THE APPRAISAL OF THOUGHT VS. ACTION IN A NON-CLINICAL POPULATION

COMPARING OBSESSIVE-COMPULSIVE TENDENCIES

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Signature Page

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Abstract

Intrusive thoughts are a symptom of Obsessive-Compulsive Disorder (OCD) which are thoughts that become obsessions when they are catastrophized by the individual experiencing them and are distressing to the individual (Rachman, 1997). According to the cognitive model of OCD, intrusive thoughts occur on a continuum affecting both clinical and non-clinical populations (Rachman & De Silva, 1978). Within intrusive thoughts are commonly occurring content thoughts that can have sexual, blasphemous, or violent themes (Corcoran & Woody, 2008; Levine & Warman, 2016). At this time, no studies have been conducted analyzing the appraisal of an intrusive thought of another individual vs. acting out the behavior of the thought while comparing OC tendencies. This study recruited 271 participants through Amazon Mechanical Turk (MTurk). Participants OC levels were measured using the Obsessive-Compulsive Inventory-Revised (OCI-R). Participants were randomly assigned to either be shown vignettes describing three taboo thoughts (sexual, violent, blasphemous thoughts group) or assigned vignettes describing the three taboo thoughts as actions (action group). Participants were asked to complete the Social Distance Scale (SDS) about the targets they read about after they read each vignette (Link, Cullen, Frank, & Wozniak, 1987). Regression analyses were conducted with thought vs. action as the predictor, OC tendencies as the moderator, and social distance as the outcome for each content type. Simple slopes analyses were conducted where moderation was found to be significant. Across all three content types, participants desired more social distance from targets who acted on thoughts compared to targets who exclusively had thoughts, but the difference was more pronounced for low and average OC participants compared to high OC participants. OC level was found to be a moderator for thought vs. action

and social distance across all three content types. Unexpectedly, OC level was not a significant predictor of social distance for the blasphemous content type.

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Chapter 1

Introduction

Obsessive-Compulsive Disorder (OCD) affects 1.2% of the population in the United States and can reduce quality of life as well as cause high levels of social and occupational impairment (American Psychiatric Association, 2013). An aspect of OCD includes a symptom dimension of taboo thoughts which are either sexual, violent, or blasphemous in nature (Corcoran & Woody, 2008). Fifty-one percent of those diagnosed with OCD will experience at least one taboo thought (Mataix-Cols, Marks, Greist, Kobak, & Baer, 2002). For those with OCD, these taboo thoughts are considered intrusive and distressing to the individual experiencing them (Rachman, 2007). Taboo thoughts can be understood through the cognitive model which postulates that intrusive thoughts become obsessions when they are catastrophized by the individual experiencing them (Rachman, 1997). It is of importance to note that there is stigma associated with taboo thoughts. Taboo intrusive thoughts often are more socially rejected compared to other types of intrusive thoughts (Steinberg & Wetterneck, 2016). It has even been shown that clinicians are more socially rejecting of sexual and violent taboo thoughts compared to other types of obsessions (Steinberg & Wetterneck, 2017). Within OCD research, social rejection is commonly measured through social distancing via the Social Distance Scale (SDS) (Link et al., 1987). There are a number of studies that examine OC tendencies in non-clinical samples and their attitudes towards taboo thoughts (e.g. Corcoran & Woody, 2008); these studies have demonstrated that a person's level of OC tendencies is related to negative attitudes towards the thoughts. One gap in the literature is examination of how those with higher OC tendencies

may appraise the taboo thought of another individual versus the actual behavior consistent with the thought (i.e. having a thought about violence versus actually engaging in a violent behavior) compared to those with lower OC tendencies. The aim of the present study is to bridge that gap to better understand the significance individuals with higher OC tendencies give to intrusive thoughts relative to those thoughts in the form of actual behaviors.

Intrusive Thoughts

Defining Intrusive Thoughts

Obsessive-Compulsive Disorder (OCD), according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), is characterized by obsessions (intrusive thoughts) and compulsions, or behaviors that are recurrent and persistent with an attempt to suppress the obsessions by the individual who experiences them (American Psychiatric Association, 2013). Intrusive thoughts are repetitive thoughts, images, or impulses that are unacceptable and/or unwanted, internal in origin, and are upsetting or distressing to the individual (Parkinson & Rachman, 1981). Intrusive thoughts within OCD, by definition in the DSM-5, are obsessions. Thus, these terms will be used interchangeably throughout this paper. Taboo obsessions have even been found to be an independent risk factor of suicidality in patients with OCD (Cervin et al., 2022). Intrusive thoughts are considered to be part of a normal experience and do not always result in distress or a psychological disorder (Freeston, Ladouceur, Thibodeau, & Gagnon, 1991; Rachman & De Silva, 1978; Salkovskis & Harrison, 1984). In fact, around 80-99 percent of the general population experience intrusive thoughts (Barrera & Norton, 2011). Rachman and de Silva (1978) found that non-clinical subjects experience intrusive thoughts that are quite similar in terms of form and content to those of clinical subjects. In previous research, three common types or themes of intrusive thoughts in OCD have been primarily studied: blasphemous (e.g.

defying God in some manner), sexual (e.g. the thought of molesting a child that you are babysitting), and violent (e.g. intentionally driving into pedestrian with your car). Taboo obsessions appear to be fundamentally different than reactive obsessions such as contamination, symmetry, and doubts (Lee & Kwon, 2003). They also differ experientially (internally versus externally generated) and in terms of associated appraisal and control strategies (Lee & Kwon, 2003).

Sexual, violent, and blasphemous obsessions appear to be a symptom dimension of OCD and are considered "taboo" intrusive thoughts (Brakoulias et al., 2013). Individuals with OCD who have higher scores on obsessions subscales were found to also have higher scores on taboo thoughts symptom dimension scales (Brakoulias et al., 2013). However, individuals with OCD who also have a taboo thoughts symptom dimension are more likely to seek professional help compared to those who are diagnosed with OCD who do not experience taboo thoughts. Sexual, violent, and religious obsessions co-occur frequently (Abramowitz et al., 2003; 2010; Mataix-Cols, Do Rosario-Campos, & Leckman, 2005; McKay et al., 2004). By far the most common taboo thought, 51 percent of individuals with OCD experience violent obsessions (Mataix-Cols et al., 2002).

Religious obsessions are a prevalent manifestation of OCD. Nearly 25% of those with OCD who were North American college students reported experiencing religious intrusive thoughts (Mataix-Cols et al., 2002). Regardless of the severity of OCD symptoms, Tolin, Abramowitz, Kozak, and Foa (2001) found that individuals with religious intrusive thoughts had more magical ideation, poorer insight, and more perceptual distortions compared to those with other types of obsessions. Given that religious obsessions involve the perception of fear of punishment from God, fear of violating or having violated religious standards, and sin, it is not

surprising that these obsessions are distressing to affected individuals and impair social and occupational functioning (Siev, Steketee, Fama, & Wilhelm, 2011). Studies have shown that individuals who have higher levels of intrusive thoughts related to religion tend to also be more religious for both clinical and non-clinical populations (Abramowitz, Deacon, Woods, & Tolin, 2004; Abramowitz, Huppert, Cohen, Tolin, & Cahill, 2002; Greenberg & Shefler, 2002; Lewis & Maltby, 1995; Nelson, Abramowitz, Whiteside, & Deacon, 2006; Okasha, Saad, Khalil, El Dawla, & Yehia, 1994; Sica, Novara, & Sanavio, 2002; Siev & Cohen, 2007; Steketee, Quay, & White, 1991). Unfortunately, those with scrupulous, or religious, intrusive thoughts may be more difficult to treat (Ferrão et al., 2006; Mataix-Cols et al., 2002; Miller & Hedges, 2008; Rufer et al., 2005).

Less common than religious intrusive thoughts, 12.4% of individuals with OCD experience sexual obsessions (Mataix-Cols et al., 2002). Sexual obsessions often have themes surrounding pedophilia, incest, sexual orientation, or unfaithfulness (Cathey & Wetterneck, 2013). For example, an individual is a babysitter and has thoughts of molesting the child while they are being cared for. The babysitter will worry about having the thoughts and whether they may act on them. The babysitter has no history of pedophilic behavior. Because sex has high emotional and moral significance, it can become a prime topic for obsessions (Gordon, 2002). People who experience sexual obsessions also experience secondary disturbances in low self-esteem, impaired concentration, mood, and various inhibitions in sexual behavior (Gordon, 2002).

OC Beliefs.

Cognitive Model.

Cognitive theories promote that it is not the content of an intrusive thought that makes it distressing, but rather the processing characteristics and appraisals of the thought that lead to distress (David A Clark & Purdon, 1995; Rachman, 1997, 1998; Salkovskis, 1985) For instance, a thought that an individual feels responsible for or ideas that the individual needs to control the thought is more likely to be distressing and to activate thought control efforts compared to thoughts that the individual does not feel responsible for (Rowa & Purdon, 2003). Again, cognitive theorists promote that it is not the intrusive thought itself that causes distress, but the negative appraisal of the thoughts that creates so much distress (Shafran, 2005). Cognitive theories of intrusive thoughts suggest that negative appraisals about the significance of a thought is crucial in converting a neutral thought into an obsession (Rachman, 1997, 1998; Salkovskis, 1985; Salkovskis, Forrester, & Richards, 1998) Thus, it is theorized that obsessions are produced by catastrophizing the significance of one's thoughts (Rachman, 1997).

Moreover, individuals with OCD differ from non-clinical samples in the way they appraise intrusive thoughts (Salkovskis, 1985). Those with OCD are more likely to appraise intrusive thoughts as more distressing than normative samples (Berry & Laskey, 2012). They also tend to experience intrusive thoughts more frequently and in more severe forms compared to non-clinical populations (Berry & Laskey, 2012). Non-clinical populations typically do not attribute their thoughts to be personally relevant or meaningful. Those with OCD, particularly those with intrusive thoughts (Lee & Kwon, 2003; Lee et al., 2005), typically experience more attempts at suppressing their obsessions compared to non-clinical populations and usually are less successful at doing so (Ladouceur et al., 2000). Individuals with OCD tend to use unsuccessful suppression/neutralizing behaviors like worrying compared to more successful behaviors utilized by non-clinical individuals, such as accepting the thought (Marcks & Woods,

2005). People who are more accepting of their intrusive thoughts have lower levels of depression and are less anxious (Marcks & Woods, 2005).

OCD symptoms can be viewed as being on a spectrum, thus displayed as a range by clinical samples and non-clinical samples alike. However, there are differences between those on opposing ends of the spectrum. One example of this is related to the Seeking Proxies for Internal States (SPIS) model of OCD. SPIS postulates that obsessive-compulsive (OC) individuals have decreased ability to access their internal states and so they seek out and rely upon external proxies for these states (Dar, Eden, van Dongen, Hauschildt, & Liberman, 2019). Additionally, the hypothesis of the SPIS model explains that OC tendencies are related to a deficiency in subjective understanding regarding internal states, which can cause those with high OC tendencies to rely more on self-perception processes when identifying their own internal states (Lazarov, Dar, Liberman, & Oded, 2012a). Moreover, the self-perception theory states that individuals likely will depend on their own behaviors, like attitudes and personal characteristics, to access their internal states given that their internal cues are ambiguous and/or uninterpretable (Bem, 1972). Also, individuals with OCD typically doubt their own feelings of internal states as well as have low confidence regarding their cognitive performance (Kang, Namkoong, Yoo, Jhung, & Kim, 2012; Nielen, Veltman, Jong, Mulder, & Den Boer, 2002). Lazarov, Dar, Liberman, and Oded, (2012b) named two mechanisms likely behind this. One is that individuals with OCD have access to their internal states, but meta-cognitive processes such as excessive self-monitoring and self-questioning lead to doubts about the internal states. The second is that inputs from internal states are attenuated for those with OCD so these meta-cognitive processes like self-monitoring only increase doubts. SPIS can help explain why individuals with OCD experience obsessions.

Studies by both Lopatka and Rachman (1995) and Shafran (1997) demonstrate that by decreasing feelings of responsibility and preventing the possibility for guilt for those with OCD, there was a decreased urge to carry out rituals. Another group of studies shows that in non-clinical samples, feelings of guilt lead to OC-like symptoms (Shapiro & Stewart, 2011). However, it appears that when individuals with OCD learn to accept the possibility of feeling guilty, their obsessive symptoms decrease (Cosentino, D'Olimpio, Perdighe, Romano, Saliani, 2012). Individuals diagnosed with OCD display a higher propensity to both guilt and disgust when compared to non-clinical samples (Gangemi & Mancini, 2017). An OCD individual's concern over a harmful event is largely reduced if responsibility for the event is not considered their own, regardless of the actual probability of harm (Lopatka & Rachman, 1995).

Grisham and Williams (2009) also found a positive correlation between OC symptoms and increased rumination. Rumination can be explained cognitively by a focus of negative information that can lead to an elaboration of the original material in a way that produces increased pathways of retrieval back to the original activating event (Williams, Watts, MacLeod, & Mathews, 1988). It seems as though rumination may make retrieval of unwanted thoughts hyper accessible (Grisham & Williams, 2009).

It is now growing traction in the literature and is theorized that intrusive thoughts, including taboo thoughts, are on a continuum (Wang & Clark, 2002). Thus, both clinical and non-clinical populations can experience intrusive thoughts on a spectrum from normal to the clinical range. For example, in a sample of non-clinical college students, it was found that violent intrusive thoughts were the most common, as 66% experienced them, followed by sexual (19%), miscellaneous (7%), religious (4%), and contamination (3%) (Markowitz & Purdon, 2008). Thus, it appears OCD experiences can be viewed on a continuum (Stip & Letourneau, 2009;

Schomerus et al., 2016; Thibodeau, 2016; Tomczyk et al., 2023; Wiesjahn, Jung, Kremser, Rief, & Lincoln, 2016). On one end of the spectrum someone may experience a taboo thought but appraise it as a neutral thought. At the other end of the spectrum, someone may have the same taboo thought and appraise it as threatening, creating an intrusive thought. Inherently, the cognitive model of OCD lends itself to this theory that individuals experience OCD symptoms on a continuum. In line with the continuum model, Clark and Rhyno (2005) gave explanation to a severity continuum regarding obsessions and intrusive thoughts, with distress, frequency, and perceived thought control as distinguishing factors. More evidence for a continuum model of OCD also comes from correlations between frequency of intrusive thoughts and obsessionality (Clark, Purdon, & Wang, 2003). Moreover, correlational and experimental studies using non-clinical samples and comparisons with clinical samples point to the idea that uncontrollability, importance of intrusive thoughts, and appraisals of responsibility may be central factors to the continuum of intrusive thoughts (Berry & Laskey, 2012).

Obsessive-Compulsive Tendencies

A number of information processing differences have been found between individuals higher and lower in OC tendencies. Individuals who have higher OC tendencies consider taboo thoughts to be more significant than do individuals with lower OC tendencies (Corcoran & Woody, 2008; Levine & Warman, 2016). A negative correlation was found between OC symptoms and perceived ability to control thoughts (i.e. the more OC symptoms an individual experiences the lower the likelihood they believe they can control their own thoughts) (Grisham & Williams, 2009; Ólafsson et al., 2014). Grisham and Williams (2009) also found that in non-clinical populations more OC symptoms predicted increased levels of distress and more attempts to suppress the target thought. Even when attempting to suppress the target thought, those with

higher OC tendencies take longer to replace intrusive thoughts as measured by more reoccurrences while attempting to replace the thoughts than do those with lower OC tendencies (Ólafsson et al., 2014). Another study found that individuals with higher OC tendencies showed a propensity to use non-agentic speech more than individuals with lower OC tendencies demonstrating that people with higher OC tendencies may have a decreased sense of agency (SoA) (Oren, Friedmann, & Dar, 2016). It was found that the non-agentic speech included the omission of the agent altogether in an attempt to detach the event from the entity that caused it (Oren et al., 2016). Lastly, there is evidence to show that patients with OCD display higher impulsivity than control subjects (Sahmelikoglu Onur et al., 2016). People with higher OC tendencies have a stronger "readiness for action," which may be a reason for higher impulsivity compared to people with lower OC tendencies, especially regarding threatening stimuli (Dayan, Berger, & Anholt, 2014). Also related to executive functioning, those with higher OC tendencies were characterized by deficits in neurocognitive flexibility (Bradbury, Cassin, & Rector, 2011). This may help explain the obsessionality and rumination of taboo intrusive thoughts experienced by those with higher OC tendencies. Rhéaume, Ladouceur, and Freeston (2000) found that, in a non-clinical sample, perceived danger, perfectionism, and responsibility were all moderately related to OC tendencies. Those with higher OC tendencies generally tend to distrust their own cognitive functions (Aardema, O'Connor, & Emmelkamp, 2006; Brown, Kosslyn, Breiter, Baer, & Jenike, 1994; Macdonald, Martin, Macleod, & Richter, 1997; Tuna, Tekcan, & Topçuoğlu, 2005; Woods, Vevea, Chambless, & Bayen, 2002; Zitterl et al., 2001). Moreover, it has been shown that people with high OC tendencies have impaired access to their internal emotional states, theoretically caused by doubting those states (Dar, Lazarov, & Liberman, 2016). Individuals with higher OC tendencies tend to be less willing to report answers that are not held

high in confidence suggesting they also conservatively take risks (Shachar, Lazarov, Goldsmith, Moran, & Dar, 2013). In sum, research supports numerous differences in how individuals higher and individuals lower in OC tendencies process information and take meaning from events.

Thought-Action Fusion (TAF) within OC beliefs. According to Beck (1976), one of the dysfunctional assumptions that can interact with intrusive thoughts is that having a thought about committing an action is appraised equivalently to performing the action. Beck's ideas lay the foundation for the concept of thought-action fusion (TAF), which is the belief that having an intrusive thought is near or equivalent to the morality of actually performing the action and that having a thought can increase the probability of the situation occurring (Shafran & Rachman, 2004). TAF is associated with OCD tendencies and may exacerbate distress for individuals with clinical levels of symptoms (Berle & Starcevic, 2005). TAF is not specific to just OCD; it is also found in other disorders such as generalized anxiety disorder, depression, eating disorders, and psychotic disorders (Berle & Starcevic, 2005). In OCD, TAF is thought to apply to a variety of intrusive thoughts, rather than any one type in particular (e.g. someone who has both sexual and violent taboo thoughts can experience TAF of both types) (Berle & Starcevic, 2005).

Within OCD research, TAF is considered an appraisal (Berle & Starcevic, 2005). Thus, an individual may have an intrusive thought such as "I will kill my dog when I see him next" and believe/appraise it equivalently to if they had actually committed the action. This association between OCD symptoms and TAF suggests that from a cognitive perspective, TAF plays a role in the psychopathology of OCD (Berle & Starcevic, 2005). Rachman (1997) hypothesized that a "normal" obsession/thought becomes an abnormal obsession/thought when it is interpreted as being personally relevant and/or threatening in nature. TAF plays a role in this interpretation of thoughts and is expected to be a mechanism in the development of obsessions (Berle &

Starcevic, 2005). According to Rachman (1993), if someone considers intrusive thoughts to be personally relevant and of high importance, particularly when the thoughts are violent in nature, it is associated with a moral responsibility experienced by the individual. In turn, this causes the individual to feel responsible for his or her thoughts. Guilt and responsibility are closely aligned experiences. An individual who feels responsible for their thoughts may feel guilt associated with these thoughts causing them great distress, contributing to the symptomatology of their OCD tendencies (Berle & Starcevic, 2005). Consequently, these feelings of guilt may contribute to an individual's desire to neutralize or make attempts to suppress such feeling (Zucker et al., 2002). Because of this attempted suppression, TAF may allow normal intrusive thoughts to become pathological (Berle & Starcevic, 2005). According to Wegner, Schneider, Carter, and White (1987), thought suppression may be counter-productive, actually intensifying intrusions rather than lessening in intensity, thus, exacerbating the symptoms of OCD.

Likelihood TAF is a belief that having a thought about an event can make it more likely that event will occur. For example, if I think about stabbing my neighbor, it makes it more likely that I will follow through with it (Thompson-Hollands, Farchione, & Barlow, 2005). Moral TAF is a belief that thinking about an action or behavior is the moral equivalent of performing the behavior. For example, thinking about stabbing my neighbor is as morally wrong as stabbing them (Thompson-Hollands et al., 2005). According to previous research, (e.g. Abramowitz et al., 2003; Shafran and Rachman, 2004), there is not a reliable relation of moral TAF with OCD symptoms even when it has been shown to be related to depression. Yet, several studies have found a positive correlation between likelihood TAF and OCD symptom level (Amir, Freshman, Ramsey, Neary, & Brigidi, 2001; Rassin, Diepstraten, Merckelbach, & Muris, 2001; Shafran,

Thordarson, & Rachman, 1996). Moreover, there is evidence suggesting an individual diagnosed with OCD will have higher levels of likelihood TAF (Thompson-Hollands et al., 2005).

Attitudes Towards Intrusive Thoughts

Taboo intrusive thoughts, typically violent or sexual, often are more socially rejected compared to other types of intrusive thoughts (Steinberg & Wetterneck, 2016; Ponzini & Steinman, 2022). Even though intrusive thoughts are on a continuum and are normative in nature, those with OCD are less likely to disclose certain obsessional themes (i.e. taboo thoughts)(Simonds, 2001). These obsessional themes include taboo thoughts, as there may be shame and fear of negative social consequences if shared (Laura M. Simonds & Thorpe, 2003). Cathey and Wetterneck (2013) found that after reading vignettes about either a significant other or a friend disclosing an intrusive thought that individuals are more socially rejecting of a friend who disclosed an intrusive thought compared to a significant other with the same intrusive thought.

Even clinicians show some biases in treating OCD and intrusive thoughts. Clinicians were more likely to socially reject contamination, violent, and sexual taboo thoughts in patients compared to other intrusive thoughts like scrupulous obsessions (Steinberg & Wetterneck, 2017). They also found that clinicians, if experiencing sexual obsessions, were less likely to reveal to others compared to other types of taboo thoughts (Steinberg & Wetterneck, 2017). People may think that because someone has the thought that means they will want to act out on the obsessional thoughts. People who experience violent, religious, and/or sexual obsessions appear to be particularly vulnerable and susceptible to stigma and shame surrounding treatment of their symptoms (Glazier, Wetterneck, Singh, & Williams, 2015). For psychotherapists, taboo thoughts are significantly less recognizable as OCD symptomatology compared to contamination and

symmetry (Canavan, 2022). Clinicians also showed greater levels of stigma toward clients with aggressive and pedophilic taboo thoughts compared to symmetry and contamination (Canavan, 2022).

Violent intrusive thoughts (e.g. stabbing yourself or your sibling) are more provoking, most likely because they are perceived as particularly threatening (Simonds & Thorpe, 2003). Simonds and Thorpe (2003) conducted a study with three separate vignettes showing three different types of OCD symptomology presentations. The presentations were a compulsive washer, a compulsive checker, or a person with violent thoughts. The presentation with the violent thoughts was seen as most negative by the participant sample (Simonds & Thorpe, 2003). Another study, by Corcoran and Woody (2008), found religious intrusive thoughts to be the least negatively appraised of violent, sexual, and religious taboo thoughts. Corcoran and Woody (2008), as well as Levine and Warman (2016), utilized vignettes to analyze how individuals with differing levels of OC tendencies appraised taboo intrusive thoughts. These two studies found evidence that, for taboo thoughts, people view violent thoughts most negatively, sexual thoughts second most, and blasphemous least negatively (Corcoran & Woody, 2008; Levine & Warman, 2016).

Simonds and Thorpe (2003) found that people believe that others with violent obsessions would feel guilt and because of this would not likely share this information. A non-clinical sample determined those with violent obsessions were lower in social evaluation and were perceived as more dangerous (Simonds & Thorpe, 2003). Not surprisingly, professionals in the mental health field tend to show less stigmatizing attitudes than non-mental-health professionals (Smith & Cashwell, 2011). Even within the mental health field, however, it has been shown that professionals who are uneducated about sexual obsessions often misdiagnose patients with

pedophilia rather than a more appropriate diagnosis of OCD (Gordon, 2002). Unfortunately, this problem is not exclusive to just sexual intrusive thoughts (SIT). Glazier, Swing, and McGinn (2015) with mental health providers used vignettes that included an individual experiencing violent intrusive thoughts, and Schizophrenia was misdiagnosed by the mental health providers in 31.3% of cases. In general, many people associate mental illness with dangerousness, unpredictability, and weakness (Reavley & Jorm, 2011). Smith and Cashwell (2011) showed that, compared to mental health professionals, the general public holds more negative attitudes about and desires greater social distance from the mentally ill. Also, within the general population, greater social distance is typically desired from others who have sought professional help (Jorm & Oh, 2009). Interestingly, of those who have more knowledge about mental health, greater distance social distance is sometimes desired if the other person has not sought professional help (Jorm & Oh, 2009). Overall, personal experience with mental disorders was associated with lower social distance scores from others diagnosed with a mental disorder (Jorm & Oh, 2009).

Cathey and Wetterneck (2013) suggest providing education as a way to decrease stigma and increase the seeking of treatment for mental health professionals. There is now increasing research to back this claim. For example, Warman, Phalen, and Martin (2015) had participants read a vignette describing a target with violent intrusive thoughts as either being diagnosed with schizophrenia, OCD, or no diagnosis and assessed attitudes towards the targets. Then a brief education was given to participants about OCD and participants were asked their attitudes towards the target again. Before the education was given, OCD was not considered a credible diagnosis to participants. However, after education, OCD became a credible diagnosis and negative attitudes toward the target decreased. Snethen and Warman (2018) conducted a very similar study but examined pedophilic thoughts. Results were also similar in that before

education OCD was not a credible diagnosis, but after education OCD became a credible diagnosis and negative attitudes toward the target significantly decreased. These studies demonstrate that lack of knowledge helps foster negative attitudes many people have about taboo thoughts associated with OCD.

Disclosing sexual intrusive thoughts is associated with more social rejection from peers compared to disclosure of contamination related intrusive thoughts (Cathey & Wetterneck, 2013). In line with this, individuals were also less likely to report they would be willing to disclose sexual intrusive thoughts compared to contamination intrusive thoughts (Cathey & Wetterneck, 2013). Given the findings, it is likely that disclosing sexual intrusive thoughts are more stigmatizing than disclosing contamination thoughts (Cathey & Wetterneck, 2013). Moreover, it may also be likely that individuals will still avoid disclosing sexual obsessions even after disclosing other types of intrusive thoughts (Cathey & Wetterneck, 2013). This may be because, compared to taboo violent and blasphemous thoughts, if the thought occurred at a high frequency, participants were found to attach the most personal significance to the sexual target thought in a study by Corcoran and Woody (2008). The frequency of the taboo thought was found to be a mediator for attaching the most personal significance to the sexual taboo thought. It is probable there was something particular about the intrusive sexual thoughts about a child that affected participants of the study more so compared to the violent and blasphemous intrusive thoughts (Corcoran & Woody, 2008). Perhaps, the vignettes pertaining to sexual themes produced more emotional salience toward more distressing emotions (e.g. fear, shock, disgust) (Corcoran & Woody, 2008). Additionally, McCarty, Guzick, Swan, and McNamara (2017) found, in non-clinical samples, there were lower levels of recognition of taboo intrusive thoughts as OCD compared to contamination intrusive thoughts. Unfortunately, the stigma related to OCD

may help explain why those diagnosed with OCD have very low rates of seeking help from mental health professionals (Mayerovitch et al., 2003).

The Present Study

Aims

The aim of the present study was to better understand how level of OC tendencies in an individual influences appraisal of a taboo thought of another individual versus acting out that thought within a non-clinical sample. Participants were randomly assigned to either a thoughts or an actions vignette set. They were shown 3 vignettes: one with a religious, one with a sexual, and one with a violent thought or action (Foa et al., 2002). Participants' level of OC tendencies was measured using the Obsessive-Compulsive Inventory-Revised (OCI-R), a measure of various Obsessive Compulsive symptoms that has been utilized in a number of studies researching non-clinical populations including Abramowitz, Lackey, and Wheaton (2009), Corcoran and Woody (2009), Dar et al. (2019), Magee and Teachman (2012), and Wahl, Huelle, Zurowski, and Kordon (2013). Attitudes towards the targets in the vignette were determined using the Social Distance Scale (Link et al., 1987), a popular assessment to determine participants' attitudes toward targets in vignette studies. Several studies have utilized both vignettes and SDS concurrently including Cathey and Wetterneck (2013), McCarty et al. (2017), Reavley and Jorm (2011), Snethen and Warman (2018), and Thibodeau (2016).

Hypotheses

OC level was expected to be a significant predictor of social distance, such that it was expected individuals higher in OC levels would desire more social distance from the targets, regardless of their group assignment - thought or action. Thought vs action was not expected to

be a significant predictor as it was expected that OC level would moderate the relationship between social distance and group assignment (thought vs action.) Specifically, it was expected that individuals lower on the continuum of OC tendencies would see vast differences between the targets who had only thoughts and targets who were detailed to have problematic (violent, sexual, or blasphemous) actions. As a result, for individuals lower on the continuum of OC, it was expected social distance would be far greater in the action as opposed to the thoughts condition. For individuals higher in OC, it was expected, due to the concept of "thought-action fusion," that they would see thoughts and actions similarly. Specifically, it was expected participants with higher OC levels would desire the same amount of social distance from vignette targets in the thought and in the action vignettes.

Chapter 2

Methods

Participants

Participants provided informed consent before participating in the study. Research participants were a minimum of 18 years old at the time of the study and be able to speak English fluently. All participants were recruited through the crowdsourcing marketplace Amazon Mechanical Turk (MTurk) and were given compensation in the amount of $4.00 for their involvement in the present study, funded by a University of Indianapolis internal grant awarded to Debbie Warman, the advisor for this project.

Materials

Obsessive-Compulsive Inventory-Revised (OCI-R). The OCI-R was used in the present study to determine participant's level of OC tendencies. This is a self-report measure used to determine the frequency and amount of distress of OCD symptoms an individual is experiencing using 18 items with each item on a 5-point Likert scale. The OCI-R has excellent test-retest reliability (r=.82; Foa et al., 2002). Moreover, it has internal consistency of r=.88 for non-clinical samples (Hajcak, Huppert, Simons, & Foa, 2004). The OCI-R is a measure that has been used in a number of studies assessing OC symptoms on a continuum in non-clinical populations including (Abramowitz et al., 2009; Corcoran & Woody, 2009; Dar et al., 2019; Magee & Teachman, 2012; Wahl et al., 2013). The Cronbach's Alpha for the OCI-R in this study was .956, which is excellent.

Vignettes. A total of 6 vignettes were utilized in this study to determine evaluations of a hypothetical target with: 1) a violent taboo thought, 2) a person acting out that violent taboo thought, 3) a person having a sexual taboo thought, 4) a person acting out that sexual taboo

thought, 5) a person having a blasphemous taboo thought, and 6) a person acting out that blasphemous taboo thought. This study utilized the three taboo thought vignettes used by Levine and Warman (2016) for the thought condition. For the action condition, the vignettes were modified to indicate the action had been carried out. A number of studies have also used vignettes to research taboo intrusive thoughts including Cathey and Wetterneck (2013), Corcoran and Woody (2008), Corcoran and Woody (2009), McCarty et al. (2017), Levine and Warman (2016), Snethen and Warman (2018), Steinberg and Wetterneck (2017), and Warman, L. Phalen, and Martin (2015).

Vignettes for Action

1. Joe is a very religious person. While engaged in silent prayer, he urinated on the Bible.
2. While helping his niece use the bathroom, Alex performed sexual acts with the child.
3. While stopped at a crosswalk waiting for an elderly pedestrian to cross the street, Larry decided to run them over in his car and drive away from the scene.

Vignettes for Thought

1. Joe is a very religious person. Several times per week while engaged in silent prayer, he has a sudden, terrible image of urinating on the Bible. Joe is very upset about having this thought.
2. Several times per week while helping his niece use the bathroom, Alex has a sudden, intrusive sexual thought about his niece. Alex is very upset about having this thought.
3. Several times per week while stopped at a crosswalk waiting for an elderly pedestrian to cross the street, Larry has a sudden, horrific impulse to run them over in his car. Larry is very upset about having this thought.

Social Distance Scale. The Social Distance Scale is a 7 item self-report measurement used to determine attitudes toward individuals with mental illness. Its most current version was created by Link, Cullen, Frank, and Wozniak (1987). All 7 items are measured using a five-point Likert scale, 0 = "definitely willing" and 4= "definitely unwilling." Higher scores on the measure show a desire for greater distance from the individual targeted in the scale. The measure has good internal consistency reliability, ranging between .079 and 0.92 (Angermeyer et al., 2014; Link et al., 1987; Von Dem Knesebeck, Angermeyer, Kofahl, Makowski, & Mnich, 2014), and good construct validity (Link et al., 1987). The social distance scale is a popular way to assess attitudes towards individuals with various presenting problems, including OCD (McCarty et al., 2017; Reavley & Jorm, 2011; Schomerus et al., 2016; Snethen & Warman, 2018; Thibodeau, 2016; Warman et al., 2015; Wiesjahn et al., 2016). In this study, the Social Distance Scale was used to collect data on the dependent variable. The Cronbach's Alpha for the Social Distance Scale in this study was .971, which is excellent.

Manipulation Check. To ensure participants had attended to materials, all participants engaged in a manipulation check. Participants in the thought condition were asked to endorse which of the following thoughts they did not view in a vignette: running someone over with a car, engaging in sexual activity with a child, urinating on the bible, or thought of leaving dirty dishes on the counter. Participants in the action condition were asked to endorse which of the following actions they did not view in a vignette: running someone over with a car, engaging in sexual activity with a child, urinating on the bible, or leaving dirty dishes on the counter.

Procedure. Data for this study was collected online using the Qualtrics survey system. The survey was presented to participants through MTurk. Participants first gave consent to participate in the study. Next, they were administered the OCI-R to determine level of OC tendencies. The

participants were randomly assigned to either be shown vignettes describing three taboo thoughts (sexual, violent, blasphemous thoughts group) or assigned vignettes describing the three taboo thoughts as actions (action group). Participants then were asked to complete the Social Distance Scale about the targets they read about after they read each vignette. Lastly, they completed a manipulation check for content type.

Chapter 3

Results

Power Analysis. A power analysis was conducted with a presumed effect size of .15 and power set to .8. A total sample size of 77 particpants was determined to be required. Ultimately, 271 particpants were recruited to protect against missing data. 84 participants were eventually dropped from the study for reasons including not successfully completing the manipulation check (69 participants), not thoroughly completing the procedures (11 participants), and representing outliers (4 participants). Demographic data of the remaining 187 participants is shown in Table 1.

Table 1

Sample Demographics

	Group			
	Thought		Action	
	N	%	N	%
Sex				
Male	58	61.1	44	47.8
Female	37	38.9	48	52.2
Race				
White	73	76.8	70	76.1
Non-white	22	23.2	22	23.9
	M	SD	M	SD
Age	36.93	10.97	37.22	11.45

Testing of Assumptions. Several tests of assumptions for moderation analyses were conducted including testing for homogeneity, homoscedasticity, outliers, multicollinearity, and a normal distribution of the data. After checking for outliers using distance measures of Mahalanobis, Cook's, and leverage values, two participants were found to be outliers and were dropped from the primary analyses. The histogram of standardized residuals for each content type indicated

that the data contained approximately normally distributed errors, as did the normal P-P plot of standardized residuals, which showed points that were not completely on the line, but still correlated with it. The scatterplot of standardized predicted values showed that the data met the assumptions of homogeneity of variance and linearity. There did not appear to be any issues with multicollinearity.

Preliminary Analyses. A number of demographic variables were examined to determine if they needed to be added to the primary analyses as covariates. Specifically, age, gender, and race were examined to determine their relationships to the dependent variables of the study: social distance desired from the sexual, violent, and blasphemous vignettes. The relationship of age and the dependent variables were examined through correlational analyses. Age did not have a significant impact on social distance for all three content types, blasphemous (n = 187, r = .04, p = .61), sexual (n = 191, r = .05, p = .47), and violent (n = 191, r = .05, p = .52). To determine any differences in the dependent variables across diffferent genders (male and female) a t-test was used. There appeared to be a significant difference between genders for the sexual content type (p = .024) and, thus, was included in the primary analysis as a covariate for the sexual vignettes. To determine any differences in responses to dependent variables across races, one-way ANOVAS were conducted. Due to insufficient participants in racial categories other than White, it was determined there was only enough representation to create white and non-white groupings. There were no significant relationships found between white and non-white participants' desired social distance from the targets (all p-values >.09).

Primary Analyses. Regression analyses were conducted to test the hypotheses of the current study. The hypotheses are repeated here for clarity: OC level was expected to be a significant predictor of social distance, such that it was expected individuals higher in OC levels would

desire more social distance from the targets, regardless of their group assignment - thought or action. Thought vs action was not expected to be a significant predictor as it was expected that OC level would moderate the relationship between social distance desired from the targets and group assignment (thought vs action). In terms of the expected moderation, it was expected that individuals lower on the continuum of OC tendencies would see vast differences between the targets who had only thoughts and targets who were detailed to have problematic (violent, sexual, or blasphemous) actions. As a result, for individuals lower on the continuum of OC, it was expected social distance would be far greater in the action as opposed to the thoughts condition. For individuals higher in OC, it was expected, due to the concept of "thought-action fusion," that they would see thoughts and actions similarly. Specifically, it was expected participants with high OC levels would desire the same amount of social distance from vignette targets in the thought and in the action vignettes. To test these hypotheses, three separate moderation analyses were conducted, one for each type of content - sexual, violent, and blasphemous. Using Hayes PROCESS Macro, moderation analyses were conducted with thought vs. action as the predictor, OC tendencies as the moderator and social distance as the outcome. For the sexual content type, gender of the participant was entered as a covariate. The continuous variable was centered, Model I with 5,000 bootstrap samples. Where the moderation was found to be significant, simple slope analyses were conducted.

For the violent content type, the overall model was found to be significant [$F(3, 183) = 44.23$ $p < .001$, $R^2 = .42$]. Thought vs action was a significant predictor, [$b = -10.58$, $t(183) = -8.68$, $p < .001$], such that participants desired less social distance from the target with the violent thought than they did the target with the violent action. OC tendencies was also found to be a significant predictor, [$b = -.12$, $t(183) = -5.44$, $p < .001$], such that, counter to hypothesis,

participants with higher OC tendencies desired less social distance from the vignette targets than did participants with lower OC tendencies. Moreover, the interaction between thought vs. action and OC tendencies was significant [b =.19, $t(183) = 4.25$, $p < .001$]. Examination of simple slopes indicated that for each level of OC (low, average, and high), participants desired more social distance from targets who acted on thoughts as opposed to targets who exclusively had thoughts. However, the difference was more pronounced for low and average OC participants than it was for high OC participants ($p < .001$ for both high and average OC tendencies, compared to $p = .04$ for high OC tendencies in terms of their relationship to social distance desired from the target when considering thought vs. action) (see Figure 1).

Figure 1

Table 1

Regression Model Violent Content Type

	coeff	se	t	p	LLCI	ULCI
constant	16.7559	.6091	27.5090	.0000	15.5541	17.9576
T_Coded	-10.5795	1.2182	-8.6845	.0000	-12.9831	-8.1760
OCISum	-.1228	.0226	-5.4375	.0000	-.1674	-.0783
Int_1	.1920	.0452	4.2505	.0000	.1029	.2812

For the sexual content type, the overall model was found to be significant [$F(4, 182) = 21.20$, $p < .001$, $R^2 = .32$]. Thought vs action was a significant predictor, [$b = -6.01$, $t(182) = -5.30$, $p < .001$], such that participants desired less social distance from the target with sexual thoughts than the did the target with sexual actions. In addition to thought vs action, OC tendencies was also found to be a significant predictor, [$b = -.12$, $t(182) = -5.57$, $p < .001$] such that, consistent with the violent condition and counter to hypotheses, high OC individuals desired less social distance from the vignette targets than low OC individuals. The interaction between thought vs. action and OC tendencies was significant as well [$b = .09$, $t(182) = 2.22$, $p = .03$]. Much like the violent content type, examination of simple slopes indicated that for each level of OC (low, average, and high), participants desired more social distance from targets who acted on thoughts as opposed to targets who exclusively had thoughts. Again, the difference was more pronounced for low and average OC participants ($p < .001$ for both) than it was for high OC participants ($p = .06$), see figure 2.

Figure 2

Table 2

Regression Model Sexual Content Type

	coeff	se	t	p	LLCI	ULCI
constant	18.3017	.6582	27.8046	.0000	17.0029	19.6004
T_Coded	-6.0094	1.1348	-5.2954	.0000	-8.2486	-3.7703
OCISum	-.1165	.0209	-5.5671	.0000	-.1578	-.0752
Int_1	.0928	.0419	2.2173	.0278	.0102	.1754

	coeff	se	t	p	LLCI	ULCI
gendernu	1.2258	.7113	1.7233	.0865	-.1777	2.6293

For the blasphemous content type, the overall model was found to be significant [$F(3, 183) = 23.51$ $p < .001$, $R^2 = .28$]. Thought vs action was a significant predictor, [$b = -8.36$, $t(183) = -6.52$, $p < .001$], indicating that, similarly to the violent and sexual conditions, participants desired more social distance from the vignette targets who engaged in a blasphemous action than they did the blasphemous thought. Unlike for the violent and sexual conditions, for the blasphemous condition, OC tendencies was not found to be a significant predictor, [$b = -.03$, $t(183) = -1.30$, $p = .19$], indicating no significant difference between levels of OC tendencies in participants and their desired social distance from targets. The interaction between thought vs. action and OC tendencies was significant [$b = .10$, $t(183) = 2.08$, $p = .04$]. Examination of simple slopes indicated that, similar to the violent and sexual content types, for each level of OC (low, average, and high), participants desired more social distance from targets who acted on thoughts when compared to targets who exclusively had thoughts. Likewise, the difference was more pronounced for low and average OC participants ($p < .001$ for both while $t = -6.87$ and $t = -8.05$ respectively) than it was for high OC participants ($p = .001$ and $t = -3.28$), see figure 3.

Figure 3

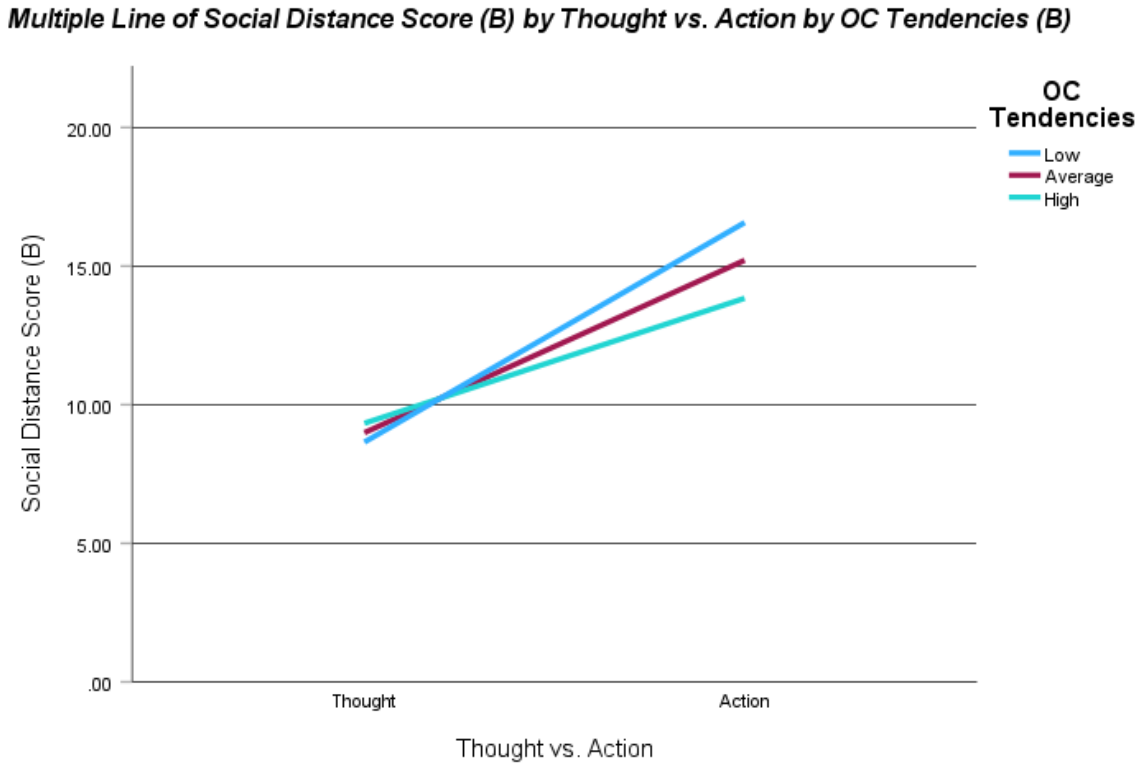

Table 3

Regression Model Blasphemous Content Type

	coeff (b)	se	t	p	LLCI	ULCI
constant	12.7548	.6412	19.8923	.0000	11.4897	14.0199
T_Coded	-8.3617	1.2824	-6.5205	.0000	-10.8919	-5.8316
OCISum	-.0309	.0238	-1.3010	.1949	-.0779	.0160
Int_1	.0988	.0476	2.0769	.0392	.0049	.1926

Table 4

Conditional effects of thought vs. action on social distance at values of the moderator:

OCISum	Effect	se	t	p	LLCI	ULCI
3.0000	-8.0654	1.1748	-6.8651	.0000	-10.3834	-5.7474
18.0000	-6.5838	.8183	-8.0458	.0000	-8.1982	-4.9693
42.0000	-4.2131	1.2844	-3.2802	.0012	-6.7473	-1.6790

Chapter 4

Discussion

The present study investigated appraisal of an intrusive thought of a hypothetical individual (i.e., a vignette target) vs. acting out the behavior of the thought while comparing OC tendencies in a non-clinical sample population. Participants were randomly assigned to either be shown vignettes describing three taboo thoughts (sexual, violent, blasphemous; thoughts group) or assigned vignettes describing the three taboo thoughts as actions (action group). Participants were given the OCI-R as a means to measure OC tendencies (Foa et al., 2002). Social distance from the target was then measured as a way to determine the participants' attitudes towards the vignette targets.

It was predicted that individuals with higher OC levels would desire more social distance from targets, regardless of their group assignment – thought or action. This expectation was based on previous research showing that individuals with higher levels of OC had stronger appraisals to taboo thoughts compared to individuals with lower OC tendencies (Corcoran & Woody 2008). Quite unexpectedly, participants with higher OC levels were actually found to desire the least social distance from targets across each content type compared to participants with average and lower OC tendencies. Cocoran and Woody (2008) collected data from participants who were undergraduate students. The present study, however, collected data from a general population. Although both non-clinical samples, this may be at least partially responsible for the unexpected results. This may indicate differences in OCD symptomatology and/or its expression between college students and the general population which might be worth exploring further. Although participants were not formally diagnosed with OCD, the cognitive model posits that OCD symptoms are on a spectrum (Wang & Clark, 2002). Thus, those with high OC

tendencies likely have experiences similar to those diagnosed with OCD, while those lower on the spectrum likely have fewer such experiences. A previous study also found that personal experience of mental disorders is associated with less social distance from those with mental disorders (Jorm & Oh, 2009). Those with OCD that score higher on obsessions subscales tend to also have higher scores on taboo thoughts symptom dimension scales (Brakoulias et al., 2013). Moreover, those who experience blasphemous, sexual, and/or violent taboo thoughts seem to be particularly vulnerable and prone to stigma and shame regarding treatment of their symptoms (Glazier, Wetterneck, Singh, & Williams, 2015). This may indicate a need to assess and provide education particularly for violent and sexual taboo thoughts. This education would likely be valuable across the continuum of OC levels and even in clinicians, as even clinicians have been found to have greater levels of stigma toward clients with aggressive and pedophilic taboo thoughts (Canavan, 2022). Previous research also found that knowledge of mental disorders is associated with less social distance (Jorm & Oh, 2009). On the other hand, participants with lower OC tendencies may be less familiar with mental disorders compared to participants with higher OC tendencies and, thus, evaluate them more harshly. Individuals with greater mental health literacy have also been found to have greater empathy which may have lead participants in the study with higher levels of OC to be more "forgiving" toward the target (Furnham & Sjokvist, 2017). Given these research findings, it could be possible those with higher OC tendencies in this study experienced taboo thoughts themselves and, thus, were more "forgiving" of the experience of the target. This may help explain the variation found between OC tendency levels in participants across the sexual and violent content types.

Additionally, Corcoran and Woody (2008) found that participants appraised taboo thoughts similarly regardless of whether the person in a vignette experiencing the thoughts was

detailed to be the participant themselves or a friend. However, Hezel et al. (2019) conducted a study exploring whether TAF bias is unique to one's own thoughts or if it is also applicable to how those with OCD evaluate others' thoughts. They utilized a revised version of the Thought-action Fusion Scale (TAF Scale; Shafran et al., 1996). The study found that people with certain anxiety disorders, including those with OCD, tend to evaluate their own thoughts as more dangerous than other people's thoughts (Hezel et al., 2019). Also, a study conducted by Berman et al. (2011) regarding TAF showed results indicating that thinking of a relative being diagnosed with cancer significantly increased distress, urges from the individual to neutralize the thought, mentally neutralizing behaviors, and feelings of likelihood that the thought would manifest into a real life occurrence compared to thinking of a stranger. Although previous research has shown that people with OCD appraise taboo thoughts more negatively than the normal population, because the target in the vignette was a stranger, this perhaps lessened some of the negative appraisal (i.e. increased desired social distance) that was anticipated by participants who had higher levels of OC regardless of content type (Brakoulias et al., 2013; Corcoran & Woody, 2008; Rachman, 1997).

There was also an expectation that OC tendencies would moderate the relationship between social distance desired from targets in the thoughts vs actions conditions. Specifically, it was expected that individuals lower on the continuum of OC tendencies would see vast differences between the targets who had only thoughts and targets who were detailed to have problematic (violent, sexual, or blasphemous) actions. As a result, for individuals lower on the continuum of OC tendencies, it was expected that social distance would be far greater in the action as opposed to the thoughts condition. This was predicted due to the expectation that those with lower OC levels would not experience TAF, as is consistent with previous research.

Analyses showed that OC tendencies did moderate the relationship between thought vs action and social distance in that participants with lower OC tendencies desired greater social distance from the target in the action condition compared to the thought condition for each content type. As mentioned above, these findings are most likely attributable to lower level OC participants not experiencing effects of TAF, consistent with the theory of TAF and cognitive model of OCD.

Because there was anticipation that OC level would moderate the relationship between social distance and group assignment (thought vs action), thouhgt vs. action was not expected to be a significant predictor. For individuals higher in OC, it was expected, due to the concept of "thought-action fusion," that they would see thoughts and actions similarly. Specifically, it was expected participants with higher OC levels would desire the same amount of social distance from vignette targets in the thought and in the action vignettes. This study, however, found that thought vs action was a significant predictor across all content types. Contrary to what was predicted, participants with higher OC levels also desired greater social distance from the action condition as relative to the thought condition. Consistent with previous research, it was found that for participants with lower levels of OC, their desired social distance from the target increased in the action condition compared to the thought condition as they likely did not experience TAF. As mentioned, it appeared individuals with higher levels of OC also had significant differences between the thought condition and the action condition for each of the content types. Yet, the differences in levels of desired social distance between thought and action were less pronounced for those who were high OC. This is consistent with previous research on the theory of TAF (Berle & Starcevic, 2005; Shafran & Rahman, 2004), though the effect did not emerge as powerfully as was predicted. These findings lead to a reasonable suspicion that the

effects of TAF are positively correlated with OC tendencies as Berle and Starcevic (2005) suggest.

Individuals tend to be more concerned about the potential consequences of a taboo thought if they feel responsible for the experience as opposed to believing someone else is actually responsible (Menzies, Harris, Cumming, & Einstein, 2000). This may have dampened some of the effects of TAF in participants with higher OC tendencies in the present study without eliminating the effect completely, perhaps explaining why there appeared to be a subtle TAF effect forparticipants with higher OC levels. There is also evidence that non-clinical sample populations endorse TAF statements to some extent (Rassin, 2001; Rassin, Merkelbach et al., 2001; Shafran et al., 1996), though clinical samples score higher on the TAF scale. It is important to note, however, that overlap between clinical and non-clinical samples does occur (Abramowitz, Whiteside, Lynam, & Kalsy, 2003; Shafran et al., 1996). Since scores on the TAF Scale are variable between clinical and non-clinical populations, it's likely that TAF can affect those with higher levels of OC who are not necessarily part of a clinical population. Pertaining to this study, participants with higher OC levels would then presumably experience higher levels of TAF while participants with average and lower levels of OC would not experience any effects of TAF. This may help explain the differences in social distance desired between thought vs action within differing levels of OC. Given the confusing findings, it would likely be beneficial for research to delve deeper into TAF and how it differs across the continuum of OC tendencies and not only those diagnosed with OCD.

Unlike the violent and sexual content types, surprisingly, OC level was not a significant predictor of social distance for the blaspehmous content type. Previous research has shown that blasphemous thoughts are not appraised as negatively as the sexual and violent intrusive

thoughts (Corcoran & Woody, 2008; Levine & Warman, 2016). Typically violent or sexual taboo thoughts are more socially rejected compared to blasphemous intrusive thoughts (Ponzini & Steinman, 2022; Steinberg & Wetterneck, 2016), which may be why OC level was not a significant predictor – perhaps the blasphemous thought was simply not that provocative in general.

Relationships have also been found between religiosity and obsessive-compulsive symptoms (Hutchinson, Patock-Pekham, Cheong, & Nagoshi, 1998; Sica, Norvara, & Sanavio, 2002). For example, there is evidence to show that people who are religious more strongly endorse TAF compared to nonreligious people (Rassin & Koster, 2003). Yorulmaz et al. (2004) claimed that differing patterns in religiosity between Western and Turkish cultures were why their results showed elevated TAF moral scores compared to TAF likelihood scores between participants. Studies have also shown that individuals who have higher levels of intrusive thoughts related to religion tend to also be more religious in both clinical and non-clinical populations (Abramowitz et al., 2004; Abramowitz et al., 2002; Greenberg & Shefler, 2002; Lewis & Maltby, 1995; Moron et al., 2022; Nelson, Abramowitz et al., 2006; Okasha et al., 1994; Sica, Novara, & Sanavio, 2002; Siev & Cohen, 2007; Steketee, Quay, & White, 1991). This highlights the importance of assessing for blasphemous intrusive thoughts in treatment when a client mentions identification with religion or spirituality.

Although affiliation with religion is increasing across the globe, in the United States, religious affiliation is currently declining with an increase in individuals who identify as atheist or agnostic (Pew Research Center, 2015). With these findings and religious trends in mind, perhaps participants in this study were not particularly religious. Participants coming from a country with decreasing religiosity may have led to the decreased likelihood of TAF as well as

decreased negative appraisal of blasphemous content and, thus, differences in social distance to occur for the blasphemous content type. It will remain unknown at this time as this study did not collect data on participants' religious identity or their level of religiosity.

As Corcoran and Woody (2008) point out, although the vignettes contradict social norms, some of the vignettes may have violated participants' personal values more than others. What appears to cause distress with taboo thoughts is how much the thought deviates from valued aspects of the self (Rowa & Purdon, 2003). The vignettes from the violent and sexual content types involve an identified victim who is personally harmed by a target. In the blasphemous vignettes, however, the disturbing act/thought does not have a specific identifiable victim. In this content type, the victim is more abstract and involves disrespect to a personal belief system and physical damage to an object. Considering that there is no identifiable victim and that participants were likely not particularly religious, this may have weakened their negative appraisal of the blasphemous content.

Limitations

Although this study had enough participants to run analyses, having an increased sample size could have allowed for anlysis of more specific demographic variables rather than dichotomous variables such as male/female and white/non-white. Increased sample size may have also allowed for more power to find significant relationships that this particular study was not able to. Although mTurk has become popular as a means to collect participant data, particularly for its ease of access and administration (Aguinis, Villamor, & Ramani, 2021), it does not come without drawbacks. The sample population from mTurk is not immune to limitations including self-misrepresentation, high attrition, and social desirability bias (Aguinis, Villamor, & Ramani, 2021). Additionally, a manipulation check can only go so far into

determining whether participants answered questions with intent; the anonymity of mTurk may have created a situation where participants were less honest and thus less accurate in their responses. Moreover, vignettes have limited ability in replicating how someone may react in person compared to answering to prompts provided via the internet (Link, Yang, Phelan, & Collins, 2004). Content validity is difficult to measure for vignettes as there is a sizeable amount of variability in how they are constructed. For example in the sexual vignettes the victim was the target's niece. There may have been a different effect found if the victim had been a stranger (Berman et al., 2011). Also, in the informed consent, participants are told the target is hypothetical. Perhaps, this had an influence on participant's appraisal of the target compared to a real life target. Additionally, there may have been a confound in not including guilt felt by the target in the action vignettes unlike the thought vignettes. This could have influenced findings because the emotional impact of the experience was not balanced across the vignettes. Lastly, not collecting demographic data on religiosity of participants was a limitation of this study as it could not then be used as a variable to determine if it was related to social distance and should be considered a covariate in the moderation analyses.

The mixed findings in this study iterate the necessity of future research in this area in order to clarify our understanding of OC tendencies, TAF, and attitudes towards intrusive thoughts as well as the relationships they have and do not have with each other. Future research should attempt to reduce some of the limitations this study had as a way to create results that are more robust. Although studies examining individuals lower on the continuum of OC traits is a popular way of inferring these processes in individuals with OCD (Corcoran & Woody, 2008; Lee & Kwon, 2003; Levine & Warman, 2015; Rachman & de Silva, 1978), it is important to note

that if this study were conducted with a clinical sample population, entirely different findings may emerge.

Conclusion

The purpose of this study was to broaden the scope of understanding of the cognitive model, OCD, TAF, stigma, and intrusive thoughts. OCD and intrusive thoughts can cause distress in both clinical and non-clinical samples which necessitates the importance of increased knowledge regarding this subject of research. This can be further exacerbated through stigma and attitudes towards intrusive thoughts. In this study, OC tendencies did moderate the relationship between thought vs action and social distance, though effects were not as pronounced as was hypothesized. Future research appraising actions in others while exploring TAF and comparing clinical OCD and non-clinical samples may shed light on the findings of the current study.

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Appendices

Appendix A: Obsessive-Compulsive Inventory – Revised (OCI-R)

The following statements refer to experiences that many people have in their everyday lives. Circle the number that best describes HOW MUCH that experience has DISTRESSED or BOTHERED you during the PAST MONTH. The numbers refer to the following verbal labels.

0 Not at all	1 A little	2 Moderately	3 A lot	4 Extremely

1. I have saved up so many things that they get in the way.	0 1 2 3 4
2. I check things more often than necessary.	0 1 2 3 4
3. I get upset if objects are not arranged properly.	0 1 2 3 4
4. I feel compelled to count while I am doing things.	0 1 2 3 4
5. I find it difficult to touch an object when I know it has been touched by strangers or certain people.	0 1 2 3 4
6. I find it difficult to control my own thoughts.	0 1 2 3 4
7. I collect things I don't need.	0 1 2 3 4
8. I repeatedly check doors, windows, drawers, etc.	0 1 2 3 4
9. I get upset if others change the way I have arranged things.	0 1 2 3 4
10. I feel I have to repeat certain numbers.	0 1 2 3 4
11. I sometimes have to wash or clean myself simply because I feel contaminated.	0 1 2 3 4
12. I am upset by unpleasant thoughts that come into my mind against my will.	0 1 2 3 4
13. I avoid throwing things away because I am afraid I might need them later.	0 1 2 3 4
14. I repeatedly check gas and water taps and light switches after turning them off.	0 1 2 3 4
15. I need things to be arranged in a particular way.	0 1 2 3 4
16. I feel that there are good and bad numbers.	0 1 2 3 4
17. I wash my hands more often and longer than necessary.	0 1 2 3 4
18. I frequently get nasty thoughts and have difficulty getting rid of them.	0 1 2 3 4

Appendix B: Social Distance Scale

Please answer the following questions about Larry, the person you just read about.

	Definitely Unwilling	Probably Unwilling	Probably Willing	Definitely Willing
How would you feel about renting a room in your home to someone like Larry?				
How about working on the same job as someone like Larry?				
How would you feel having someone like Larry as a neighbor?				
How about as the caretaker of your children for a couple of hours?				
How about having your children marry someone like Larry?				
How would you feel about introducing Larry to a friend?				
How would you feel about recommending someone like Larry for a job working for a friend of yours?				

Please answer the following questions about Alex, the person you just read about.

	Definitely Unwilling	Probably Unwilling	Probably Willing	Definitely Willing
How would you feel about renting a room in your home to someone like Alex?				
How about working on the same job as someone like Alex?				
How would you feel having someone like Alex as a neighbor?				
How about as the caretaker of your children for a couple of hours?				
How about having your children marry someone like Alex?				
How would you feel about introducing Alex to a friend?				
How would you feel about recommending someone like Alex for a job working for a friend of yours?				

Please answer the following questions about Joe, the person you just read about.

	Definitely Unwilling	Probably Unwilling	Probably Willing	Definitely Willing
How would you feel about renting a room in your home to someone like Joe?				
How about working on the same job as someone like Joe?				
How would you feel having someone like Joe as a neighbor?				
How about as the caretaker of your children for a couple of hours?				
How about having your children marry someone like Joe?				
How would you feel about introducing Joe to a friend?				
How would you feel about recommending someone like Joe for a job working for a friend of yours?				

Appendix C: Vignettes

Thought

1. Several times per week while stopped at a crosswalk waiting for an elderly pedestrian to cross the street, Larry has a sudden, horrific impulse to run them over in his car. Larry is very upset about having this thought.
2. Several times per week while helping his niece use the bathroom, Alex has a sudden, intrusive sexual thought about his niece. Alex is very upset about having this thought.
3. Joe is a very religious person. Several times per week while engaged in silent prayer, he has a sudden, terrible image of urinating on the Bible. Joe is very upset about having this thought.

Action

4. While stopped at a crosswalk waiting for an elderly pedestrian to cross the street, Larry decided to run them over in his car and drive away from the scene.
5. While helping his niece use the bathroom, Alex performed sexual acts with the child.
6. Joe is a very religious person. While engaged in silent prayer, he urinated on the Bible.