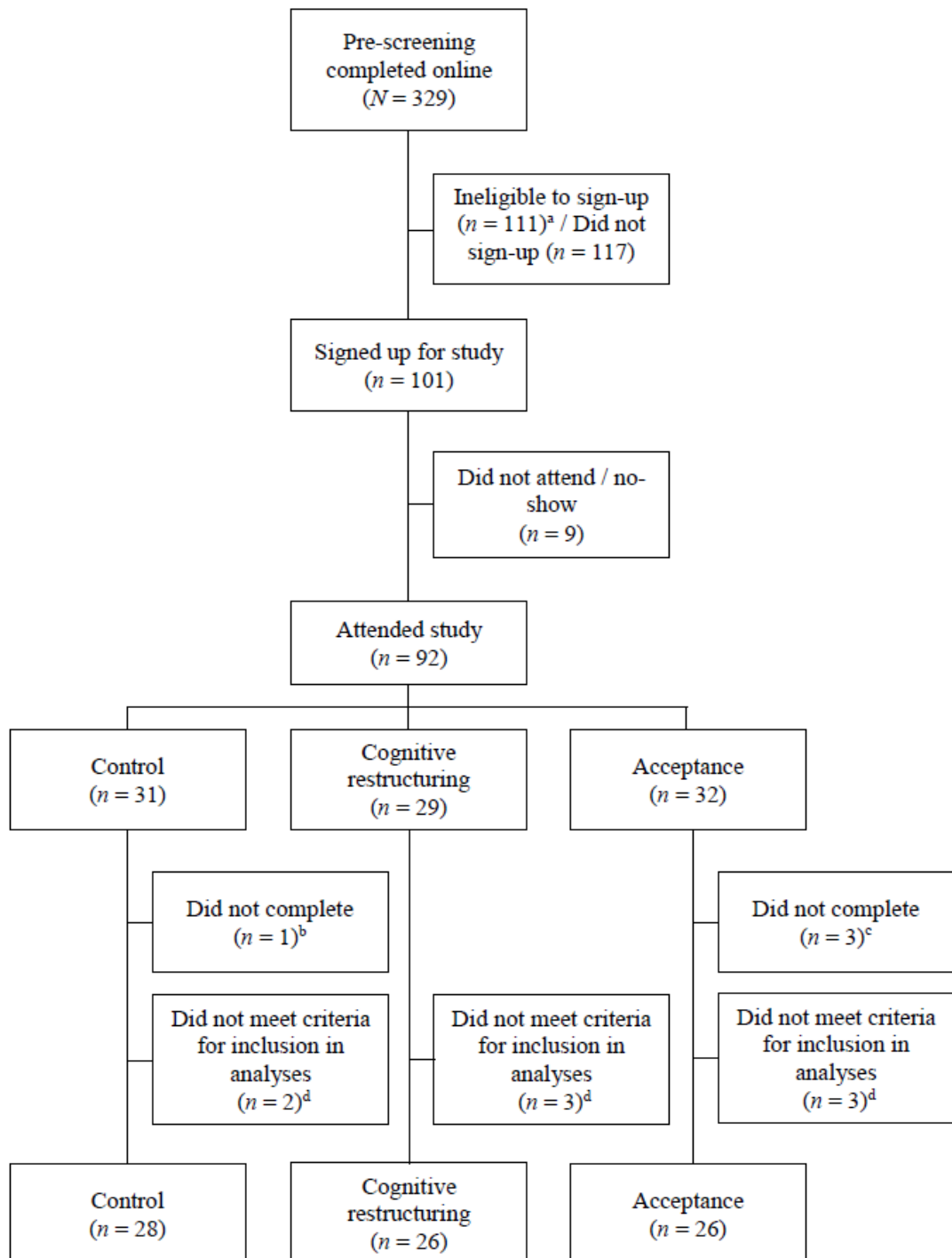
Figure 6.1. Participant flow chart.

[a]Based on Mini-Social Phobia Inventory cut-off criteria; [b]Participant withdrawal;

[c]Study ran overtime not allowing completion ($n = 2$), did not engage, researcher

discontinued study ($n = 1$). [d]Based on diagnostic interview and trait social anxiety

measures.

Table 6.1

Sample Characteristics (Total and Separated by Condition)

	Control	CR	Acceptance	Total
	(*n* = 28)	(*n* = 26)	(*n* = 26)	(*N* = 80)
Age *M* (*SD*)	22.18 (5.79)	21.04 (3.65)	23.19 (10.32)	22.14 (7.08)
Range	17 to 41	17 to 32	17 to 58	17 to 58
Sex				
Male	7 (25%)	3 (11.5%)	2 (7.7%)	12 (15%)
Female	21 (75%)	23 (88.5%)	24 (92.3%)	68 (85%)
Culture/Ethnicity				
No	20 (71.4%)	23 (88.5%)	20 (76.9%)	63 (78.7%)
Yes	8 (28.6%)	3 (11.5%)	6 (23.1%)	17 (21.3%)
North-East Asian	6 (75%)	1 (33.3%)	1 (16.7%)	8 (47.1%)
South-East Asian	1 (12.5%)	1 (33.3%)	-	2 (11.8%)
Southern and Central Asian	-	-	2 (33.3%)	2 (11.8%)
North-West European	-	1 (33.3%)	1 (16.7%)	2 (11.8%)
South-East European	-	-	1 (16.7%)	1 (5.9%)
Oceanian	1 (12.5%)	-	-	1 (5.9%)
South American	-	-	1 (16.7%)	1 (5.9%)
Preferred Language				
English	26 (92.9%)	26 (100%)	25 (96.2%)	77 (96.3%)
Other	2 (7.1%)	-	1 (3.8%)	3 (3.8%)
Mandarin	1 (3.6%)	-	-	1 (1.3%)
Portuguese	1 (3.6%)	-	1 (3.8%)	2 (2.5%)

Relationship status				
Single	15 (53.6%)	15 (57.7%)	19 (73.1%)	49 (61.3%)
In a relationship	11 (39.3%)	10 (38.5%)	6 (23.1%)	27 (33.8%)
De-facto	-	1 (3.8%)	-	1 (1.3%)
Married	2 (7.1%)	-	1 (3.8%)	3 (3.8%)
Education level				
Year 11 or below	1 (3.6%)	4 (15.4%)	3 (11.5%)	8 (10%)
Year 12	12 (42.9%)	15 (57.7%)	16 (61.5%)	43 (53.8)
Cert III or IV	6 (21.4%)	3 (11.5%)	3 (11.5%)	12 (15%)
Dip/Adv Dip	3 (10.7%)	2 (7.7%)	-	5 (6.3%)
Bachelor Degree	5 (17.9%)	-	4 (15.4%)	9 (11.3%)
Grad Dip/Cert	-	1 (3.8%)	-	1 (1.3%)
Post-Grad Degree (Masters/PhD)	1 (3.6%)	1 (3.8%)	-	2 (2.5%)
Employment status[a]				
Not working	16 (48.5%)	11 (40.7%)	16 (55.2%)	43 (48.3%)
Casual	10 (30.3%)	11 (40.7%)	8 (27.6%)	29 (32.6%)
Part-time	3 (9.1%)	3 (11.1%)	3 (10.3%)	9 (10.1%)
Volunteer	4 (12.1%)	2 (7.5%)	2 (6.9%)	8 (9.0%)

Note. CR = cognitive restructuring

[a]Participants selected all that applied (all participants were also studying either full-time or part-time).

Measures

Diagnostic assessment. The Mini-International Neuropsychiatric Interview for the DSM-IV (M.I.N.I; Sheehan et al., 1998; Appendix R) is a brief structured interview for major psychiatric disorders, including SAD. The M.I.N.I has been shown to have reliability and validity that is comparative to other diagnostic tools (e.g., Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; First, Gibbon, Spitzer, & Williams, 1997), however the entire measure is administered in as little at 15 minutes, while other diagnostic interviews such as the SCID-I can take approximately 60 minutes (Sheehan et al., 1998). For the purposes of screening for social anxiety, only the social phobia subscale of this measure was administered. Forming part of the diagnostic interview, participants were asked whether they had engaged in any counselling or psychology/psychiatry services, undertaken self-help activities or strategies, or were taking any prescribed medications for anxiety and/or depression in the three months prior.

Trait social anxiety. Three trait social anxiety measures were used to assess self-reported social anxiety levels in participants. The SPIN (Connor et al., 2000; Appendix D) used in Chapter 2 to 4 was also used in this study with the same cut-off score of 19 or higher determining those with clinical levels of social anxiety disorder. Cronbach's alpha in this study was good ($\alpha = .88$). Additionally, the short, 6-item versions of the Social Phobia Scale (SPS-6; Appendix S) and Social Interaction Anxiety Scale (SIAS-6; Appendix T) were used as further measures of trait social anxiety (Peters, Sunderland, Andrews, Rapee, & Mattick, 2012). The original 20-item SPS and 20-item SIAS (Mattick & Clarke, 1998) were developed as companion measures to assess fear of being scrutinised in social situations (SPS) and fear in social interaction situations (SIAS). The shortened versions were developed

to reduce burden on participants while still retaining their specificity and sensitivity to clinical cut-offs. The SPS-6 and SIAS-6 correlate strongly with the original SPS and SIAS ($r = .$ 92-.94 and .88-92, respectively; Peters et al., 2012). Both the SPS-6 and SIAS-6 are measured on a 5-point rating scale ranging from 0 (not at all characteristic or true of me) to 4 (extremely characteristic or true of me). Optimum cut-off scores on these measures is 2 or higher for the SPS-6, and 7 or higher for the SIAS-6 (Peters et al., 2012). Reliability for the SPS-6 and SIAS-6 in the current study were good ($\alpha = .84$ and .80, respectively).

Depression. In order to control for the level of depression in the analyses, the $DASS_{21}$-D (Lovibond & Lovibond, 1995; Appendix F) used in Chapters 2 to 4 was also used in this study to measure participant's levels of depression. Cronbach's alpha for the current study was good ($\alpha = .88$).

Actual-ought self-discrepancy, fear of evaluation, and state anxiety. The measures of actual-ought self-discrepancy (Carver et al., 1999; Higgins, 1987; Appendix L), BFNE (Leary, 1983; Rodebaugh, Woods, et al., 2004; Weeks et al., 2005; Appendix M), and the SAR (Rapee & Abbott, 2007; Appendix O) used in Chapter 4, were used in the current. Reliability was excellent for these scales at both pre- and post-intervention (actual-ought self-discrepancy, $\alpha = .84$-87; BFNE-S, $\alpha = .91$-94; SAR, $\alpha = .93$-.95).

Perception of speech performance. The Speech Performance Questionnaire (SPQ[16]; Rapee & Lim, 1992; Appendix U) was used to measure participants' perception of their speech performance at pre-intervention and post- intervention. The SPQ is a 17-item scale measuring 12 specific performance items (e.g., had a

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[16] The correct name for this measure is the Speech Performance Scale (SPS), however to avoid confusion with the Social Phobia Scale (SPS), I have amended the name of this scale.

clear voice), and five global performance items (e.g., generally spoke well).

Participants rated each item on a 5-point scale from 0 (not at all) to 4 (very much).

Ten of the 17 items on this scale are negatively worded and are therefore reverse

scored prior to calculating a total speech performance score. Higher scores on this

measure represent a more positive perception of performance. In this study a total

score including both the specific and global items was used. Internal consistency for

the subscales of this measure in previous studies was good (specific items, α = .86;

global items, α = .79; total scale, α = .92; Chen et al., 2013; Rapee & Lim, 1992),

and acceptable in the current study for the total scale (α = .68-.71).

Rumination. The TQ (Abbott & Rapee, 2004) used in Chapter 4 was used to

measure negative rumination specific to the speech task. Further modifications to

this measure were made for the current study in order to measure not only how much

rumination was experienced by the participants but also how distressing the

rumination was for each participant. First, replicating adaptations made to the TQ in

previous studies (Perini et al., 2006; Shikatani et al., 2014), participants were asked

to answer each item on a) the degree to which they agreed with each speech-related

ruminative thought (rumination-agree), and b) how distressing they found each

thought (rumination-distress). Second, the instructions of the TQ were amended to

be relevant to the assessment time-points (pre- intervention/post- intervention, and

24-hours after the laboratory session; see Appendix V). As post-event rumination is

deemed as an important maintenance factor for social anxiety, the purpose of

assessing rumination at pre-and post-intervention along with 24-hours after the

session was to investigate whether rumination not only changed immediately after

the intervention, but also whether this change was maintained after 24 hours. Both

the rumination-agree and rumination-distress scales had excellent internal

consistency, respectively (pre- intervention, α = .94, .95; post- intervention, α = .95, .96; 24-hours later, α = .96, .98).

Other questions. Following the rumination questionnaire 24-hours after the laboratory session participants were also asked whether they had engaged in any counselling or psychology/psychiatry services, self-help activities or strategies, or taken any prescribed medications for anxiety and/or depression. In addition, to assess the overall validity of the study (i.e., the believability of the study instructions and intervention strategies), participants were asked four supplementary questions at the end of their rumination questionnaire: 1) *To what extent do you believe this study is about social anxiety*, 2) *To what extent do you believe that your speech was recorded during the session yesterday*, 3) *To what extent do you believe that the activity you engaged in yesterday is a helpful strategy for self-discrepancies in social anxiety*, 4) *To what extend do you believe that your speech was evaluated by others after your session yesterday*. Participants indicated the percentage (0: not at all, 100: very much so) that they believed each aspect of the study.

Procedure

Figure 6.2 provides an overview of the study procedure. Upon entering the laboratory, participants were given identical information about the study procedures. Specifically, that the study involved completing several questionnaires, performing two speeches to a video camera that would be recorded and shown to an audience after the session, and completing a brief activity in between the two speeches. Participants then read a more detailed information sheet about the study prior to signing a consent form which included an explanation of any potential risks, and rights to withdrawal. At the commencement of the session, all participants underwent the diagnostic interview (M.I.N.I, questions relating to current

therapy/self-help) with the researcher for this study (a provisional psychologist trained in administration of the M.I.N.I). Following this, all participants completed the trait social anxiety, depression and ought self measures. Next, participants were guided through choosing their 2 speech topics for the study using the same list of topics as Chapter 4 (i.e., university life, my favourite book/film), and rated their familiarity ($M_{speech1} = 7.35$, $SD = 1.70$; $M_{speech2} = 7.43$, $SD = 1.87$). Before preparing for the first speech, participants completed the ought self measure. Participants were then given instructions both verbally and on-screen regarding preparation for the first speech. For the speech, participants were asked to stand in front of the video camera and were reminded that the speech would be recorded and shown to an audience who would provide an objective evaluation of their speech. Participants were informed that the audience consisted of three post-graduate students. Participants were encouraged to perform their speech for the entire three minutes, but if they felt they could not continue they alerted the researcher and the speech was stopped at that point. The researcher turned their back during the presentation of the speech to avoid inadvertently giving any feedback via facial expressions or body language.

Following the speech all participants completed the post-speech measures (actual self, fear of negative evaluation, state anxiety, perception of speech performance and rumination), before completing either the cognitive restructuring, acceptance, or control condition. The randomisation to condition was prepared prior to the commencement of the study using a pre-assigned random number generator in blocks of three, to allow for similar numbers in each group. In the interest of consistency of instructions and answers to participant questions during the interventions, the primary researcher for this study was the only researcher present

during the laboratory sessions. On completion of the intervention activities,

participants were asked to rate their ought self again and then prepared and

undertook their speech and post-speech measures as per the pre-intervention

procedure. Finally, following the completion of the post-speech measures for the

second speech participants were provided with instructions regarding the rumination

questionnaire to be completed in 24 hours. Two participants did not return the

rumination questionnaire, of those who did (97.5%), completion time varied

between 19.97 to 119.33 hours ($M_{\text{hours}} = 29.43$, $SD = 14.74$).

Entered laboratory session
Researcher explained procedure
Read information sheet including potential risks
Signed consent form

M.I.N.I diagnostic interview & questions about therapy/self-help

Completed demographics, SPIN, SPS-6, SIAS-6, $DASS_{21}$-D

Chose speech topic 1 & 2 and rated familiarity with topic

Completed ought self characteristics and ratings (Time 1)

2 minutes preparation of speech

Performed first speech to video camera

Completed actual self ratings, BFNE, SAR, SPQ, rumination-agree, rumination-distress (Time 1)

Control	Cognitive restructuring	Acceptance

Rated ought self characteristics (Time 2)

Repeated the same procedure (speech preparation for speech 2, performed speech 2 to video camera, completed actual sef ratings, BFNE, SAR, SPQ, rumination-agree, rumination-distress) (Time2)

Instructions for follow-up questionnaire
End of in-person session

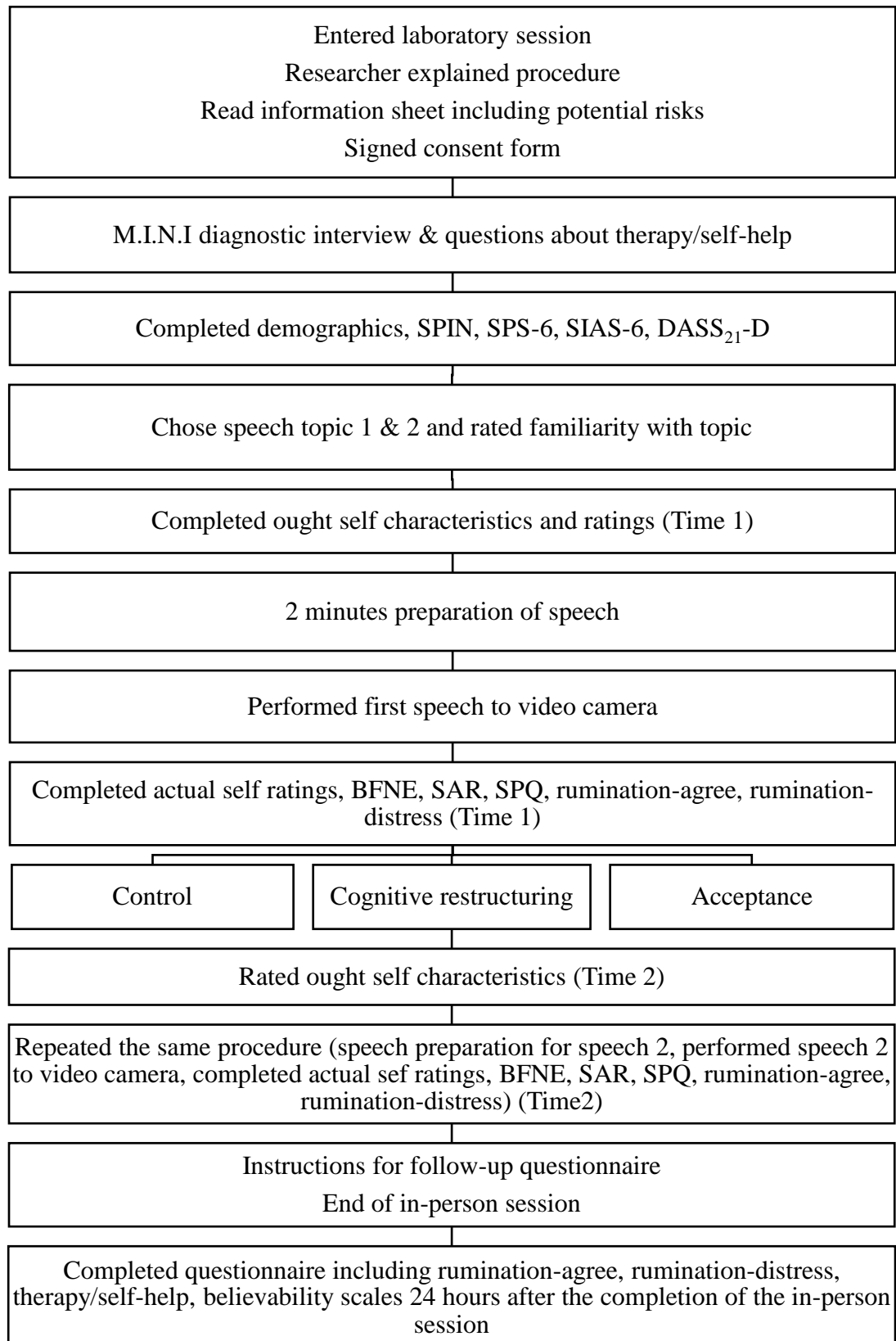| Completed questionnaire including rumination-agree, rumination-distress, therapy/self-help, believability scales 24 hours after the completion of the in-person session |
| --- |

Figure 6.2. Flow chart for procedure of pre-intervention, post-intervention, and 24

hours after laboratory session.

Intervention Strategies

      Cognitive restructuring. The content of the cognitive restructuring intervention was based on (Heimberg & Becker, 2002) adapted to be appropriate to a single-session (based on Gee, 2010; Shikatani et al., 2014). The design of the intervention and wording of the statements was adapted from the worksheets available through the Centre for Clinical Interventions website (Department of Health, 2016). The intervention was self-run via a computer within the laboratory where the researcher was present, however the activity was set up in such a way that the researcher could 'check-in' at certain points prior to further progression in the task. This was designed to enable the researcher to ask if the participant had any questions or needed any assistance throughout the task. Participants were told verbally by the researcher just prior to the commencement of the intervention that they were going to undertake an activity called cognitive restructuring and that the activity involved a) reading some background information about the task and b) providing short responses to several questions. Psychoeducation introducing self-discrepancies and their relationship to fear and anxiety, as well as explanations about the relationship between thoughts and emotions/physical sensations were provided. To prevent the participants simply clicking through without reading the information provided, the presentation of the psychoeducation pages were time-restricted (the participant could not progress for the first 20 seconds that each page was presented). At the end of the psychoeducation pages, the researcher verbally checked the understanding of the information received by the participant and answered any questions they had in order to clarify the rationale for the task.

      Next, participants began the task of the short-answer questions. First, participants were presented with their ought characteristics and their ought and

actual self ratings, and were asked to identify the characteristic with the largest discrepancy. This characteristic was the focus for the subsequent statements that the participants provided. Participants were then asked to complete two 'if, then' statements with the first addressing the main reason why the participant believed they should or ought to display the focal characteristic in their speech, and the second addressing the main consequence they thought might occur if they *did not* display the characteristic during their speech. For both 'if, then' statements participants were provided with an explanation and an example response. The second statement was the statement targeted during the rest of the cognitive restructuring task (herein referred to as the original statement). Participants were next asked to generate an alternative statement to their original statement. Specifically, they were encouraged to consider another, more positive way of viewing the situation. Again, participants were provided with an explanation and an example response. Participants were then asked to provide evidential statements for both their original statement and their alternative statement (after reading information about how to do so and given example responses). Finally, participants were presented with their original statement and the evidence for this, and their alternative statement and the evidence for this. They were then asked, after considering both statements and the evidence, to write a new, balanced statement about the situation. The cognitive restructuring intervention ran for 12 minutes. An example participant response for the characteristic of '*composure*' is provided in Table 6.2 (see Appendix W for the full instructions and questions used during the cognitive restructuring condition)

Table 6.2

Example Responses in the Cognitive Restructuring Condition for the Ought

Characteristic of Composure

Task	Statement
Perceived benefits of having composure	If I have *"composure"* in my speech then *"others will think I am confident"*
Original statement	If I do not have *"composure"* in my speech then *"others will think that I am incompetent"*
Evidence for original statement	*Sometimes if I watch a person give a speech and they completely lack composure, then I think that they do not have the authority to say what they are saying*
Alternative statement	*Most people lack an element of composure when giving a speech, it is normal*
Evidence for alternative statement	*I have seen even highly intelligent lecturers get nervous whilst giving a speech and jumble their words and I have not thought them to be incompetent. I know that speaking to an audience involves a high cognitive load and people can make mistakes*
Balanced conclusion	*If I lack composure while giving a speech, people will notice but they will not judge me in a negative way because they will understand that people often feel nervous when giving a speech*

Acceptance. The acceptance intervention was based on the work by and Harris (2009) and Roemer and Orsillo (2009), as well as drawing on knowledge from Gee (2010) and Shikatani et al. (2014) who used a similar protocol. This condition was also self-run via the computer in the laboratory where the researcher was present, and again the activity was set up in such a way that the researcher could 'check-in' at certain points prior to progression. At the time the intervention was to start, it was explained verbally to participants by the researcher that they were going to undertake an activity called acceptance, and that the activity would involve reading information about the strategy at various points throughout the task, and listening to two audio recordings. The acceptance activity consisted of the same psychoeducation about self-discrepancies that was included in the cognitive restructuring condition, along with psychoeducation about acceptance including that it is the practice of paying attention in the present moment and noticing thoughts with openness, curiosity, and compassion, rather than judgement. Following the same process as the cognitive restructuring condition, participants identified their largest actual-ought self-discrepancy, and this characteristic was the focus of the acceptance activity. Prior to the first audio recording commencing the researcher verbally checked the understanding of the information provided and gave the participants an opportunity to ask any questions.

Next, participants listened to a short, two-minute audio recording designed to guide participants through a simple mindfulness exercise geared toward bringing awareness to the present moment and to the breath. The content for this recording was based Harris (2009) and Roemer and Orsillo (2009). For example:

"Take a moment to notice how you are sitting in the chair (Pause). Notice where your body is touching the chair (Pause). Notice what you can hear (Pause). If

your eyes are open, notice what you can see; if they are closed notice what colours or shadows are visible (Pause). Notice what sensations you can feel in your body (Pause). Notice what you are thinking and feeling (Pause). Now bring your attention to your breath, notice how the air enters your body, where it travels and how it leaves your body, notice the parts of your body that move as you are breathing (Pause). Now place your hand on your abdomen and notice whether it moves as you are breathing (Pause). Gently deepen your breath so that you are breathing from your abdomen (Pause). Notice how your abdomen, chest, and shoulders expand as you inhale (Pause). Continue to deepen and slow your breath, pay attention to the sensations you experience, really notice the breath, observe it as if you are a curious scientist who has never encountered breathing before."

Following the first audio recording, participants were guided through some on-screen 'debriefing' about the activity using 'accepting' language including such phrases as "*it is normal for the mind to wander, or to feel self-conscious during tasks such as this, or to feel like you are not doing it properly*". Next, participants were introduced more formally to the concept of acceptance and what it involved before listening to the final audio recording which was seven minutes in length and incorporated an acceptance-based script. Again, the content of this recording was based on the work of Harris (2009) and Roemer and Orsillo (2009), but was adapted to be specific to self-discrepancies (see Appendix X for full script). For example:

"Now, see if you can bring an openness to whatever thoughts or emotions you are experiencing about your ought self, your actual self or the discrepancy between the two. No matter how unpleasant these may be, say to yourself "It's okay. Whatever it is, it's already here. Let me be open to it." Then just stay with the awareness of these thoughts or emotions, breathing with them, accepting them,

letting them be, allowing them to be just as they are (Pause). Soften and open to the

thoughts and emotions about your ought self, your actual self or the discrepancy

between the two as you become aware of them, letting go of any tensing and bracing

(Pause). Remember that by saying "it's already here" or "it's okay" you are not

judging or saying that everything is fine, but simply helping your awareness, right

now, to remain open to the thoughts, feelings or sensations you may be experiencing

about the discrepancy"

Both recordings were spoken by the researcher for this study. The researcher

turned her back during both recordings in the interest of reducing self-consciousness

in participants so they could fully engage in the task (e.g., close their eyes if they

wished). These exercises took 12 minutes.

Control. Participants allocated to the control condition were given a filler

task for the same time that the cognitive restructuring and acceptance conditions ran

for (i.e., 12 minutes). The filler task consisted of a computerised spot-the-difference

game played on a computer located within the laboratory where the researcher was

present. The game contained 10 levels (one picture per level) with 10 differences to

spot in each level. Participants were timed for 12 minutes and asked to stop when the

time was complete and move on to the next phase of the study.

Selection of Participants for Analyses

Of the 88 participants that completed the in-person session (i.e., 92 study

attendees, minus four non-completers), 12 answered 'no' to the qualifying question

on the M.I.N.I which asked "*In the past month, did you have persistent fear and*

significant anxiety at being watched, being the focus of attention, or of being

humiliated or embarrassed?" Based on the coding instructions for the M.I.N.I, if a

person answers no to this question, it is determined that the person does not meet

criteria for current SAD based on DSM-IV criteria (Sheehan et al., 1998). Given the preliminary nature of the project and the difficulties associated with recruiting a clinical population, the current study was interested in seeking participants who identified as having difficulties with social anxiety instead of clinical diagnosis. As such, a more flexible inclusion criteria was used. This included the use of three trait measures of social anxiety (SPIN, SPS-6, SIAS-6) in conjunction with the M.I.N.I. Using the qualifying question from the M.I.N.I, and the recommended cut-off scores for the SPIN, SPS-6, and SIAS-6 (Letamendi et al., 2009), participants were retained for analyses if they met criteria for at least two of the four assessments. Eight people were excluded from analysis based on this criterion, of which all only met criterion on one of the four measures.

Results

Preliminary Analyses

Data were screened for missing values which identified 154 missing data points, inclusive of those who did not return the questionnaire to be completed 24 hours after the laboratory session ($n = 2$). Excluding the non-return of the questionnaire, a total of 90 individual items, missing completely at random were imputed using Expectation-Maximization estimations. When there is only a small amount of data missing and they are MCAR (as determined by Little's MCAR Test), it is considered appropriate to use single-imputation methods such as Expectation-Maximisation (EM) imputation (Tabachnick & Fidell, 2014). As such, EM imputation was utilised to replace these missing data. Data were checked for outliers and as this study was using parametric methods of statistical analysis, data were also checked for violations of normality. The DASS$_{21}$-D, BFNE-S (pre- and post-intervention), targeted characteristic (pre- and post-intervention), rumination-agree

(post-intervention and 24-hours later), and rumination-distress (24-hours later) were deemed non-normal on the basis of histograms and significance tests of normality. After calculating z-scores for all variables identified as skewed, only four individual data points relating to the targeted characteristic at pre-intervention, and rumination-distress 24 hours later identified skewness that were greater than an absolute value of 3.29 (significant at the $p < .001$ level; Field, 2013). These four data points were replaced with the next most extreme score in order for the z-score to fall within the acceptable range. After corrections were applied data were deemed normal for all variables and no outliers were present.

Demographics and trait measures. No significant differences emerged on any of the demographic characteristics across conditions. Means and standard deviations for the trait social anxiety and depression measures are provided in Table 6.3. No significant differences between conditions on any of these trait measures were observed.

Table 6.3

Means and (Standard Deviations) of Trait Social Anxiety and Depression Measures (Total and Separated by Condition)

	Control ($n = 28$)	CR ($n = 26$)	Acceptance ($n = 26$)	Total ($N = 80$)
SPIN	37.75 (10.77)	42.42 (10.73)	41.77 (11.39)	40.58 (11.02)
SPS-6	10.36 (5.04)	12.12 (4.69)	12.38 (5.49)	11.59 (5.10)
SIAS-6	9.86 (4.30)	11.15 (4.59)	10.58 (5.22)	10.51 (4.68)
DASS$_{21}$-D	5.86 (4.13)	6.12 (4.93)	7.69 (4.77)	6.54 (4.62)

Note. SPIN = Social Phobia Inventory; SPS-6 = Social Phobia Scale (6-item version); SIAS-6 = Social Interaction Anxiety Scale (6-item version); DASS$_{21}$-D = Depression Anxiety Stress Scales 21 item–Depression subscale.

Between-groups differences at baseline. One-way ANOVAs were conducted to determine whether differences emerged between conditions on the dependent variables at baseline (pre-intervention). No significant differences were found on actual-ought self-discrepancy, fear of negative evaluation, state anxiety, perception of speech performance, rumination-agree, rumination-distress, or the discrepancy between the actual and ought selves on the specific characteristic targeted/characteristic with the highest discrepancy. Additionally, no significant differences were shown at baseline on the dependent variables between those who answered yes to undertaking therapy/self-help and those who answered no (see Table 6.4). There were also no differences between groups, or between Time 1 and 2 (total) on familiarity of speech topic. Thus, at pre-intervention it was deemed all groups were equivalent.

Manipulation checks and therapy/self-help in 24 hours post-study. No significant difference between conditions regarding the believability that the study was about social anxiety, the speeches were recorded, or the speeches were evaluated was found. However, a significant difference emerged regarding the believability that the brief intervention was a helpful strategy, $F(2, 77) = 5.16$, $p = .008$. Those in the control condition were less believing that the strategy was helpful, than those in the acceptance condition (see Table 6.5). No significant differences emerged on this believability scale between control and cognitive restructuring conditions or acceptance and cognitive restructuring conditions. There was no

significant difference between conditions on therapy/self-help 24 hours after study

(Table 6.5).

Descriptive Statistics for Dependent Variables

Means and standard deviations at pre-intervention and post-intervention for

each of the dependent variables are presented in Table 6.6.

Table 6.4

Descriptive Statistics for Therapy/Self-Help in Previous 3-Months, Measured at

Baseline (Total and Separated by Condition)

	Control	CR	Acceptance	Total
	($n = 28$)	($n = 26$)	($n = 26$)	($N = 80$)
Therapy/Self-Help[a]				
No	19 (67.9%)	19 (73.1%)	20 (76.9%)	58 (72.5%)
Yes	9 (32.1%)	7 (26.9%)	6 (23.1%)	22 (27.5%)
Counselling	4 (36.4%)	3 (33.3%)	1 (14.3%)	8 (29.6%)
Psychology	1 (9.1%)	4 (44.4%)	1 (14.3%)	6 (22.2%)
Self-help	6 (54.5%)	2 (22.2%)	5 (71.4%)	13 (48.2%)

Note. CR = cognitive restructuring.

[a]More than one may have applied to the participants. No eligible participant was

taking medication for anxiety/depression at the time of assessment.

Table 6.5

Descriptive Statistics for Manipulation Checks and Therapy/Self-Help 24 Hours After Session.

	Control (n = 27)	Cognitive Restructuring (n = 26)	Acceptance (n = 25)	Total (n = 78)[a]
Belief study about social anxiety (%)	75.85 (16.56)	83.38 (15.99)	86.72 (16.13)	81.85 (16.67)
Belief speech recorded (%)	82.81 (24.05)	83.88 (19.08)	87.60 (16.74)	84.71 (20.12)
Belief intervention helpful (%)	57.41 (22.83)	68.54 (23.26)	77.88 (23.02)	67.68 (24.24)
Belief speech evaluated (%)	73.44 (26.02)	76.62 (22.99)	79.00 (20.62)	76.28 (23.19)
Therapy/Self-Help				
No	26 (96.3%)	26 (100%)	24 (96.0%)	76 (97.4%)
Yes	1 (3.7%)	-	1 (4.0%)	2 (2.6%)
Counselling	1	-	-	1
Self-help	-	-	1	1

[a]Two participants did not return the questionnaire, missing from control condition (n = 1) and from acceptance condition (n =1).

Table 6.6

Means and (Standard Deviations) for the Dependent Variables Across Time (Pre-Strategy/Post-Strategy/24 Hours After Laboratory

Session), Separated by Condition

Dependent Variable	Time	Control (*n* = 28)	Cognitive Restructuring (*n* = 26)	Acceptance (*n* = 26)
Actual-ought self-discrepancy	Pre	1.89 (1.04)	2.55 (1.40)	2.22 (.90)
	Post	.74 (1.65)	1.41 (1.41)	1.13 (1.44)
Targeted actual-ought characteristic	Pre	3.25 (1.11)	3.96 (1.34)	3.92 (1.41)
	Post	.71 (2.02)	1.62 (1.88)	1.35 (1.88)
Fear of negative evaluation	Pre	28.14 (8.45)	28.85 (7.68)	29.31 (7.93)
	Post	25.79 (8.11)	25.62 (9.89)	21.77 (8.95)
State anxiety	Pre	25.39 (8.01)	26.08 (11.18)	26.81 (9.34)
	Post	21.39 (8.30)	20.62 (11.84)	19.00 (10.01)
Perception of speech performance	Pre	28.86 (5.63)	30.88 (9.71)	29.19 (5.06)
	Post	26.29 (6.49)	28.58 (8.54)	28.00 (6.03)

Rumination-agree[a]	Pre	30.64 (11.08)	33.85 (15.16)	36.38 (11.98)
	Post	27.14 (11.16)	29.04 (15.89)	27.08 (13.92)
	24-Hours Later	20.44 (10.98)	21.31 (16.11)	22.28 (15.54)
Rumination-distress[a]	Pre	28.11 (12.87)	30.85 (14.77)	31.62 (14.42)
	Post	24.85 (13.91)	24.76 (14.67)	22.40 (14.74)
	24-Hours Later	17.30 (12.72)	15.58 (15.92)	16.80 (16.20)

Note. Targeted actual-ought characteristic = characteristic targeted during intervention (for cognitive restructuring and acceptance conditions)/characteristic with the highest discrepancy (for control condition).

[a]Two participants did not return the questionnaire, missing from control condition ($n = 1$) and from acceptance condition ($n = 1$)

Hypothesis Testing

      Hypothesis 1a. Hypothesis 1a proposed that actual-ought self-discrepancy, fear of negative evaluation, state anxiety, perception of speech performance, and rumination would improve in the cognitive restructuring condition, comparative to the control condition. As per methods undertaken by Shikitani et al. (2014), to test this hypothesis planned contrasts were conducted based on the *a priori* hypotheses. A series of 2 (time: pre-intervention, post-intervention) x 2 (condition: control, cognitive restructuring) mixed ANCOVAs were conducted, controlling for the effects of depression. Despite the paired contrasts being planned, Bonferroni correction was applied to any significant results to reduce Type I error associated with multiple tests being performed on a single set of data (Field, 2013). The adjusted *p* value as a result of the Bonferroni correction calculation (i.e., the traditional *p* value divided by the number of tests conducted; Field, 2013), was *p* < .003. That is, in order for a result to remain significant after applying Bonferroni correction the *p* value needed to be below .003. As no significant difference on depression was found between the cognitive restructuring and control conditions, the assumption of 'independence of the covariate and treatment effect' for ANCOVA was satisfied (Field, 2013; Miller & Chapman, 2001). Thus, it was deemed appropriate to include this as a covariate. Effect sizes were interpreted using the rule of thumb/benchmark that a small effect is .01, medium is .09 and large is .25 or above.

      Actual-ought self-discrepancy. There was a moderate, significant main effect of time, $F(1, 51) = 14.03$, $p < .001$, *partial* $\eta^2 = .22$ for the total actual-ought self-discrepancy score (i.e., average of all characteristics). Mean actual-ought self-discrepancy scores reduced significantly from pre-intervention ($M = 2.21$, $SD =$

1.26) to post-intervention ($M = 1.07$, $SD = 1.56$). This effect remained significant after Bonferroni correction was applied as $p < .003$. The main effect of condition was also significant, but small $F(1, 51) = 4.42$, $p = .040$, *partial* $\eta^2 = .08$. Overall, irrespective of time, mean actual-ought self-discrepancy scores in the cognitive restructuring condition ($M = 1.98$, $SD = 1.41$) were significantly larger than in the control condition ($M = 1.32$, $SD = 1.35$). However, this effect was no longer significant after Bonferroni correction was applied as $p > .003$. No significant time by condition interaction was observed.

Regarding the specific actual-ought self-discrepancy characteristic targeted during the intervention (or the characteristic with the largest discrepancy in the control condition), there was a large significant main effect of time $F(1, 51) = 29.47$, $p < .001$, *partial* $\eta^2 = .37$ where actual-ought self-discrepancy significantly reduced from pre-intervention ($M = 3.54$, $SD = 1.44$) to post-intervention ($M = 1.15$, $SD = 1.99$). This effect remained significant after Bonferroni correction was applied as $p < .003$. A moderate, but significant main effect of condition $F(1, 51) = 5.13$, $p = .028$, *partial* $\eta^2 = .09$ was also found, where actual-ought self-discrepancy was overall higher for cognitive restructuring ($M = 2.79$, $SD = 1.61$) than control condition ($M = 1.93$, $SD = 1.72$). However, the effect was no longer significant after Bonferroni correction was applied as $p > .003$. There was no significant time by condition interaction.

Fear of negative evaluation. There was no significant main effect of time, condition, nor significant time by condition interaction. However, the main effect of time did approach significance, $F(1, 51) = 3.90$, $p = .054$, *partial* $\eta^2 = .07$, with both conditions showing significant reductions on fear of negative evaluation at post-intervention compared to pre-intervention

State anxiety. A moderate, significant main effect of time, $F(1, 51) = 5.34$, $p = .025$, *partial* $\eta^2 = .10$, was shown for state anxiety whereby state anxiety significantly reduced from pre-intervention ($M = 25.72$, $SD = 9.58$) to post-intervention ($M = 21.02$, $SD = 10.07$), for both conditions. However, this effect was no longer significant after Bonferroni correction was applied as $p > .003$. No significant main effect of condition, nor significant time by condition interaction was found.

Perception of speech performance. The main effect of time was significant for perception of speech performance. However, participants from both conditions rated their performance *worse* at post-intervention ($M = 27.39$, $SD = 7.56$) compared to pre-intervention ($M = 29.83$, $SD = 7.85$), $F(1, 51) = 7.91$, $p = .007$, *partial* $\eta^2 = .13$. However, this effect was no longer significant after Bonferroni correction was applied as $p > .003$, but at $p = .007$ the effect did approach significance. No main effect of condition, nor significant time by condition effect was revealed.

Rumination. Regarding rumination-agree, there was a significant, moderate, main effect of time on the extent to which participants agreed with each ruminative thought about their speech where scores significantly reduced from pre-intervention ($M = 32.19$, $SD = 13.18$) to post-intervention ($M = 28.06$, $SD = 13.55$), $F(1, 51) = 4.56$, $p = .038$, *partial* $\eta^2 = .08$, across both conditions. This effect was no longer significant after Bonferroni correction was applied as $p > .003$. No significant main effect of condition nor significant time by condition interaction was found. Regarding rumination-distress, a significant, moderate main effect of time was revealed, $F(1, 51) = 5.20$, $p = .027$, *partial* $\eta^2 = .09$, whereby distress related to the ruminative thoughts was rated higher at pre-intervention ($M = 29.43$, $SD = 13.75$), than at post-intervention ($M = 24.80$, $SD = 14.15$), for both conditions. However,

this effect was no longer significant after Bonferroni correction was applied as $p >$ .003. No significant condition main effect or time by condition interaction was observed.

Hypothesis 1b. To investigate whether those in the cognitive restructuring condition, when compared with the control condition experienced a reduction in rumination 24 hours after the in-person session, two 2 (post-intervention, 24 hours later) x 2 (control, cognitive restructuring) mixed ANCOVA's, controlling for depression (with Bonferroni correction being applied to any significant results [$p <$ .003] to reduce Type I error), were conducted on the dependent variables of rumination-agree and rumination-distress. A moderate significant main effect of time was shown for rumination-agree from post-intervention ($M = 28.19$, $SD =$ 13.64) to 24-hours later ($M = 20.87$, $SD = 13.61$), $F(1, 50) = 7.17$, $p = .010$, *partial* $\eta^2 = .13$. However, this effect was no longer significant after Bonferroni correction was applied as $p > .003$. No main effect of condition or time by condition interaction was observed. Similarly, a moderate significant main effect of time was shown for rumination-distress, which significantly reduced from post-intervention ($M = 24.88$, $SD = 14.27$) to 24-hours later ($M = 16.45$, $SD = 14.26$), $F(1, 50) = 8.16$, $p = .006$, *partial* $\eta^2 = .14$. This effect was no longer significant after Bonferroni correction was applied as $p > .003$, but with a p value of .006 this effect did approach significance. No main effect of condition was found and no time by condition interaction was found.

Hypothesis 2a. Hypothesis 2a proposed that actual-ought self-discrepancy, fear of negative evaluation, state anxiety, perception of speech performance, and rumination would improve in the acceptance condition, comparative to the control condition. Again, as per methods undertaken by Shikitani et al. (2014), a series of

planned contrasts were conducted based on the *a priori* hypotheses. Two (time: pre-strategy, post-strategy) x 2 (condition: control, acceptance) mixed ANCOVA's controlling for depression were conducted to test this hypothesis, with Bonferroni correction being applied to any significant results ($p < .003$) to reduce Type I error associated with multiple tests being performed on a single set of data (Field, 2013). Again, the assumption of 'independence of the covariate and the treatment effect' for depression was met and as such it was deemed appropriate to include depression as a covariate (Field, 2013; Miller & Chapman, 2001). There was a significant difference between the acceptance and control conditions regarding the difference in believability that the intervention was a helpful strategy for social anxiety. This made the inclusion of this variable as a control variable inappropriate (Miller & Chapman, 2001). However, Miller and Chapman (2001) suggest that if the group itself does not cause the differences (e.g., if random assignment has occurred, rather than pre-existing groups in a quasi-experiment), then ANCOVA controlling for a difference may be appropriate but needs to be interpreted with caution. As such, in the first instance believability was not controlled, but if significant interactions were found, they were further analysed controlling for believability. As per the previous analyses, effect sizes were interpreted using the rule of thumb that a small effect equals .01, medium equals .09 and large equals .25 or above.

Actual-ought self-discrepancy. A moderate, significant main effect of time for the total actual-ought self-discrepancy score was found, $F(1, 51) = 14.56$, $p < .001$, *partial* $\eta^2 = .22$. Actual-ought self-discrepancy scores reduced significantly from pre-intervention ($M = 2.05$, $SD = .98$) to post-intervention ($M = .93$, $SD = 1.55$) for both conditions. This effect remained significant after Bonferroni correction was applied as $p < .003$. No main effect of condition nor significant time by condition

interaction was shown. Regarding the targeted actual-ought self-discrepancy characteristic, a significant, large main effect of time was observed whereby scores in both conditions reduced significantly from pre-intervention ($M = 3.57$, $SD = 1.30$) to post-intervention ($M = 1.02$, $SD = 1.96$), $F(1, 51) = 34.82$, $p < .001$, *partial* $\eta^2 = .41$. This effect also remained significant after Bonferroni correction was applied as $p < .003$. No main effect of condition, nor time by condition interaction was detected.

Fear of negative evaluation. There was a significant main effect of time with mean scores on fear of negative evaluation significantly reducing from pre-strategy ($M = 28.70$, $SD = 8.14$) to post-strategy ($M = 23.85$, $SD = 8.68$), $F(1, 51) = 6.33$, $p = .015$, *partial* $\eta^2 = .11$. The effect size was medium, however the effect was no longer significant after Bonferroni correction was applied as $p > .003$. No main effect of condition was found. A significant time by condition interaction was found with a moderate effect size, $F(1, 51) = 7.52$, $p = .008$, *partial* $\eta^2 = .13$. Although there was no significant difference between the two conditions at pre-intervention, at post-intervention, participants in the acceptance condition reduced fear of negative evaluation scores significantly more so than their control condition counterparts (see Figure 6.3). The effect approached significance after Bonferroni correction was applied. However, when controlling for believability that the intervention was helpful for social anxiety, the significant interaction was not maintained, $F(1, 48) = 3.60$, $p = .064$, *partial* $\eta^2 = .07$.
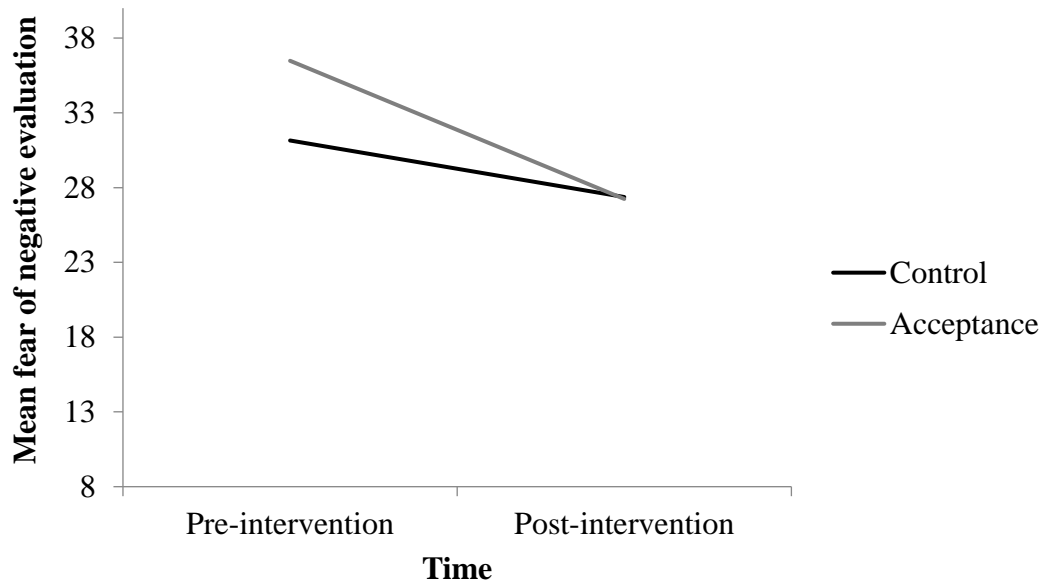
Figure 6.3. Mean fear of negative evaluation scores from pre-intervention to post-intervention, separated by condition, controlling for depression.

State anxiety. No significant main effects of time, condition, nor significant time by condition interaction on state anxiety were found.

Perception of speech performance. No significant main effects of time, condition, nor a significant time by condition interaction on perception of speech performance were detected.

Rumination. For rumination-agree, a moderate, significant main effect of time was shown, $F(1, 51) = 9.81$, $p = .003$, *partial* $\eta^2 = .16$. Participants agreed with more speech-related thoughts at pre-intervention ($M = 33.41$, $SD = 11.78$) than at post-intervention ($M = 27.11$, $SD = 12.44$). This effect approached significance after Bonferroni correction was applied as $p = .003$. There was no main effect of condition. A significant time by condition interaction on rumination-agree was observed, $F(1, 51) = 6.09$, $p = .017$, *partial* $\eta^2 = .11$, showing a medium effect (see Figure 6.4). However, this effect was no longer significant after Bonferroni

correction was applied as $p > .003$. A greater decrease in the rumination-agree scores

was observed from pre-intervention to post-intervention for the acceptance condition

compared to the control condition. Although slightly reduced, this moderate

interaction was maintained after controlling for believability that the strategy was

helpful for social anxiety, $F(1, 48) = 5.22$, $p = .027$, *partial* $\eta^2 = .10$ (see Figure 6.5).

However, the effect was no longer significant after Bonferroni correction was

applied as $p > .003$. Regarding rumination-distress, there was no significant main

effect of time, condition, nor a significant time by condition interaction. The main

effect of time, $F(1, 51) = 3.57$, $p = .065$, *partial* $\eta^2 = .065$, and the time by condition

interaction, $F(1, 48) = 3.99$, $p = .051$, *partial* $\eta^2 = .07$, did however approach
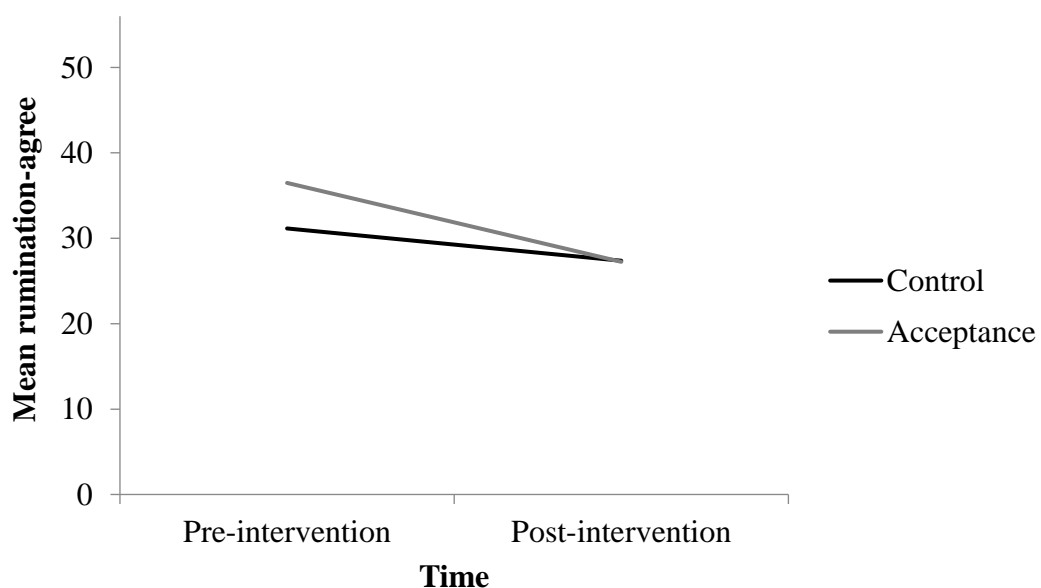
significance.

Figure 6.4. Mean rumination-agree scores from pre-intervention to post-

intervention, separated by condition, controlling for depression.
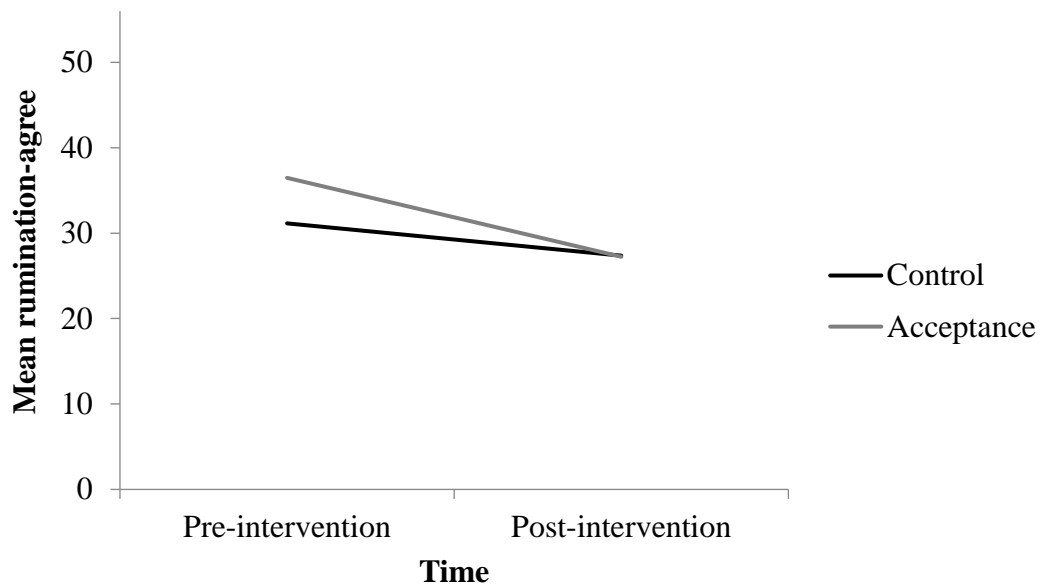
Figure 6.5. Mean rumination-agree scores from pre-intervention to post-intervention, separated by condition, controlling for depression and believability that the intervention was helpful for social anxiety.

Hypothesis 2b. To investigate whether those in the acceptance condition, when compared with the control condition had a reduction in rumination 24 hours after the in-person session, two 2 (post-intervention, 24 hours later) x 2 (control, acceptance) mixed ANCOVA's, controlling for depression were conducted (with Bonferroni correction being applied to any significant results [$p < .003$] to reduce Type I error) on the dependent variables of rumination-agree and rumination-distress. A moderate significant main effect of time was shown for rumination-agree, which reduced significantly from post-intervention ($M = 27.31$, $SD = 12.64$) to 24-hours later ($M = 21.33$, $SD = 13.26$), $F(1, 49) = 11.22$, $p = .002$, *partial* $\eta^2 = .19$. This effect remained significant after Bonferroni correction was applied as $p < .003$. However, no main effect of condition or time by condition interaction was observed. Similarly, a moderate to large main effect of time was shown for rumination-distress, which reduced significantly from post-intervention ($M = 23.74$, $SD = 14.51$)

to 24-hours later (M = 17.06, SD = 14.35), $F(1, 49)$ = 15.65, $p < .001$, *partial* η^2 =

.24. This effect also remained significant after Bonferroni correction was applied as

$p < .003$. No main effect of condition and no time by condition interaction was

found.

 Hypothesis 3. To evaluate whether changes in actual-ought self-discrepancy

predicted symptoms on the outcome measures of fear of negative evaluation, state

anxiety, and perception of speech performance at post-intervention, and rumination

at post-intervention and 24 hours after the laboratory session, a series of hierarchical

linear regressions were conducted. In separate regressions, pre-intervention scores

on the outcome measures were entered into Step 1, along with depression to control

for any variance attributed to this potential confound. Step 2 contained the total

actual-ought self-discrepancy change score (pre-intervention – post-intervention)

with the dependent variable being the post-intervention scores (and follow-up for

rumination) on the outcome measures. Results revealed that the change of the total

actual-ought self-discrepancy score from pre-intervention to post-intervention

significantly predicted post-intervention scores on fear of negative evaluation (ΔR^2 =

.08, $\Delta F(1, 76)$ = 12.51, β = -.28, p = .001), state anxiety (ΔR^2 = .16, $\Delta F(1, 76)$ =

30.41, β = -.41, $p < .001$), rumination-agree (ΔR^2 = .09, $\Delta F(1, 76)$ = 17.88, β = -.31,

$p < .001$), and rumination-distress (ΔR^2 = .09, $\Delta F(1, 76)$ = 15.31, β = -.30, $p < .001$).

However, change in actual-ought self-discrepancy did not significantly predict

perception of speech performance at post-intervention, or rumination-

agree/rumination-distress 24 hours after the in-person session ended.

 Next, a series of hierarchical linear regressions were conducted with the

change score for the targeted self-discrepancy characteristic (pre-intervention – post-

intervention) as the predictor. Again, pre-intervention scores on the outcome

measures were entered into Step 1, along with depression. The targeted self-discrepancy characteristic change score was entered in Step 2, and the dependent variables were the post-intervention (and follow-up for rumination) scores on the outcome measures. Results revealed that the change of the targeted self-discrepancy characteristic score from pre-intervention to post-intervention significantly predicted post-intervention scores on fear of negative evaluation ($\Delta R^2 = .06$, $\Delta F(1, 76) = 8.21$, $\beta = -.24$, $p = .005$), state anxiety ($\Delta R^2 = .10$, $\Delta F(1, 76) = 15.93$, $\beta = -.32$, $p < .001$), rumination-agree ($\Delta R^2 = .07$, $\Delta F(1, 76) = 13.37$, $\beta = -.28$, $p < .001$), and rumination-distress ($\Delta R^2 = .06$, $\Delta F(1, 76) = 9.97$, $\beta = -.25$, $p = .002$). The change in the targeted self-discrepancy characteristic score did not predict post-intervention perception of speech performance, or rumination-agree/rumination-distress 24 hours after the laboratory session.

Discussion

The primary goal of the current study was to examine the efficacy of two brief single-session interventions, namely cognitive restructuring and acceptance, specifically targeting actual-ought self-discrepancy. It was expected that the interventions would be effective at reducing actual-ought self-discrepancy, which in turn would reduce fear of negative evaluation, state anxiety, and rumination, and improve self-perception of performance rated to the speech.

Efficacy of Cognitive Restructuring on Outcome Measures

Contrary to the hypotheses, targeting the ought self through cognitive restructuring failed to lead to a significant reduction in actual-ought self-discrepancy, fear of negative evaluation, state anxiety or rumination when compared to the control condition. Further, participants who received cognitive restructuring also did not report a more positive perception of speech performance when

compared to the control condition. Unexpectedly, participants in both conditions rated their speech performance significantly *worse* following the second speech, than following the first speech. However, the finding that participants in both conditions rated themselves significantly worse following the second speech was no longer significant after Bonferroni correction was applied. This means that neither the cognitive restructuring nor the control condition reported a difference in perception of speech performance from the first to the second speech.

The results from the previous chapters demonstrated that actual-ought self-discrepancy influenced fear of negative evaluation, which influenced social anxiety, which in turn influenced rumination. As such, it was expected that targeting actual-ought self-discrepancy would also demonstrate significant reductions in fear of negative evaluation, state anxiety, and rumination. However, the reduction in self-discrepancy was comparable in both the cognitive restructuring and control conditions. This suggests that participants who receive cognitive restructuring failed to improve their actual-ought self-discrepancy compared to their counterparts in the control condition.

There are a few possibilities for the unsupported results. First, given that self-discrepancy is a personality-based construct, targeting self-discrepancy through a brief cognitive restructuring intervention with only one session may be insufficient to achieve outstanding changes. The study conducted by Shikatani et al. (2014) who investigated cognitive restructuring and mindfulness for rumination in social anxiety, also demonstrated that cognitive restructuring failed to reduce maladaptive beliefs about the self as measured by the Self-Beliefs Related to Social Anxiety Scale. Although the beliefs measured in this scale are not directly relevant to the actual-ought self-discrepancy (i.e., it measures excessively high standards for social

performance, conditional beliefs concerning social evaluation, and unconditional beliefs about the self), it does hold some similarities. For example, the unconditional beliefs about the self (e.g., 'people think I am inferior') indicates that that others consistently think negatively of oneself which could represent the actual self, and excessively high standards for performance (e.g., 'I need to be liked by everyone') indicates that one should attain a high standard of social approval which could represent the ought self even though the ought self is not necessarily *excessive* or 'perfectionistic' in its standard. However, positive outcomes have been shown for longer-term CBT interventions for actual-ideal self-discrepancy in depression (Strauman et al., 2001). As such, longer term interventions targeting actual-ought self-discrepancy (i.e., 12 sessions) using cognitive restructuring may lead to better outcomes of self-discrepancy reduction in social anxiety.

Second, the current study included two speeches which, albeit brief, provided participants with an element of exposure to a performance-based social situation. Some researchers have shown that cognitive restructuring and exposure were comparably effective as a stand-alone intervention for social anxiety (e.g., Acarturk et al., 2009; Powers et al., 2008). These researchers further suggest that each component of CBT may have its merit in the treatment of SAD, but the inclusion of exposure may be key to positive treatment outcomes. As both conditions received an element of exposure in the current study, this could explain why cognitive restructuring failed to produce better effects than the control condition.

Third, the control condition may have had some beneficial effects, which may equal the effects of the active condition. In the current study, participants in the control condition engaged in a game that required their full attention. This may have served as a short-term strategy to assist the participants to distract themselves from

their thoughts and feelings. Distraction may have reduced the accessibility of negative thoughts, fears, and anxiety, thereby reducing their distress. For example in a study examining rumination in social anxiety, Q. J. J. Wong and Moulds (2009) found that distraction decreased self-focus and anxiety in both high and low socially anxious individuals related to a speech task. Accordingly, a more 'pure' control, such as a waitlist control may serve as a better control condition and prevent such confounding effects.

The current study also expected a significant improvement in the perception of performance of those in the cognitive restructuring condition, comparative to control. However, the unexpected results, namely participants in both the control and cognitive restructuring conditions rated their performances significantly worse following the second speech, is puzzling. Higgins (1999) argued that the greater the accessibility of a self-discrepancy, the more negative affect will be experienced. As such, it is possible that through the comparison of the ought and actual selves, participants may have increased the accessibility of their self-discrepancies that resulted in an underestimation of their perceptions of performance, while the brief cognitive restructuring intervention had not yet initiated a change. However, this finding is preliminary as the subsequent Bonferroni correction revealed a non-significant difference from the first to second speech in participants' perceptions of performance. Nevertheless, future research should investigate the influence of a longer term cognitive restructuring intervention on perception of speech performance.

Efficacy of Acceptance on Outcome Measures

Contrary to expectation, participants in the acceptance condition did not reduce their discrepancy more than those in the control condition. To date, little was

known about how acceptance would influence actual-ought self-discrepancy in the context of social anxiety. Shikatani et al. (2014) who investigated mindfulness/acceptance and cognitive restructuring strategies for rumination in social anxiety found no significant different between mindfulness and control on the Self-Beliefs Reported in Social Anxiety Scale. The results from this study are in line with this. On the other hand, Crane et al. (2008) who investigated a longer-term mindfulness-based cognitive therapy intervention (8 weeks) on actual-ideal self-discrepancy for individuals in recovery from a depressive episode, found reductions in the actual-ideal self-discrepancy. The authors concluded that changes in the self-guide (i.e., ideal self), rather than changes in the actual self, may contribute to the treatment effects of mindfulness-based cognitive therapy for those vulnerable to depression. As such, a longer intervention and a greater focus on the ought self guide during the acceptance intervention may show a greater reduction in the actual-ought self-discrepancy.

As expected, participants in the acceptance condition reported greater reductions in fear of evaluation than those in the control condition, which continued to approach significance after Bonferroni correction was applied. However, when controlling for the participants' belief about the effectiveness of the intervention, the difference between the acceptance condition and the control condition on fear of negative evaluation failed to reach significance (prior to Bonferroni correction being applied). Although the interaction still approached significance, the effect size reduced from moderate to small. As such, the significant interaction may be attributed to non-specific treatment effects (e.g., receiving a believable treatment was effective, rather than receiving the acceptance intervention specifically), or demand effects (i.e., participants reducing symptoms because they felt they should).

Regarding state anxiety, in a previous study, England et al. (2012) found that 6 weeks of exposure plus acceptance was an effective strategy (in comparison to exposure plus habituation) for reducing public speaking anxiety. Inconsistent with England et al. (2012), in the current study, participants in the acceptance condition did not change their levels of state anxiety significantly from pre- to post-intervention comparative to the control condition. However, unlike England et al. (2012) who screened participants for social anxiety specific to public speaking, rather than a more generalised social anxiety (i.e., fears of both performance and interactional situations), the current study applied no strict criteria regarding the content of the social fears. In addition, the current study specifically targeted the actual-ought self-discrepancy to reduce anxiety and as per the cognitive restructuring condition, given that no significant change in the self-discrepancy comparative to control occurred, this may also explain the lack of change in state anxiety and perception of speech performance.

As predicted, participants ruminated significantly less at post-intervention in the acceptance condition than in the control condition. The significant effect and moderate effect size was maintained after controlling for the believability about the intervention, although this effect failed to reach significance after applying Bonferroni correction. In addition, although the levels of participants' distress about the thoughts did not reach significance it did approach significance, but not after Bonferroni correction was applied. However, there was no significant difference between the acceptance condition and the control condition in the rumination experienced 24 hours after the in-person session ended. These results suggest that acceptance specifically targeting self-discrepancy may be a useful strategy for reducing short-term ruminative thoughts, along with the distress associated with

such thoughts (i.e., measured immediately after the intervention). However, results should be interpreted with caution given that results did not remain significant after Bonferroni correction was applied and contrary to predictions, the longevity of this effect was not confirmed. Although it may be important to reduce the amount of ruminative thoughts that occur immediately following a social situation, given the ruminative thoughts experienced after a social event are considered as a maintenance factor for social anxiety (Brozovich & Heimberg, 2008; Clark & Wells, 1995; Heimberg et al., 2010), reducing rumination after the social situation and maintaining this over the long-term is preferable. Future studies should explore effective strategies to address this issue in the hours and days following a social situation (i.e., post-event rumination).

Self-Discrepancy as a Predictor of Change

Examining the association between the change in actual-ought self-discrepancy scores and the outcome measures revealed that the change in self-discrepancy for both total and targeted characteristics predicted the post-intervention scores on fear of negative evaluation, state anxiety and rumination. These findings are consistent with the theoretical underpinnings of self-discrepancy in social anxiety (e.g., J. Wong et al., 2014), and the theory of self-discrepancy (Higgins, 1987), whereby discrepant beliefs between what one thinks they should be and what one thinks they actually are leads to fear and anxiety. Looking at the changes in the scores overall for the actual-ought self-discrepancy from pre- to post-intervention, participants reduced their total self-discrepancy by approximately one scale point (i.e., from a discrepancy of approximately two points to a discrepancy of approximately one point), and their targeted characteristic discrepancy by approximately two and a half points (i.e., from approximately three and a half points

to approximately one point). Despite the non-significant changes between conditions, it is encouraging that the actual-ought self-discrepancy could reduce in such a short period of time. These results also encourage further investigation of longer term interventions for self-discrepancies in social anxiety in order to reduce fear, anxiety and negative cognitions.

Strengths and Limitations

This study used a randomised, controlled experimental design, with a sample of participants experiencing elevated levels of social anxiety. This study also demonstrated high internal validity as the protocol and instructions/answers given to participants were kept consistent through the use of only one experimenter. The use of a speech task to engage socially anxious participants in a social anxiety provoking situation encountered in real life was also a strength of the research. Further, the sample, although not clinical in terms of treatment seeking individuals in a clinic, was representative of a clinical sample with mean trait social anxiety scores in the current study ($M = 37.75 - 42.42$ on the SPIN), being almost as high as those presenting for treatment in previous studies (e.g., $M = 44.7$; Antony et al., 2006). Nevertheless, there are limitations to be considered.

Power analysis prior to conducting this study suggested that 30 participants per condition were needed to find medium effects. Therefore, with only 26 to 28 in each condition (due to difficulties with recruitment), the current study is likely to be underpowered to reach significance. However, studies using similar designs examining brief interventions for social anxiety (e.g., Shikatani et al., 2014) have included 15 to 22 in each condition, which has demonstrated significant small to medium effect sizes. Nevertheless, when a study is underpowered, it is useful to examine the size of the effects to make conclusions about the effectiveness of the

intervention strategies. Given that the effect sizes in the current study were mostly small, there is possibility that the strategies in such a brief setting are not efficacious. Thus, future research should include a bigger sample size and a more comprehensive intervention (e.g., an intervention over several sessions) in order to consolidate conclusions.

Participants' engagement in the intervention tasks was monitored by the researcher at designated points in the tasks. However, no formal measures of engagement in the tasks, nor measures of changes in cognitive restructuring or acceptance skills were used. As such, the current methodology does not allow for further interpretation of why the results in the active conditions, in most cases, were not different to the control condition. For example, the goal of acceptance is to change the relationship with thoughts, rather than changing the thoughts themselves. Without measuring the change in acceptance skills, or the change in the relationship with the self-discrepancy, it is impossible to understand whether the relationship to the discrepancy was altered for the acceptance condition compared to the control condition. Measuring the acceptance of the discrepancy would have given more insight about how the intervention affected participants.

Furthermore, only the rumination questionnaire was administered 24 hours after the laboratory session ended. Although this was purposefully designed to measure post-event rumination, other measures such as self-discrepancy and fear of evaluation could have been included at follow-up to determine whether there was reduction across time on these outcome measures in the active conditions compared to the control condition. Given the results showing that change in self-discrepancy predicted rumination at post-intervention, but not 24 hours after the study was completed, it would be useful to follow up the change over time on the other

outcome measures. Further, a longer-term follow-up, such as a 3-month follow-up, would provide more complete understanding of the longevity of a brief intervention targeting actual-ought self-discrepancy in social anxiety. Finally, in comparison to the acceptance condition, the believability of the control as an effective strategy was questioned by participants. Taking into account the possibility that the control condition may have served as an active control in the current study, either a placebo control or a waitlist control should be used in future research. Finally, literature on credible placebo conditions has suggested that using a Borkovec-style credibility/expectancy measure prior to the intervention actually occurring is best practice (Devilly & Borkovec, 2000). However, the current study measured the believability that the intervention was a helpful strategy after the intervention was administered. This is a limitation that should be rectified in future studies.

Theoretical and Clinical Implications

This study aimed to investigate the efficacy of brief cognitive restructuring and acceptance interventions targeting self-discrepancy in social anxiety. The study was designed to test the two interventions in a brief format to inform future investigations on longer-term interventions for social anxiety. Based on the preliminary results, the current study failed to find many benefits of targeting actual-ought self-discrepancy through such brief cognitive restructuring or acceptance-based interventions. Brief interventions, although shown to be efficacious for cognitive processing in social anxiety (e.g., rumination; Shikatani et al., 2014), may not be as effective for personality-based constructs such as self-discrepancy. The brief intervention may restrict the possibility of making a lasting change on self-discrepancy that would influence fear of evaluation, anxiety and rumination. As such, longer interventions may be needed to achieve the desired impact. However,

results did provide encouragement that a change in actual-ought self-discrepancy may predict changes in problematic features of social anxiety, such as fear of negative evaluation, state anxiety and short-term rumination, but further investigation is needed for the long-term effects.

According to Higgins (1999), increases in the accessibility of a discrepancy can lead to an increase in negative affect. The preliminary evidence from this study suggests that targeting actual-ought self-discrepancy through acceptance based interventions may reduce the quantity of ruminative thoughts in the short-term. By preventing over-engagement with the discrepancy through accepting and distancing from it, individuals may experience less ruminative thoughts which may in turn reduce individuals' re-engagement in the discrepancy during the next social situation, thus interrupting the cycle of the symptom maintenance. However, as described above, the longevity of this effect is not yet known and requires further investigation.

The preliminary findings from this study suggest that acceptance, rather than cognitive restructuring, may be a fruitful avenue for future studies considering modification of the actual-ought self-discrepancy[17]. However, limitations such as the use of a brief intervention, a non-clinical sample, and no follow-up of outcomes measures such as fear of negative evaluation, suggests that methodological improvements are needed upon further investigation of acceptance for targeting self-discrepancies. Future research should also consider conducting trials of acceptance using a longer intervention and a waitlist, or placebo condition, as a control condition. Further, future studies should also investigate the mechanism of change in

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[17]Although the aim of this study was to compare cognitive restructuring with control, and acceptance with control separately, and acceptance outperformed cognitive restructuring, supplementary analyses comparing the cognitive restructuring and acceptance conditions directly revealed that no significant difference emerged between the two active conditions.

self-discrepancy, such as the reduction of the accessibility of the self-discrepancy through 'letting go' of the discrepancy. Nevertheless, the preliminary data from this study provide the first-hand empirical evidence supporting the potential benefits of acceptance in targeting the actual-ought self-discrepancy in order to reduce social anxiety symptoms and cognitive processing such as fear of negative evaluation, state anxiety and short-term rumination.

CHAPTER 7: General Discussion

This thesis explored self-discrepancies, which is consistent with the conceptualisation of discrepant beliefs about the self across the models of SAD (J. Wong et al., 2014), as a potential underlying mechanism of fear of evaluation in social anxiety. Drawing on knowledge from the cognitive behavioural models of SAD (Clark & Wells, 1995; Heimberg et al., 2010; Hofmann, 2007; Leary, 2014; Moscovitch, 2009; Stopa, 2009; Weeks & Howell, 2012), and self-discrepancy theory (Higgins, 1987) and its extension (Carver et al., 1999), the first three studies explored an integrated model of social anxiety whereby actual-ought and actual-feared self-discrepancies were implicated as causal factors for fear of negative and positive evaluation. Model testing was conducted across three individual social situations using cross-sectional and sequential data, namely a general non-specific social situation, a naturalistic class presentation and an individual speech task. The consistent findings from these investigations suggest that the discrepancy between what one believes they should be in a social situation compared to what one believes they actually are in a social situation, namely the actual-ought self-discrepancy, influences fear of negative evaluation, which in turn influences social anxiety, and its subsequent cognitive process, namely rumination. On the basis of these findings, Chapter 6 explored two brief interventions, namely cognitive restructuring and acceptance, specifically targeting actual-ought self-discrepancy, to reduce the self-discrepancy, fear of negative evaluation, state social anxiety, and rumination. Overall, results showed that compared to the control condition, the acceptance intervention targeting actual-ought self-discrepancy was a more effective approach for reducing fear of negative evaluation and rumination while this was not seen in the cognitive restructuring intervention.

Overall, the present research provides some interesting insights about self-discrepancies in social anxiety. In particular, findings from the present research provide answers to two main questions 1) is self-discrepancy key to fear of evaluation in social anxiety, and 2) which psychological interventions can be used to reduce actual-ought self-discrepancy and in turn reduce fear of evaluation, social anxiety, and rumination. As such, the insights gained from this PhD thesis have both theoretical and practical applications. In this final chapter the implications and key contributions of the findings in this thesis to both theory and clinical practice, together with suggested avenues for future research, are discussed.

Theoretical Contributions and Future Directions

Findings from Chapters 2, 3, and 4 provided insights into the question regarding whether self-discrepancy is key to evaluation fears in social anxiety. Through the model testing the most consistent support was found for the actual-ought self-discrepancy as a key factor that influences fear of negative evaluation, whereas results were less clear about the actual-ought self-discrepancy to fear of positive evaluation, and actual-feared self-discrepancy to fear of negative evaluation relationships. These findings contribute to a) the literature by demonstrating the importance of the self in social anxiety, and integrating self-discrepancy theory to social anxiety, and b) the cognitive behavioural models of SAD by highlighting the role of self-discrepancy. However, the findings also need to be interpretation with caution given the cross-sectional and sequential designs used. Further investigation using a strict longitudinal design is needed in order to confirm these contributions.

As introduced in Chapter 1, due to the higher order processes of the self (e.g., self-awareness) those with social anxiety may perceive that they are being evaluated negatively even when there might not be evaluation actually taking place (Leary,

2004). That is, it is distorted perceptions of the self that may fuel the fear of negative evaluation (Leary, 2004). Findings from this PhD thesis that actual-ought self-discrepancy may be a specific self-related process that is relevant to fear of negative evaluation in social anxiety contributes to the establishment of the role of the self in social anxiety, suggesting that the self is indeed a concept that should be given due consideration in social anxiety. According to Leary (2004) the self is the factor that enables one to feel socially anxious as they imagine that they are being perceived in a particular way by others. Further, without the self one cannot worry that the kind of impression they may be making on others is discrepant from what they believe others expect (Leary, 2004). Therefore, in order to better understand social anxiety, understanding the disturbances that occur within a person's sense of self, such as discrepant beliefs about the self, is important. Therefore, the current research provides an integrated perspective on social anxiety that incorporates both social-personality (i.e., self-discrepancy theory) and clinical psychology perspectives which further supports the importance of understanding social anxiety within the context of the self, particularly self-discrepancy, and how this impacts on fear of evaluation.

The cognitive behavioural model of SAD by Heimberg et al. (2010) proposes that discrepant beliefs about the self lead to both fear of negative and positive evaluation. The current findings both support and contrast Heimberg et al.'s (2010) model. For example, Heimberg et al.'s (2010) suggests that it is the comparison of the mental representation of the self as seen by the audience and the appraisal of the audiences expected standards that leads to the judgement of the probability and consequences of evaluation (*any* evaluation) from the audience. This can be interpreted as similar to the actual-ought self-discrepancy in leading to fear of

negative and fear of positive evaluation. The results from the model testing in this thesis certainly support this relationship with regard to negative evaluation, but raise questions regarding fear of positive evaluation. That is, actual-ought self-discrepancy may not be underlying both fears of evaluation, but instead may only be underlying fear of negative evaluation.

Despite strong support for the inclusion of fear of positive evaluation in social anxiety research (e.g., Weeks & Howell, 2014), the actual-ought self-discrepancy to fear of positive evaluation relationship was not consistently supported across the model testing in this thesis. According to the underlying theory of fear of positive evaluation put forth by Gilbert (2001), those with social anxiety fear positive evaluation because of increased standards for future social performance. However, in Study 2 and 3, only one presentation/speech task was used as a manipulation of anxiety. This methodology did not allow for investigations about fear of positive evaluation being due to possibly increased standards for future social performance. Future research investigating the actual-ought self-discrepancy to fear of positive evaluation relationship is encouraged to consider using a second social situation to allow assessments of potential fear of positive evaluation. In particular, given the theoretical underpinnings for fear of positive evaluation, a manipulation to increase the actual-ought self-discrepancy such as providing positive feedback, may lead to a better understanding of the process through which these constructs are related. Further, it may be informative to collect qualitative data regarding why those with social anxiety fear positive evaluation in a social situation and then use this information to more comprehensively understand the actual-ought self-discrepancy and fear of positive evaluation relationship.

On the other hand, there is also the possibility that there are different underlying mechanisms for each fear of evaluation separately, rather than one that influences both fear of negative and positive evaluation (e.g. actual-ought self-discrepancy). This also awaits future investigations. Interestingly, of the two studies that adapted the fear of positive evaluation measure to a state-based measure, Study 2 found sex differences on the state-based measure, a result that is inconsistent with the literature, and results found in Study 1 and Study 3. Although it was suggested that the adaptation of the trait measure to the state measure may have led to the inconsistent finding in Study 2, given that there was no such sex difference found on state fear of positive evaluation in Study 3, the possible explanation for this difference could be due to other factors such as the situational context of the study. For example, Study 2 involved a class presentation in front of peers, whereas Study 3 involved an individual presentation in front of a video camera. Such context may provoke greater fear of positive evaluation for females than males. Future research should consider factors that may potentially influence gender in the investigation of fear of positive evaluation.

The findings of the model testing unequivocally supported the bivalent fear approach to social anxiety (Weeks & Howell, 2012), demonstrating that both fear of negative and positive evaluation influenced trait and state anxiety. This is helpful in understanding the motivations of socially anxious individuals, particularly with regard to their attempts to avoid the spotlight (Gilbert, 2001). For example, as suggested by Gilbert (2001), avoiding the spotlight involves simultaneously avoiding being seen as too good and not good enough, which is perceived to protect against possible exclusion from the social group, and higher expectations for the future. Results from this thesis demonstrating that both fears lead to social anxiety

certainly supports this proposition and supports that those with social anxiety may prefer not be evaluated at all (Weeks & Howell, 2014). However, given that research on fear of positive evaluation is in its infancy (Heimberg et al., 2010), investigation is needed not only to explore the role of fear of positive evaluation in social anxiety generally (i.e., how it relates to the anxiety itself), but also to better understand its underlying mechanisms. Based on the results found in this PhD thesis, while fear of positive evaluation does play a role in social anxiety, actual-ought self-discrepancy may not underlie this fear. Hence, other potential underlying mechanisms of fear of positive evaluation should be further explored.

With regard to the relationship between actual-feared self-discrepancy and fear of negative evaluation, Moscovitch (2009) described that negative evaluation is a perceived consequence of feared self-attributes (i.e., the feared self) being exposed in a social situation. The findings in the current thesis contrast Moscovitch (2009) by demonstrating that it is actual-ought self-discrepancy rather than actual-feared self-discrepancy that is most important to fear of negative evaluation, at least within the context of the studies conducted in the current research. As such it seems that rather than the attributes of the feared self being problematic for fear of negative evaluation, it is the attributes of the ought self, and not being able to display these (i.e., not meet the ought self standard) that may cause fear.

To date, the previous literature has raised some questions about the unique applicability of actual-ought self-discrepancy to social anxiety. For example, it has been suggested that actual-ought self-discrepancy has relevance for both anxiety- and depression-related affect rather than unique relevance to anxiety-related affect (e.g., Rodebaugh & Donahue, 2007; Tangney et al., 1998). This suggestion highlighted the need for depression to be considered when conducting research into

the actual-ought self-discrepancy to ensure that any effects between this discrepancy and social anxiety were not due to the influence of depression. In the current thesis, depression was controlled in the investigation of the proposed models which gives confidence that the results are due to the unique relationship between actual-ought self-discrepancy and social anxiety rather than a reflection of any influence of depression. Therefore, the results from the model testing not only provide information toward answering the question about whether self-discrepancies are key to fear of evaluation in social anxiety but also contribute to the self-discrepancy literature by demonstrating the unique contribution of actual-ought self-discrepancy in social anxiety.

Taken together, the present research provides evidence supporting the notion proposed across the cognitive behavioural models of SAD that discrepant beliefs about the self are problematic in social anxiety. Based on the findings of the present research, a proposal of a potential theoretical model involving actual-ought self-discrepancy, fear of evaluation, social anxiety, and rumination can be generated as below (Figure 7.1).
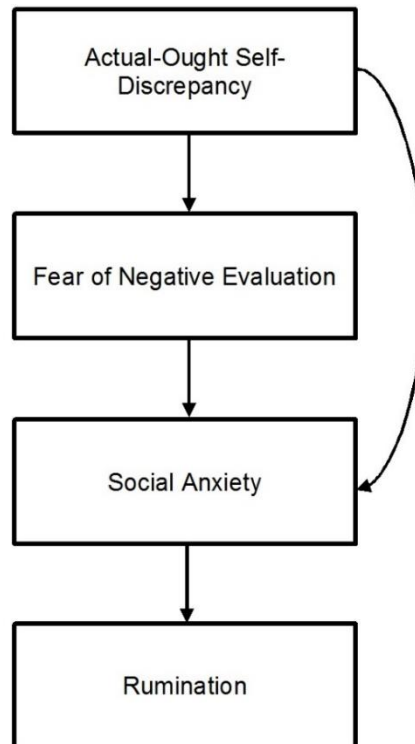
Figure 7.1 Final theoretical model of self-discrepancy in fear of evaluation, social anxiety, and rumination.

The model presented is however somewhat simplistic, and there are other factors that may need to be considered within such a model. For example, rumination is not the only cognitive process that is said to maintain the vicious cycle of social anxiety. Other cognitive processes such as avoidance (both physical and the use of cognitive avoidance strategies such as safety behaviours), attentional bias, and interpretation bias could be considered in such a model. For example, in Clark and Wells (1995) cognitive model of SAD, 'safety behaviours', which is covert in-situation cognitive avoidance strategies (e.g., avoidance of eye contact, reduced participation in conversations), are depicted as resulting from the perception of social threat. Heimberg et al. (2010) further proposes both overt and covert behavioural avoidance strategies (e.g., escaping a social situation and in-situation safety behaviours) are employed by those with social anxiety when they perceive that negative evaluation by others is likely. Likewise, Hofmann (2007) proposes that

overt avoidance and the use of safety behaviours maintains social anxiety due to it creating a positive feedback loop (i.e., safety behaviours are perceived by the socially anxious individual as the reason why negative evaluation did not occur). Given the support for the inclusion of the actual-ought self-discrepancy in the current thesis, exploring the relationships between actual-ought self-discrepancy and the other factors in social situations would provide further depth to a model like the one proposed above (Figure 7.1).

Practical and Clinical Implications and Future Directions

Following their systematic review and network meta-analysis of the psychological and pharmacological interventions for social anxiety disorder, Mayo-Wilson et al. (2014) argued that although social anxiety disorder responds well to treatment, many people continue to experience symptoms after the end of the acute treatment phase. As such, treatment efficacy in social anxiety has room for improvement. Kyrios et al. (2016) recently suggested that considering the self as a therapeutic target for focused psychological techniques could be an important way forward in enhancing current treatments. Further, these authors suggested that those working with clinical populations should consider the degree of incongruence in self-attributes and how they contribute to emotional disturbances. As such, findings from the current thesis have important clinical repercussions regarding decreasing one of the core fears in social anxiety, fear of negative evaluation, by targeting the incongruence between one's actual and one's ought self which may play an integral role in improvements for social anxiety interventions. In relation to this, to answer the second main question regarding which psychological interventions can be used to target self-discrepancy and reduce fear of evaluation, social anxiety, and

rumination, two brief interventions, namely cognitive restructuring and acceptance, were explored.

The cognitive restructuring intervention failed to show significant results above control, whereas the results of acceptance were relatively more encouraging, albeit limited. This suggests that targeting the actual-ought self-discrepancy through acceptance may lead to a significant reduction in short-term negative ruminative thoughts, and a trend of reduction in fear of negative evaluation. The brief nature of the cognitive restructuring and acceptance interventions, along with other limitations such as low power of the study make it difficult to draw a solid conclusion from the current findings. However, significant change in fear of evaluation (significant trend), and rumination as a consequence of targeting self-discrepancy through the acceptance intervention suggests the potential effects of this strategy. Given that such a brief, 12-minute session of mindfulness breathing, noticing thoughts, and acceptance of the discrepancy provided these benefits to participants, albeit with small-medium effect sizes, the results are somewhat encouraging. However, it should be noted that the primary objective was to reduce fear of evaluation, and this was limited to a trend only. The simplicity and brevity of the two interventions might lend itself to specific applications such as delivery by those with less professional training (as has been shown for other treatments such as a brief behavioural activation e.g., Ekers, Richards, McMillan, Bland, & Gilbody, 2011), which may provide a possible first step in low intensity or stepped care programs. Given the potential of the results in Study 4 of this thesis, future studies including acceptance to target actual-ought self-discrepancy with larger samples appears warranted. In addition, the current thesis adds to a small existing body of literature that has attempted to extend the use of acceptance strategies and cognitive

techniques for actual-ought self-discrepancy intervention (e.g., Crane et al., 2008; Strauman et al., 2001).

Results from the current thesis will help to inform techniques that are most promising for further intervention development. Although a useful and informative methodological approach to assess change in constructs, the current exploration of acceptance as a treatment approach for self-discrepancy used a typical pre- and post-methodology. Further information regarding within treatment changes is also important, that is, the processes that predict successful treatment outcomes. Such information is useful to help deepen the understanding of how, when, and why treatment influences self-discrepancy in social anxiety. Finally, to better understand self-discrepancy in social anxiety future treatment research is also encouraged to focus on not only the discrepancy (between the ought and actual selves) itself, but also the 'structure' of the discrepancy, that is how the discrepancy is formed, stored, organised, and retrieved (Stopa, 2009). Stopa (2009) argues that we often do not capture the full complexity of self-related constructs because we only look at, for example, the content. Understanding both the content of the discrepancy and the structure of the discrepancy, would provide a more complete understanding of the self-discrepancy. This may lead to more specific interventions for social anxiety, and greater improvements in symptoms.

Conclusion

In conclusion, this PhD thesis presents a systematic examination of the role of self-discrepancy in contributing to social anxiety, specifically, fear of negative and positive evaluations, trait and state social anxiety, and its subsequent cognitive process, rumination. Although there were mixed results regarding the actual-ought self-discrepancy to fear of positive evaluation and actual-feared self-discrepancy to

fear of negative evaluation, support was found for the role of actual-ought self-discrepancy in influencing fear of negative evaluation, social anxiety, and rumination. In addition, the brief intervention of acceptance, specifically targeting the actual-ought self-discrepancy was shown to be a potential avenue for future exploration in order to reduce fear of negative evaluation and rumination in social anxiety. As with any research program these findings require replication with improved methodology. Despite limitations, the knowledge gained from the present research adds to the current literature about the self in social anxiety, the cognitive behavioural models of social anxiety, self-discrepancy theory, and to the clinical treatment literature. Of late there is greater attention being paid to the self as a therapeutic target for improving outcomes and decreasing relapse and vulnerability to various psychological disorders (Kyrios et al., 2016). In particular, research in social anxiety seems to be making good headway of this approach to treatment and the continuation of this approach is encouraged. Further investigating and targeting aspects of self-content, such as the actual-ought self-discrepancy, along with the self-structure of such self-related constructs presents an exciting avenue for future research.

References

Abbott, M. J., & Rapee, R. M. (2004). Post-event rumination and negative self-appraisal in social phobia before and after treatment. *Journal of Abnormal Psychology, 113*(1), 136-144. doi:10.1037/0021-843X.113.1.136

Acarturk, C., Cuijpers, P., van Straten, A., & de Graaf, R. (2009). Psychological treatment of social anxiety disorder: A meta-analysis. *Psychological Medicine, 39*(2), 241-254. doi:10.1017/S0033291708003590

Alden, L. E., & Taylor, C. T. (2010). Interpersonal processes in social anxiety disorder. In J. G. Beck (Ed.), *Interpersonal processes in the anxiety disorders: Implications for understanding psychopathology and treatment* (pp. 125-152). Washington, DC: American Psychological Association.

Alden, L. E., Taylor, C. T., Mellings, T. M. J. B., & Laposa, J. M. (2008). Social anxiety and the interpretation of positive social events. *Journal of Anxiety Disorders, 22*(4), 577-590. doi:10.1016/j.janxdis.2007.05.007

American Psychiatric Association. (1968). *Diagnostic and statistical manual of mental disorders* (2nd ed.). Washington, DC: Author.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment, 10*(2), 176-181. doi:10.1037/1040-3590.10.2.176

Antony, M. M., Coons, M. J., McCabe, R. E., Ashbaugh, A., & Swinson, R. P. (2006). Psychometric properties of the Social Phobia Inventory: Further evaluation. *Behaviour Research and Therapy, 44*(8), 1177-1185. doi:10.1016/j.brat.2005.08.013

Arch, J., Eifert, G. H., Davies, C., Plumb-Vilardaga, J. C., Rose, R. D., & Craske, M. G. (2012). Randomized clinical trial of cognitive behavioral therapy (CBT) versus acceptance and commitment therapy (ACT) for mixed anxiety disorders. *Journal of Consulting and Clinical Psychology, 80*(5), 750-765. doi:10.1037/a0028310

Australian Bureau of Statistics. (2007). *National Survey of Mental Health and Wellbeing: Summary of results*. (4326.0). Australia: Author.

Australian Bureau of Statistics. (2016). *Australian Standard Classification of Cultural and Ethnic Groups (ASCCED)*. (1249.0). Australia: Author.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497-529. doi:10.1037/0033-2909.117.3.497

Baumeister, R. F., & Tice, D. M. (1990). Point-counterpoints: Anxiety and social exclusion. *Journal of Social and Clinical Psychology, 9*(2), 165-195. doi:10.1521/jscp.1990.9.2.165

Beck, J. S. (2011). *Cognitive behavior therapy: Basics and beyond* (2nd ed.). New York, NY: The Guilford Press.

Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods and Research, 10*(2), 141-163. doi:10.1177/004912418101000205

Bizman, A., Yinon, Y., & Krotman, S. (2001). Group-based emotional distress: An

    extension of self-discrepancy theory. *Personality and Social Psychology*

    Bulletin, 27(10), 1291-1300. doi:10.1177/01461672012710005

Boden, M. T., John, O. P., Goldin, P. R., Werner, K., Heimberg, R. G., & Gross, J. J.

    (2012). The role of maladaptive beliefs in cognitive behavioral therapy:

    Evidence from social anxiety disorder. *Behaviour Research and Therapy,*

    50(5), 287-291. doi:10.1016/j.brat.2012.02.007

Bögels, S. M., Wijts, P., Oort, F. J., & Sallaerts, S. J. (2014). Psychodynamic

    psychotherapy versus cognitive behavior therapy for social anxiety disorder:

    An efficacy and partial effectiveness trial. *Depression and Anxiety, 31*(5),

    363-373. doi:10.1002/da.22246

Boldero, J., & Francis, J. (2000). The relation between self-discrepancies and

    emotion: The moderating roles of self-guide importance, location relevance,

    and social self-domain centrality. *Journal of Personality and Social*

    Psychology, 78(1), 38-52. doi:10.1037/0022-3514.78.1.38

Brozovich, F., & Heimberg, R. G. (2008). An analysis of post-event processing in

    social anxiety disorder. *Clinical Psychology Review, 28*(6), 891-903.

    doi:10.1016/j.cpr.2008.01.002

Brozovich, F., & Heimberg, R. G. (2011). The relationship of post-event processing

    to self-evaluation of performance in social anxiety. *Behavior Therapy, 42*(2),

    224-235. doi:10.1016/j.beth.2010.08.005

Bruch, M. A., Rivet, K. M., & Laurenti, H. J. (2000). Type of self-discrepancy and

    relationships to components of the tripartite model of emotional distress.

    Personality and Individual Differences, 29(1), 37-44. doi:10.1016/S0191-

    8869(99)00176-2

Carver, C. S., Lawrence, J. W., & Scheier, M. F. (1999). Self-discrepancies and affect: Incorporating the role of feared selves. *Personality and Social Psychology Bulletin, 25*(7), 783-792. doi:10.1177/0146167299025007002

Carver, C. S., & Scheier, M. F. (2001). *On the self-regulation of behavior*. New York, NY: Cambridge University Press.

Chen, J., Rapee, R. M., & Abbott, M. J. (2013). Mediators of the relationship between social anxiety and post-event rumination. *Journal of Anxiety Disorders, 27*(1), 1-8. doi:10.1016/j.janxdis.2012.10.008

Clark, D. M. (2001). A cognitive perspective on social phobia. In W. R. Crozier & L. E. Alden (Eds.), *International handbook of social anxiety: Concepts, research and interventions relating to the self and shyness* (pp. 405-430). New York: Wiley.

Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 69-93). New York, NY: The Guilford Press.

Cole, D. A., & Maxwell, S. E. (2003). Testing mediation models with longitudinal data: Questions and tips in the use of structural equation modelling. *Journal of Abnormal Psychology, 112*(4), 558-577. doi: 10.1037/0021-843X.112.4.558

Coles, M. E., Turk, C. L., Heimberg, R. G., & Fresco, D. M. (2001). Effects of varying levels of anxiety within social situations: Relationship to memory perspective and attributions in social phobia. *Behaviour Research and Therapy, 39*(6), 651-665. doi:10.1016/S0005-7967(00)00035-8

Connor, K. M., Davidson, J. R. T., Churchill, L. E., Sherwood, A., Weisler, R. H., & Foa, E. (2000). Psychometric properties of the Social Phobia Inventory (SPIN). *The British Journal of Psychiatry, 176*(4), 379-386. doi:10.1192/bjp.176.4.379

Connor, K. M., Kobak, K. A., Churchill, L. E., Katzelnick, D., & Davidson, J. R. (2001). Mini-SPIN: A brief screening assessment for generalized social anxiety disorder. *Depression and Anxiety, 14*(2), 137-140. doi:10.1002/da.1055

Couper, M. P., Tourangeau, R., & Conrad, F. G. (2006). Evaluating the effectiveness of visual analog scales: A web experiment. *Social Science Computer Review, 24*(2), 227-245. doi:10.1177/0894439305281503

Crane, C., Barnhofer, T., Duggan, D. S., Hepburn, S., Fennell, M. V., & Williams, J. M. G. (2008). Mindfulness-based cognitive therapy and self-discrepancy in recovered depressed patients with a history of depression and suicidality. *Cognitive Therapy and Research, 32*(6), 775-787. doi:10.1007/s10608-008-9193-y

Crome, E., Grove, R., Baillie, A. J., Sunderland, M., Teesson, M., & Slade, T. (2015). DSM-IV and DSM-5 social anxiety disorder in the Australian community. *Australian and New Zealand Journal of Psychiatry, 49*(3), 227-235. doi:10.1177/0004867414546699

Darlington, R. B., & Hayes, A. F. (2017). *Regression analysis and linear models: Concepts, applications, and implementation*. New York, NY: The Guilford Press.

Department of Health. (2016). Centre for clinical intervention: Psychotherapy, research, training. Retrieved from http://www.cci.health.wa.gov.au/resources/consumers.cfm

Devilly, G. J., & Borkovec, T. D. (2000). Psychometric properties of the credibility/expectancy questionnaire. Journal of Behavior Therapy and Experimental Psychiatry, 31(2), 73-86. doi: 10.1016/S0005-7916(00)00012-4

Edwards, S. L., Rapee, R. M., & Franklin, J. (2003). Postevent rumination and recall bias for a social performance event in high and low socially anxious individuals. *Cognitive Therapy and Research, 27*(6), 603-617. doi:10.1023/A:1026395526858

Ekers, D., Richards, D., McMillan, D., Bland, J. M., & Gilbody, S. (2011). Behavioural activation delivered by the non-specialist: Phase II randomised controlled trial. *The British Journal of Psychiatry, 198*(1), 66-72. doi:10.1192/bjp.bp.110.079111

England, E. L., Herbert, J. D., Forman, E. M., Rabin, S. J., Juarascio, A., & Goldstein, S. P. (2012). Acceptance-based exposure therapy for public speaking anxiety. *Journal of Contextual Behavioral Science, 1*(1-2), 66-72. doi:10.1016/j.jcbs.2012.07.001

Fehm, L., Hoyer, J., Schneider, G., Lindemann, C., & Klusmann, U. (2008). Assessing post-event processing after social situations: A measure based on the cognitive model for social phobia. *Anxiety, Stress, and Coping, 21*(2), 129-142. doi:10.1080/10615800701424672

Fehm, L., Schneider, G., & Hoyer, J. (2007). Is post-event processing specific for

    social anxiety? *Journal of Behavior Therapy and Experimental Psychiatry,*

    38(1), 11-22. doi:10.1016/j.jbtep.2006.02.004

Fergus, T. A., Valentiner, D. P., McGrath, P. B., Stephenson, K., Gier, S., & Jencius,

    S. (2009). The Fear of Positive Evaluation Scale: Psychometric properties in

    a clinical sample. *Journal of Anxiety Disorders, 23*(8), 1177-1183.

    doi:10.1016/j.janxdis.2009.07.024

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. London, UK:

    Sage.

First, M. B., Gibbon, M., Spitzer, R. L., & Williams, J. B. W. (1997). *Structured*

    Clinical Interview for DSM-IV Axis I disorders (SCID-I). Washington, D.C:

    American Psychiatric Press

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to

    corrective information. *Psychological Bulletin, 99*(1), 20-35.

    doi:10.1037/0033-2909.99.1.20

Forman, E. M., Herbert, J. D., Moitra, E., Yeomans, P. D., & Geller, P. A. (2007). A

    randomized controlled effectiveness trial of acceptance and commitment

    therapy and cognitive therapy for anxiety and depression. *Behavior*

    Modification, 31(6), 772-799. doi:10.1177/0145445507302202

Furmark, T. (2002). Social phobia: Overview of community surveys. *Acta*

    Psychiatrica Scandinavica, 105(2), 84-93. doi:10.1034/j.1600-

    0447.2002.1r103.x

Gee, B. A., (2010). The efficacy of cognitive restructuring and mindfulness

    strategies in reducing postevent processing among socially anxious

individuals. Retrieved from RULA Digital Dissertations
(http://digital.library.ryerson.ca/islandora/object/RULA%3A2620)

Gilbert, P. (2001). Evolutionary approaches to psychopathology: The role of natural defences. *The Australian and New Zealand Journal of Psychiatry, 35*(1), 17-27. doi:10.1046/j.1440-1614.2001.00856.x

Goldin, P. R., Ziv, M., Jazaieri, H., Hahn, K., Heimberg, R. G., & Gross, J. J. (2013). Impact of cognitive-behavioral therapy for social anxiety disorder on the neural dynamics of cognitive reappraisal of negative self-beliefs. *JAMA Psychiatry, 70*(10), 1048-1056. doi:10.1001/jamapsychiatry.2013.234

Gregory, B., & Peters, L. (2016). Changes in the self during cognitive behavioural therapy for social anxiety disorder: A systematic review. *Clinical Psychology Review, 23*(5), 1-18. doi:10.1016/j.cpr.2016.11.008

Harris, R. (2009). *ACT made simple: An easy-to-read primer on acceptance and commitment therapy*. Oakland, CA: New Harbinger Publications.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis*. New York, NY: The Guilford Press.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy, 44*(1), 1-25. doi:10.1016/j.brat.2005.06.006

Hayes, A. F., & Rockwood, N. J. (in press, online 2016). Regression-based statistical mediation and moderation analysis in clinical research: Observations, recommendations, and implementation. *Behaviour Research and Therapy*, 1-19. doi: 10.1016/j.brat.2016.11.001

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York, NY: Guilford Press.

Heimberg, R. G. (2002). Cognitive-behavioral therapy for social anxiety disorder: Current status and future directions. *Biological Psychiatry, 51*(1), 101-108. doi:10.1016/S0006-3223(01)01183-0

Heimberg, R. G., & Becker, R. E. (2002). *Cognitive-behavioral group therapy for social phobia: Basic mechanisms and clinical strategies*. New York, NY: The Guilford Press.

Heimberg, R. G., Brozovich, F. A., & Rapee, R. M. (2010). A cognitive behavioral model of social anxiety disorder: Update and extension. In S. G. Hofmann & P. M. DiBartolo (Eds.), *Social anxiety: Clinical, developmental, and social perspectives* (2nd ed., pp. 395-422). London: Elsevier.

Heppen, J. B., & Ogilvie, D. M. (2003). Predicting affect from global self-discrepancies: The dual role of the undesired self. *Journal of Social and Clinical Psychology, 22*(4), 347-368. doi:10.1521/jscp.22.4.347.22898

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*(3), 319-340. doi:10.1037/0033-295X.94.3.319

Higgins, E. T. (1999). When do self-discrepancies have specific relations to emotions? The second-generation questions of Tangney, Niedenthal, Covert, and Barlow (1998). *Journal of Personality and Social Psychology, 77*(6), 1313-1317. doi:10.1037//0022-3514.77.6.1313

Higgins, E. T., Bond, R. N., Klein, R., & Strauman, T. (1986). Self-discrepancies and emotional vulnerability: How magnitude, accessibility, and type of

discrepancy influence affect. *Journal of Personality and Social Psychology, 51*(1), 5-15. doi:10.1037/0022-3514.51.1.5

Higgins, E. T., Klein, R., & Strauman, T. (1985). Self-concept discrepancy theory: A psychological model for distinguishing among different aspects of depression and anxiety. *Social Cognition, 3*(1), 51-76. doi:10.1521/soco.1985.3.1.51

Hofmann, S. G. (2007). Cognitive factors that maintain social anxiety disorder: A comprehensive model and its treatment implications. *Cognitive Behaviour Therapy, 36*(4), 193-209. doi:10.1080/16506070701421313

Hofmann, S. G., & Bögels, S. M. (2006). Recent advances in the treatment of social phobia: Introduction to the special issue. *Journal of Cognitive Psychotherapy, 20*(1), 3-5. doi:10.1891/jcop.20.1.3

Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 78*(2), 169-183. doi:10.1037/a0018555

Hofmann, S. G., & Scepkowski, L. A. (2006). Social self-reappraisal therapy for social phobia: Preliminary findings. *Journal of Cognitive Psychotherapy, 20*(1), 45-57. doi:10.1891/jcop.20.1.45

Hong, R. Y., Triyono, W., & Ong, P. S. (2013). When being discrepant from one's ideal or ought selves hurts: The moderating role of neuroticism. *European Journal of Personality, 27*(3), 256-270. doi:10.1002/per.1888

Horley, K., Williams, L. M., Gonsalvez, C., & Gordon, E. (2004). Face to face: Visual scanpath evidence for abnormal processing of facial expressions in social phobia. *Psychiatry Research, 127*(1-2), 43-53. doi:10.1016/j.psychres.2004.02.016

Johns, A., & Peters, L. (2012). Self-discrepancies and the situational domains of

    social phobia. *Behaviour Change, 29*(2), 109-125. doi:10.1017/bec.2012.1

Kocovski, N. L., Fleming, J. E., Hawley, L. L., Huta, V., & Antony, M. M. (2013).

    Mindfulness and acceptance-based group therapy versus traditional cognitive

    behavioral group therapy for social anxiety disorder: A randomized

    controlled trial. *Behaviour Research and Therapy, 51*(12).

    doi:10.1016/j.brat.2013.10.007

Kyrios, M., Moulding, R., Bhar, S. S., Doron, G., Nedeljkovic, M., & Mikulincer,

    M. (2016). Future directions in examining the self in psychological disorders.

    In M. Kyrios, R. Moulding, G. Doron, S. S. Bhar, M. Nedeljkovic, & M.

    Mikulincer (Eds.), *The self in understanding and treating psychological*

    disorders (pp. 233-236). Cambridge, UK: Cambridge University Press.

Leary, M. R. (1983). A brief version of the Fear of Negative Evaluation Scale.

    Personality and Social Psychology Bulletin, 9(3), 371-375.

    doi:10.1177/0146167283093007

Leary, M. R. (2004). *The curse of the self: Self-awareness, egotism, and the quality*

    of human life. New York, NY: Oxford University Press.

Leary, M. R. (2014). Social anxiety as an early warning system: A refinement and

    extension of the self-presentation theory of social anxiety. In S. G. Hofmann

    & P. M. DiBartolo (Eds.), *Social anxiety: Clinical, developmental, and social*

    perspectives (3rd ed., pp. 321-334). San Diego, CA: Academic Press.

Leary, M. R., & Kowalski, R. M. (1995). The self-presentation model of social

    phobia. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope, & F. R. Schneier

    (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 94-112).

    New York, NY: The Guilford Press.

Letamendi, A. M., Chavira, D. A., & Stein, M. B. (2009). Issues in the assessment of

    social phobia: A review. *The Israel Journal of Psychiatry and Related*

    Sciences, 46(1), 13-24. Retrieved from

    https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2925842/

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety*

    Stress Scales (2nd ed.). Sydney, NSW: Psychology Foundation of Australia.

Mansell, W., & Clark, D. M. (1999). How do I appear to others? Social anxiety and

    processing of the observable self. *Behaviour Research and Therapy, 37*(5),

    419-434. doi:10.1016/S0005-7967(98)00148-X

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*(9),

    954-969. doi:10.1037/0003-066X.41.9.954

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of

    social phobia scrutiny fear and social interaction anxiety. *Behaviour*

    Research and Therapy, 36(4), 455-470. doi:10.1016/S0005-7967(97)10031-6

Mayo-Wilson, E., Dias, S., Mavranezouli, I., Kew, K., Clark, D. M., Ades, A. E., &

    Pilling, S. (2014). Psychological and pharmacological interventions for

    social anxiety disorder in adults: A systematic review and network meta-

    analysis. *The Lancet Psychiatry, 1*(5), 368-376. doi:10.1016/S2215-

    0366(14)70329-3

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of

longitudinal mediation. *Psychological Methods, 12*(1), 23-44. doi: 10.1037/1082-

989X.12.1.23

Maxwell, S. E., Cole, D. A., & Mitchell, M. A. (2011). Bias in cross-sectional

analyses of longitudinal mediation: Partial and complete mediation under an

autoregressive model. *Multivariate Behavioral Research, 46*(5), 816-841. doi:
10.1080/00273171.2011.606716

McEvoy, P. M., Grove, R., & Slade, T. (2011). Epidemiology of anxiety disorders in
the Australian general population: Findings of the 2007 Australian National
Survey of Mental Health and Wellbeing. *Australian and New Zealand
Journal of Psychiatry, 45*(11), 957-967. doi:10.3109/00048674.2011.624083

McLaughlin, K. A., & Nolen-Hoeksema, S. (2011). Rumination as a transdiagnostic
factor in depression and anxiety. *Behaviour Research and Therapy, 49*(3),
186-193. doi:10.1016/j.brat.2010.12.006

McNeil, D. W. (2010). Evolution of terminology and constructs in social anxiety and
its disorders. In S. G. Hofmann & P. M. DiBartolo (Eds.), *Social anxiety:
Clinical, developmental, and social perspectives* (pp. 3-21). San Diego, CA:
Academic Press.

Miller, G. A., & Chapman, J. P. (2001). Misunderstanding analysis of covariance.
Journal of Abnormal Psychology, 110(1), 40-48. doi:10.1037//0021-
843X.110.1.40

Mitchell, M. A., & Maxwell, S. E. (2013). A comparison of the cross-sectional and
sequential designs when assessing longitudinal mediation. *Multivariate Behavioral
Research, 48*(3), 301-339. doi: 10.1080/00273171.2013.784696

Moscovitch, D. A. (2009). What is the core fear in social phobia? A new model to
facilitate individualized case conceptualization and treatment. *Cognitive and
Behavioral Practice, 16*(2), 123-134. doi:10.1016/j.cbpra.2008.04.002

Moscovitch, D. A., Rowa, K., Paulitzki, J. R., Antony, M. M., & McCabe, R. E.
(2015). What if I appear boring, anxious, or unattractive? Validation and
treatment sensitivity of the Negative Self Portrayal Scale in clinical samples.

Cognitive Therapy and Research, 39(2), 178-192. doi:10.1007/s10608-014-9645-5

Mynatt, C., & Sherman, S. J. (1975). Responsibility attribution in groups and individuals: A direct test of the diffusion of responsibility hypothesis. *Journal of Personality and Social Psychology, 32*(6), 1111-1118. doi:10.1037/0022-3514.32.6.1111

Norton, A. R., & Abbott, M. J. (2016). The efficacy of imagery rescripting compared to cognitive restructuring for social anxiety disorder. *Journal of Anxiety Disorders, 40*, 18-28. doi:10.1016/j.janxdis.2016.03.009

Ogilvie, D. M. (1987). The undesired self: A neglected variable in personality research. *Journal of Personality and Social Psychology, 52*(2), 379-385. doi:10.1037//0022-3514.52.2.379

Penney, E. S., & Abbott, M. J. (2015). The impact of perceived standards on state anxiety, appraisal processes, and negative pre- and post-event rumination in social anxiety disorder. *Cognitive Therapy and Research, 39*(2), 162-177. doi:10.1007/s10608-014-9639-3

Perini, S. J., Abbott, M. J., & Rapee, R. M. (2006). Perception of performance as a mediator in the relationship between social anxiety and negative post-event rumination. *Cognitive Therapy and Research, 30*(5), 645-659. doi:10.1007/s10608-006-9023-z

Peters, L., Sunderland, M., Andrews, G., Rapee, R. M., & Mattick, R. P. (2012). Development of a short form Social Interaction Anxiety (SIAS) and Social Phobia Scale (SPS) using nonparametric item response theory: The SIAS-6 and the SPS-6. *Psychological Assessment, 24*(1), 66-76. doi:10.1037/a0024544

Powers, M. B., Sigmarsson, S. R., & Emmelkamp, P. M. G. (2008). A meta-analytic review of psychological treatments for social anxiety disorder. *International Journal of Cognitive Therapy, 1*(2), 94-113. doi:10.1521/ijct.2008.1.2.94

Powers, M. B., Zum Vorde Sive Vording, M. B., & Emmelkamp, P. M. (2009). Acceptance and commitment therapy: A meta-analytic review. *Psychotherapy and Psychosomatics, 78*(2), 73-80. doi:10.1159/000190790

Rachman, S., Gruter-Andrew, J., & Shafran, R. (2000). Post-event processing in social anxiety. *Behaviour Research and Therapy, 38*(6), 611-617. doi:10.1016/S0005-7967(99)00089-3

Rapee, R. M., & Abbott, M. J. (2007). Modelling relationships between cognitive variables during and following public speaking in participants with social phobia. *Behaviour Research and Therapy, 45*(12), 2977-2989. doi:10.1016/j.brat.2007.08.008

Rapee, R. M., & Abbott, M. J. (2009). Testing the efficacy of theoretically derived improvements in the treatment of social phobia. *Journal of Consulting and Clinical Psychology, 77*(2), 317-327. doi:10.1037/a0014800

Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioural model of anxiety in social phobia. *Behaviour Research and Therapy, 35*(8), 741-756. doi:10.1016/S0005-7967(97)00022-3

Rapee, R. M., & Lim, L. (1992). Discrepancy between self- and observer ratings of performance in social phobics. *Journal of Abnormal Psychology, 101*(4), 728-731. doi:10.1037/0021-843X.101.4.728

Rodebaugh, T. L., & Donahue, K. L. (2007). Could you be more specific, please: Self-discrepancies, affect, and variation in specificity and relevance. *Journal of Clinical Psychology, 63*(12), 1193-1207. doi:10.1002/jclp.20425

Rodebaugh, T. L., Holaway, R. M., & Heimberg, R. G. (2004). The treatment of social anxiety disorder. *Clinical Psychology Review, 24*(7), 883-908. doi:10.1016/j.cpr.2004.07.007

Rodebaugh, T. L., Weeks, J. W., Gordon, E. A., Langer, J. K., & Heimberg, R. G. (2012). The longitudinal relationship between fear of positive evaluation and fear of negative evaluation *Anxiety, Stress, and Coping, 25*(2), 167-182. doi:10.1080/10615806.2011.569709

Rodebaugh, T. L., Woods, C. M., Thissen, D. M., Heimberg, R. G., Chambless, D. L., & Rapee, R. M. (2004). More information from fewer questions: The factor structure and item properties of the original and Brief Fear of Negative Evaluation Scale. *Psychological Assessment, 16*(2), 169-181. doi:10.1037/1040-3590.16.2.169

Roelofs, J., Papageorgiou, C., Gerber, R. D., Huibers, M., Peeters, F., & Arntz, A. (2007). On the links between self-discrepancies, rumination, metacognitions, and symptoms of depression in undergraduates. *Behaviour Research and Therapy, 45*(6), 1295-1305. doi:10.1016/j.brat.2006.10.005

Roemer, L., & Orsillo, S. M. (2009). *Mindfulness- and acceptance-based behavioral therapies in practice.* New York, NY: The Guilford Press

Ruscio, A. M., Brown, T. A., Chiu, W. T., Sareen, J., Stein, M. B., & Kessler, R. C. (2008). Social fears and social phobia in the United States: Results from the National Comorbidity Survey Replication. *Psychological Medicine, 38*(1), 15-28. doi:10.1017/S0033291707001699

Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self-presentation: A conceptualization and model. *Psychological Bulletin, 92*(3), 641-669. doi:10.1037/0033-2909.92.3.641

Scott, L., & O'Hara, M. W. (1993). Self-discrepancies in clinically anxious and depressed university students. *Journal of Abnormal Psychology, 102*(2), 282-287. doi:10.1037//0021-843X.102.2.282

Sheehan, D. V., Lecrubier, Y., Harnett-Sheehan, K., Amorim, P., Janavs, J., Weiller, E., . . . Dunbar, G. C. (1998). The Mini-International Neuropsychiatric Interview (M.I.N.I): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *The Journal of Clinical Psychiatry, 59*(20), 22-33. Retrieved from http://www.psychiatrist.com/jcp/article/pages/1998/v59s20/v59s2005.aspx.

Shikatani, B., Antony, M. M., Kuo, J. R., & Cassin, S. E. (2014). The impact of cognitive restructuring and mindfulness strategies on postevent processing and affect in social anxiety disorder. *Journal of Anxiety Disorders, 28*(6), 570-579. doi:10.1016/j.janxdis.2014.05.012

Slaney, R. B., Mobley, M., Trippi, J., Ashby, J., & Johnson, D. G. (1996). *The Almost Perfect Scale-Revised*. University Park, PA: The Pennsylvania State University. Unpublished manusript.

Stopa, L. (2009). Why is the self important in understanding and treating social phobia? *Cognitive Behaviour Therapy, 38*(S1), 48-54. doi:10.1080/16506070902980737

Strauman, T. J. (1989). Self-discrepancies in clinical depression and social phobia: Cognitive structures that underlie emotional disorders? *Journal of Abnormal Psychology, 98*(1), 14-22. doi:10.1037/0021-843X.98.1.14

Strauman, T. J. (1992). Self-guides, autobiographical memory, and anxiety and dysphoria: Toward a cognitive model of vulnerability to emotional distress.

Journal of Abnormal Psychology, 101(1), 87-95. doi:10.1037/0021-843X.101.1.87

Strauman, T. J., & Higgins, E. T. (1988). Self-discrepancies as predictors of vulnerability to distinct syndromes of chronic emotional distress. *Journal of Personality, 56*(4), 685-707. doi:10.1111/j.1467-6494.1988.tb00472.x

Strauman, T. J., Kolden, G. G., Stromquist, V., Davis, N., Kwapil, L., Heerey, E., & Schneider, K. (2001). The effects of treatments for depression on perceived failure in self-regulation. *Cognitive Therapy and Research, 25*(6), 693-712. doi:10.1023/A:1012915205800

Strauman, T. J., Vieth, A. Z., Merrill, K. A., Kolden, G. G., Woods, T. E., Klein, M. H., . . . Kwapil, L. (2006). Self-system therapy as an intervention for self-regulatory dysfunction in depression: A randomized comparison with cognitive therapy. *Journal of Consulting and Clinical Psychology, 74*(2), 367-376. doi: 10.1037/0022-006X.74.2.367

Tabachnick, B. G., & Fidell, L. S. (2014). Using multivariate statistics. (6th ed.). Essex, UK: Pearson Education Limited.

Tangney, J. P., Niedenthal, P. M., Covert, M. V., & Barlow, D. H. (1998). Are shame and guilt related to distinct self-discrepancies? A test of Higgins's (1987) hypotheses. *Journal of Personality and Social Psychology, 75*(1), 256-268. doi:10.1037/0022-3514.75.1.256

Vieth, A. Z., Strauman, T. J., Kolden, G. G., Woods, T. E., Michels, J. L., & Klein, M. H. (2003). Self-system therapy (SST): A theory-based psychotherapy for depression. *Clinical Psychology: Science and Practice, 10*(3), 245-268. doi:10.1093/clipsy.bpg023

Wallace, S. T., & Alden, L. E. (1997). Social phobia and positive social events: The

price of success. *Journal of Abnormal Psychology, 106*(3), 416-424.

doi:10.1037/0021-843X.106.3.416

Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. *Journal

of Consulting and Clinical Psychology, 33*(4), 448-457.

doi:10.1037/h0027806

Weeks, J. W., Heimberg, R. G., Fresco, D. M., Hart, T. A., Turk, C. L., Schneier, F.

R., & Liebowitz, M. R. (2005). Empirical validation and psychometric

evaluation of the Brief Fear of Negative Evaluation Scale in patients with

social anxiety disorder. *Psychological Assessment, 17*(2), 179-190.

doi:10.1037/1040-3590.17.2.179

Weeks, J. W., Heimberg, R. G., & Rodebaugh, T. L. (2008). The Fear of Positive

Evaluation Scale: Assessing a proposed cognitive component of social

anxiety. *Journal of Anxiety Disorders, 22*(1), 44-55.

doi:10.1016/j.janxdis.2007.08.002

Weeks, J. W., Heimberg, R. G., Rodebaugh, T. L., Goldin, P. R., & Gross, J. J.

(2012). Psychometric evaluation of the Fear of Positive Evaluation Scale in

patients with social anxiety disorder. *Psychological Assessment, 24*(2), 301-

312. doi:10.1037/a0025723

Weeks, J. W., Heimberg, R. G., Rodebaugh, T. L., & Norton, P. J. (2008). Exploring

the relationship between fear of positive evaluation and social anxiety.

Journal of Anxiety Disorders, 22(3), 386-400.

doi:10.1016/j.janxdis.2007.04.009

Weeks, J. W., & Howell, A. N. (2012). The bivalent fear of evaluation model of

social anxiety: Further integrating findings on fears of positive and negative

evaluation. *Cognitive Behaviour Therapy, 41*(2), 83-95.
doi:10.1080/16506073.2012.661452

Weeks, J. W., & Howell, A. N. (2014). Fear of positive evaluation: The neglected
fear domain in social anxiety. In J. W. Weeks (Ed.), *The wiley blackwell
handbook of social anxiety disorder* (pp. 433-453). Chichester, UK: Wiley.

Weeks, J. W., Jakatdar, T. A., & Heimberg, R. G. (2010). Comparing and
contrasting fears of positive and negative evaluation facets of social anxiety.
Journal of Social and Clinical Psychology, 29(1), 68-94.
doi:10.1521/jscp.2010.29.1.68

Weeks, J. W., Spokas, M. E., & Heimberg, R. G. (2007). Psychometric evaluation of
the mini-Social Phobia Inventory (mini-SPIN) in a treatment-seeking sample.
Depression and Anxiety, 24(6), 382-391. doi:10.1002/da.20250

Weeks, J. W., & Zoccola, P. M. (2015). "Having the hear to be evaluated": The
differential effects of fears of positive and negative evaluation on emotional
and cardiovascular responses to social threat. *Journal of Anxiety Disorders,
36*, 115-126. doi:10.1016/j.janxdis.2015.08.004

Weilage, M., & Hope, D. A. (1999). Self-discrepancy in social phobia and
dysthymia. *Cognitive Therapy and Research, 23*(6), 637-650.
doi:10.1023/A:1018788925223

Willutzki, U., Teismann, T., & Schulte, D. (2012). Psychotherapy for social anxiety
disorder: Long-term effectiveness of resource-oriented cognitive behavioral
therapy and cognitive therapy in social anxiety disorder. *Journal of Clinical
Psychology, 68*(6), 581-591. doi:10.1002/jclp.21842

Wong, J., Gordon, E. A., & Heimberg, R. G. (2014). Cognitive-behavioral models of social anxiety disorder. In J. W. Weeks (Ed.), *The wiley blackwell handbook of social anxiety disorder* (pp. 1-23). Chichester, UK: Wiley.

Wong, Q. J. J. (2015). Psychometric evaluation of the english version of the Extended Post-Event Processing Questionnaire. *Anxiety, Stress, and Coping, 28*(2), 215-225. doi:10.1080/10615806.2014.925546

Wong, Q. J. J., & Moulds, M. L. (2009). Impact of rumination versus distraction on anxiety and maladaptive self-beliefs in socially anxious individuals. *Behaviour Research and Therapy, 47*(10), 861-867. doi:10.1016/j.brat.2009.06.014

Wong, Q. J. J., & Moulds, M. L. (2011). A new measure of the maladaptive self-beliefs in social anxiety: Psychometric properties in a non-clinical sample. *Journal of Psychopathology and Behavioral Assessment, 33*(2), 273-284. doi:10.1007/s10862-010-9208-3

Yap, K., Gibbs, A., Francis, A., & Schuster, S. (2016). Testing the bivalent fear of evaluation model of social anxiety: The relationship between fear of positive evaluation, social anxiety, and perfectionism. *Cognitive Behaviour Therapy, 45*(2), 1-14. doi:10.1080/16506073.2015.1125941

Zou, J. B., & Abbott, M. J. (2012). Self-perception and rumination in social anxiety. *Behaviour Research and Therapy, 50*, 250-257. doi:10.1016/j.brat.2012.01.007

Appendix A

Actual-Ought Self-Discrepancy and Actual-Feared Self-Discrepancy Measures for

Study 1 (Online Survey)

[Appendix A has been removed due to copyright restrictions]

Appendix B

Brief Fear of Negative Evaluation Scale (BFNE) for Study 1 (Online Survey)

[Appendix B has been removed due to copyright restrictions]

Appendix C

Fear of Positive Evaluation Scale (FPES) for Study 1 (Online Survey)

[Appendix C has been removed due to copyright restrictions]

Appendix D

Social Phobia Inventory (SPIN)

[Appendix D has been removed due to copyright restrictions]

Appendix E

Extended Post-Event Processing Questionnaire (E-PEPQ) for Study 1 (Online

Survey)

[Appendix E has been removed due to copyright restrictions]

Appendix F

Depression Anxiety Stress Scales 21-item-Depression Subscale (DASS$_{21}$-D)

[Appendix F has been removed due to copyright restrictions]

Appendix G

Actual-Ought Self-Discrepancy and Actual-Feared Self-Discrepancy Measures for

Study 2 (Class Presentation)

[Appendix G has been removed due to copyright restrictions]

Appendix H

Brief Fear of Negative Evaluation Scale (BFNE) for Study 2 (Class Presentation)

[Appendix H has been removed due to copyright restrictions]

Appendix I

Fear of Positive Evaluation Scale (FPES) for Study 2 (Class Presentation)

[Appendix I has been removed due to copyright restrictions]

Appendix J

State Anxiety Rating (SAR) for Study 2 (Class Presentation)

[Appendix J has been removed due to copyright restrictions]

Appendix K

Thoughts Questionnaire (TQ) – Negative Rumination Subscale for Study 2 (Class

Presentation)

[Appendix K has been removed due to copyright restrictions]

Appendix L

Actual-Ought Self-Discrepancy and Actual-Feared Self-Discrepancy Measures for

Study 3 (Lab Study)

[Appendix L has been removed due to copyright restrictions]

Appendix M

Brief Fear of Negative Evaluation (BFNE) Scale for Study 3 (Lab Study)

[Appendix M has been removed due to copyright restrictions]

Appendix N

Fear of Positive Evaluation Scale (FPES) for Study 3 (Lab Study)

[Appendix N has been removed due to copyright restrictions]

Appendix O

State Anxiety Rating (SAR) for Study 3 (Lab Study)

[Appendix O has been removed due to copyright restrictions]

Appendix P

Thoughts Questionnaire (TQ) – Negative Rumination Subscale for Study 3 (Lab

Study)

[Appendix P has been removed due to copyright restrictions]

Appendix Q

Mini-Social Phobia Inventory (Mini-SPIN) for Study 4 (Intervention Study)

[Appendix Q has been removed due to copyright restrictions]

Appendix R

Mini International Neuropsychiatric Interview (M.I.N.I) for the DSM-IV – Social

Phobia Subscale

[Appendix R has been removed due to copyright restrictions]

Appendix S

Social Phobia Scale 6-item (SPS-6) for Study 4 (Intervention Study)

[Appendix S has been removed due to copyright restrictions]

Appendix T

Social Interaction Anxiety Scale 6-item (SIAS-6) for Study 4 (Intervention Study)

[Appendix T has been removed due to copyright restrictions]

Appendix U

Speech Performance Questionnaire (SPQ) for Study 4 (Intervention Study)

[Appendix U has been removed due to copyright restrictions]

Appendix V

Thoughts Questionnaire (TQ) – Negative Rumination Subscale (agree, distress) for

Study 4 (Intervention Study)

[Appendix V has been removed due to copyright restrictions]

Appendix W

Cognitive Restructuring Condition for Study 4 (Intervention Study)

[Appendix W has been removed due to copyright restrictions]

Appendix X

Acceptance Condition for Study 4 (Intervention Study)

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