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by

Matthew Logan Brooks

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**The Dissertation Committee for Matthew Logan Brooks Certifies that this is the  
approved version of the following dissertation:**

**Can Those Immersed in the Group Look Beyond it? Links Between  
Identity Fusion and Group-Related Communication and Guilt**

**Committee:**

---

William B. Swann, Jr., Supervisor

---

Samuel D. Gosling

---

Ami Pedahzur

---

John G. Hixon

---

James W. Pennebaker

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**by**

**Matthew Logan Brooks, B.A.**

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## **Dedication**

I dedicate this dissertation to my mother, without whose work this work would never have been possible.

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I would like to acknowledge my lab for the substantial help they gave me in completing this project. My advisor, Bill Swann, has worked closely with me on identity fusion research during my entire career at the University of Texas at Austin. Thanks to Dr. Swann, I have learned how to craft, write, and publish extremely complicated academic pieces in a way that is thoughtful and accessible to the reader. I am also grateful to Dr. Swann for guiding me through the process of writing my dissertation (including giving me comments multiple times, despite giving him partially finished drafts) as well as helping me successfully defend my dissertation to my committee.

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# **Can Those Immersed in the Group Look Beyond it? Links Between Identity Fusion and Group-Related Communication and Guilt**

Matthew Logan Brooks, Ph.D.

The University of Texas at Austin, 2012

Supervisor: William B. Swann, Jr.

Research on identity fusion (Swann, Gomez, Seyle, & Morales, 2009), a recent phenomenological approach to social identification, suggests that some people have a deep personal bond with a group that they belong to. Evidence shows that fused people have a persistent connection between their group identity and personal selves. The notion of a social identity that is deeply entwined with the personal self stands in contrast to traditional views of social identification (e.g. Self-Categorization Theory; Turner, Oakes, Haslam, & McGarty, 1994), which tend to see group membership as something that is only important in particular group-related situations. Whereas most people are able to compartmentalize their identities based on the context they are in, a fused group identity can be active even in situations that are unrelated to it. The ability to compartmentalize may be beneficial in some cases, however. Downplaying an identity that is not active can allow people to insulate themselves from negative information about the group and can improve the quality of social interactions. Without the ability to compartmentalize, people who are fused with a group may have trouble with both of these things.

Three studies tested whether fused people do indeed experience such repercussions. The first study presented University of Texas students with a fake news story describing the school hurting local family farmers. Participants who were highly identified with UT were more likely to feel guilty after reading the story, while participants who were highly fused with UT were more likely to engage in a subsequent charitable task (whether they read the news story or were in a control condition). In the second study, UT students were asked to chat with each other about a variety of topics, and have the quality of their interactions linguistically analyzed. The final study had UT students write about either their relationship with UT or with their immediate family. Participants who were more highly fused with UT were less likely to use words signifying negative emotion or uncertainty, but were more likely to use inclusive pronouns. Implications for future research on identity fusion are discussed.

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## **Chapter 1: Introduction**

In the infamous World Trade Center attack on September 11<sup>th</sup>, a group of terrorists killed themselves to further the goals of a group they belonged to. In many ways, these people were indistinguishable from other members of their group. Most were well educated and did not have any apparent psychological problems. Yet something drove them to undertake an incredibly extreme action beyond what most other group members might be willing to do. Given that these people were seemingly normal, what is it that motivates them to kill themselves for their group? Identity fusion (Swann, Jetten, Gomez, Whitehouse, & Bastian, in press), a recent approach to group alignment, attempts to answer these questions by pointing to certain group members whose personal selves become ‘fused’ with their social identity. For these people, personal goals and group goals are one and the same, potentially explaining how behavior such as self-sacrifice on behalf of a group might occur. However, while much attention has been given to what a fused person is willing to do for the group, less has been paid to the personal repercussions that the fused relationship carries with it.

The notion of a social identity that is deeply entwined with the personal self stands in contrast to traditional views of social identification (e.g. Self-Categorization Theory; Turner, Oakes, Haslam, & McGarty, 1994), which tend to see group membership as something that is only important in particular, group-related situations. This perspective is bolstered by evidence that people are able to compartmentalize their social identities so that appropriate identities are active in the correct contexts but not in other

contexts (Hugenberg & Bodenhausen, 2004). Fused people, however, do not seem to compartmentalize their personal self and fused social identity; the two are so closely tied that they are always ‘turned on’. While this does motivate strong pro-group behavior, there may also be situations in which it would be better if the fused social identity were ‘turned off’.

This dissertation seeks to expand on previous research on identity fusion by looking at two particular ways in which the fused person’s inability to compartmentalize could have negative repercussions. This will expand the body of research on identity fusion as well as serve to further distinguish identity fusion from traditional conceptions of group identification. The following chapters will review literature associated with both the fusion and traditional identification approaches to social identity, discuss the possible ramifications of a lack of compartmentalization, and review three studies which explore whether fused people are indeed put at a personal disadvantage by their relationship with their group.

## **Chapter 2: Identity Fusion**

Social psychologists (and other academic domains interested in group behavior) have long explored why people identify with and act on behalf of social groups. The most influential models of group processes have traditionally been social identity theory (SIT; e.g., Tajfel & Turner, 1979) and self-categorization theory (SCT; e.g., Turner, et al., 1994). Both approaches view group identification as a driving factor in our tendency to derogate members of out-groups (e.g., Branscombe, Ellemers, Spears & Doosje, 1999; Brewer, 1999) and to view fellow in-group members more positively (e.g., Hewstone, Rubin & Willis, 2002; Klar & Giladi, 1997; Voci, 2006).

The group identification construct is premised on the distinction between personal and group identities (James, 1890/1950; Tajfel & Turner, 1979). Personal identities are derived from those aspects of the self that are unique to the individual self (e.g., “athletic” or “eccentric”). Social identities result from membership in social groups (e.g., “American” or “Democrat”) and align people with other group members. According to traditional views of group identification such as SIT, such group memberships trade off with the personal self (e.g. Turner, 1985). That is, much like a hydraulic system, one goes up only as the other goes down. That means that an activated group identity reduces the salience of the personal self until such time as the group identity is no longer active. This “functional antagonism” removes the influence of the personal self, thus guiding their behavior and decisions according to the agenda of the group rather than any sort of personal agenda (Turner, 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). The hydraulic conception of identity (and the emphasis on the importance of context) is

consistent with widespread and influential views of social identity such as SIT and SCT (although some social identity theorists disagree with this approach, cf. Codol, 1975; Deschamps, 1982; Postmes & Jetten, 2006; Simon 2004; Simon & Kampmeir, 2001; Spears, 2001).

The identity fusion formulation, in contrast, eschews this hydraulic view of social identification in favor of a process in which the personal self and group self combine to become simultaneously active and influential, also called *identity synergy*. This is not the case for all group members, but rather for a subset of ‘fused’ people who have a particularly strong bond with the group. This bond manifests itself in a few key ways (e.g. Gomez, Brooks, Buhrmester, Vazquez, Jetten, & Swann, 2011). First, the fused person tends to have a subjective feeling of “shared essence” or “oneness” with the group, a belief that the personal self and that the group and self share some fundamental or core qualities. Second is a feeling of reciprocal strength of the self and group, a sense that the self and group strengthen one another. As fused people draw strength from the group and vice versa, there is the perception that both the self and group are increasingly invulnerable and able to overcome challenges and resist threats.

Support for the principle of identity synergy comes from an early fusion study investigating whether activating the personal self would, in turn, also activate the group self for a fused person (Swann, Gomez, Seyle, Morales, & Huici, 2009; Study 3). Researchers asked Spanish high school students how willing they would be to die for their country after giving them one of three manipulations- control, personal identity activation, or social identity activation (i.e. Spain). Results showed that fused participants

were more likely to be willing to die for Spain whether they got the group activation *or* the personal activation (relative to control). However, non-fused participants were relatively more likely to be willing to die for the group when given the group identity activation, but were unlikely to be willing to die for the group when they got either the control or personal identity manipulation. This finding is particularly important because it runs in direct opposition to what would be predicted by the hydraulic view of social identification.

This simultaneous or *dual activation* of the personal and group selves reflects not just an important theoretical departure from traditional identification but also one of the key factors underlying the motivational power of identity fusion. Since the personal self is able to remain active when the group identity is salient, the fused person is influenced by both at once. This allows the group to achieve a level of motivational importance that is usually reserved for the self and the people closest to it. It also implies a consistent level of activation for the group identity- at least insofar as the self is active. This is supported by evidence that fused people were particularly likely to endorse fighting and dying for their country and appeared to equate threats to the group with threats to the self (e.g., Swann et al., 2009) and are inclined to endorse self-sacrifice when either their personal or social identities have been activated (Swann et. al., 2009) or when their feelings of agency are amplified by physiological arousal (Swann, Gomez, Huici, Morales, & Hixon, 2010a). Fusion also predicts overt behavior, such as donation of personal funds to an in-group member (Swann et al., 2010a) and the tendency for transsexuals to undergo dangerous surgeries to become their target gender (Swann et al.,



under review). Furthermore, these effects were all observed while controlling for group identification.

A related aspect of the distinction between fusion and traditional identification is how they relate to “relational” vs. “collective” ties to other group members. Similar to previous work on relational ties (e.g. Aron, Aron, Tudor, & Nelson, 1991; Markus & Kitayama, 1991), fused people tend to have a close personal connection to fellow group members akin to that seen between family members (Jetten, Gómez, Buhrmester, Brooks, & Swann, in prep.). A relational orientation to the group is marked by the strength and closeness of the attachments it creates between group members (and, ultimately, the group itself). In contrast, collective ties are based on the perception of overlap between one’s own characteristics and prototypical properties of the in-group (e.g. shared qualities or outcomes, commitment to a common goal). Whereas members of relational groups tend to view their fellow group members as unique and hence irreplaceable members of a larger metaphorical “family” (Brewer & Gardner, 1996), members of collective groups perceive fellow members as categorically undifferentiated and interchangeable (e.g. Tajfel & Turner, 1979; Turner et al., 1987). Thus collective ties, consistent with traditional approaches to social identification, focus more on categorical overlap between the person and the group.

#### **THE PICTORIAL SCALE OF IDENTITY FUSION**

Identity fusion was originally measured using an adaptation of a pictorial scale designed to assess attachment in close relationships (e.g. Aron et al., 1992). The “Inclusion of Other in Self” scale (IOS) used a series of pictures implying overlap

between the two people in the relationship. This was designed to measure their “sense of being interconnected with another,” a feeling that is manifested by a tendency to view the self as “including resources, perspectives, and characteristics of the other” (Aron et al., 1992, p. 598). Several groups researchers (Coats, Smith, Claypool, & Banner, 2000; Smith & Henry, 1996; Tropp & Wright, 2001) adapted the IOS measure to capture alignment of respondents with groups. Schubert and Otten (2002) extended this work by adding an option in which the self and group were completely overlapping. Swann et al. (2009) further modified this measure by creating a scale in which participants selected from among five pictures the one which best represented their relationship with the group. This pictorial scale is displayed in Figure 2.1. Scores on the scale are distributed

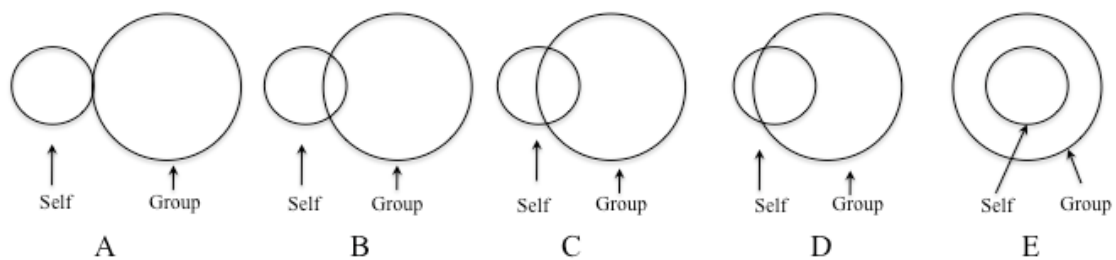


Figure 2.1: Pictorial Measure of Identity Fusion

bi-modally, with “fused” persons selecting the most extreme option in which the circle representing the “self” was completely immersed in the larger circle representing the “group” and non-fused persons selecting the other four options (for a detailed discussion of the psychometric properties of the pictorial scale of identity fusion, see Swann et al., 2009).

The pictorial measure of identity fusion has been compared to a variety of identification measures including Jetten, Branscombe, Schmitt and Spears (2001), Mael and Ashforth (1992), Tropp and Wright (2001), and Leach et al. (2008). Of these scales, Mael and Ashforth has repeatedly proven to be the most competitive with the fusion scale in terms of predicting effects in various fusion studies (Gomez et al., 2011). The Mael and Ashforth scale is also the most prolific of the identification scales, with over 700 citations on the Psycinfo database (as compared to the fewer than 100 citations for any of the other scales). The scale includes items such as “My group’s successes are my successes,” which asks the person to acknowledge shared fate with the group. This notion of shared outcomes is common to the form of self/group alignment that traditional measures of identification tend to focus on. In recognizing the impact of the group’s fate on the self, however, they do not necessarily acknowledge the potential for the opposite, self-to-group, influence processes, as in “My successes are the group’s successes”.

By considering the mutual influence of the personal self and the group, fusion distinguishes itself from other measures of identification in a few ways. First, while fusion focuses on the relationship between the personal self and the group self (consistent with identity synergy), identification focuses purely on the group identity (consistent with functional antagonism). Second, the fusion measure is more successful at predicting extreme behavior. Incorporating the personal self gives fused people a more potent sort of motivation that would not be expected from the influence of the group identity alone. Third, fused people see their fellow group members in closer, relational terms.

Identification treats other group members as representative of the group, but interchangeable and not personally meaningful.

Initial experiments with the pictorial fusion scale showed it to be psychometrically sound. It displayed respectable levels of temporal stability ( $r(618) = .56, p < .001$ ), over 6 months) and was modestly correlated with identification ( $r$ 's = .30-.40) (Swann et al., 2009; Gomez et al., 2011). As mentioned above, the fusion measure was also able to predict endorsement of various types of extreme behavior on behalf of the group while controlling for identification. One particularly interesting study used variations on the classic trolley dilemma to assess willingness for group-related self-sacrifice. Participants were told to imagine that they were standing on a footbridge watching a run-away trolley head towards in-group members. They were then asked whether they would be willing to jump off the bridge, killing themselves but preventing the trolley from killing the in-group members. Fused people were much more likely to endorse this self-sacrifice than were non-fused people (Swann, Gomez, Dovidio, Hart, & Jetten, 2010b). Identification, however, was not able to predict the effect. Furthermore, fused people were still willing to endorse self-sacrifice (although less so) when another in-group member was prepared to jump if they decided not to.

#### **DEVELOPMENT OF A VERBAL MEASURE OF IDENTITY FUSION**

Despite the apparent success of the pictorial fusion measure, there were still some doubts about what participants were actually endorsing when selecting the fused option. Participants' informal accounts (Swann et al., 2009) generally supported the notion that fusion does indeed reflect the connectedness and reciprocal strength elements that are

thought to underlie the construct. That being said, the validity of retrospective reports has been challenged (e.g. Nisbett & Wilson, 1977). Furthermore, some exploratory research revealed that, at least in one sample, upwards of 20% of respondents who picked the fused option (with America) said that they did so because they were physically located inside America. Lastly, while using a single-item measure makes for easy data collection, the reliability of such measures has been questioned (e.g., Churchill, 1979; Guilford, 1954; Nunnally, 1978)

To address these problems, Gomez et al. (2011) developed and validated a verbal measure of identity fusion. This measure was designed to specifically focus on the constructs believed to underlie fusion in hopes that this would remove much of the ambiguity associated with the pictorial measure. The new verbal measure of identity fusion was developed using parallel samples of American and Spanish participants. The measure was designed to tap both of the core components of identity fusion: (a) perception of connectedness with the group and (b) reciprocal strength. Items focusing on connectedness are: “I am one with my country”, “I feel immersed in my country”, “I have a deep emotional bond with my country”, and “My country is me.” Items focusing on reciprocal strength are: “I’ll do more for my country than any of the other group members would do”, “I am strong because of my country”, and “I make my country strong.”

The verbal fusion measure proved to be extremely successful (see Gomez et al., 2011 for a more complete discussion of the validation of the measure). Not only did the measure predict the same extreme behavior outcomes (e.g. willingness to fight or die and the trolley dilemma) while controlling for identification, it consistently out-predicted the

pictorial measure. A 6-month test-retest showed that the temporal stability of the verbal scale ( $r(618) = .71$ ) was considerably higher than that of the pictorial measure.

The stability of the fusion construct sets it apart from other measures of group alignment. Although not actually a trait, fusion does maintain a consistency over time that would normally be associated more with trait measures than identification measures. However, fusion is conspicuously unrelated to actual traits. Attempts to predict the development or likelihood of fusion with personality or other dispositional variables has thus far been unsuccessful, although some have attempted to explain the development of fusion from an evolutionary or sociocultural perspective (see Swann et al., in press).

Factor analysis was also promising, as it showed the verbal fusion items loading as a completely separate factor from the Mael and Ashforth items and with an alpha of .83. These data indicate that fusion is not merely “identification plus” but is instead a distinct construct that taps into a unique form of the relationship between the self and the group. Further validity assessments showed that the verbal fusion measure, as expected, is related to feelings of group-related agency as well as group-related invulnerability (which, in turn, is related to the shared strength concept). Analyses revealed that scores on the verbal measure of fusion were independent of individual differences in self-concept clarity, empathy, aggressiveness, and weakly related to self-efficacy and essentialism. These findings are important, because they suggest that the temporal stability of scores on the verbal measure of fusion does not reflect a tendency for one of the foregoing traits to masquerade as fusion.

Perhaps most importantly for the purposes of this proposal, fusion researchers were able to replicate the earlier (Swann et al., 2009) finding regarding the dual activation of the personal and social self among fused persons. That is, while challenging the personal selves of people high in fusion amplified their pro-group behavior, it had no such impact on low scorers on the verbal measure of fusion (Gomez et al., 2011). This replication further supports the identity synergy principle, which says that the personal self and group self can both remain active at the same time for a fused person (in contrast to the functional antagonism perspective).

## **Chapter 3: The contextual self**

### **THE RISE OF THE CONTEXTUAL SELF**

The debate over how contextually dependent the self is stretches back at least as far as the work of James, who famously stated that “a man has as many social selves as there are individuals who recognize him and carry an image of him in their mind” (1890/1950, p. 294). This perspective was popularized by the symbolic interactionists (e.g. Cooley, 1902; Mead, 1934), who suggested that we glean self knowledge from observing how we fit into social situations. Their approach focused on the “social self” of James to the exclusion of his other more enduring aspects of the self such as the “empirical self” and the “spiritual self.” The focus on the mutability of the socially-based self continued with the work of Erving Goffman. His “dramaturgical approach” likened social interaction to actors performing roles on stage (Goffman, 1959). By assessing the nature of the scene and the expectation of the audience, as it were, people should be able to determine what the suitable role for that particular situation would be. In this sense the context of a situation is not just something that happens, but rather something that is arrived at and developed by all parties involved.

The most widely accepted theories of group identification continue the tradition of a situationally-focused perspective on the self. Approaches such as Self-Categorization Theory suggest that social identities are influential only insofar as they are currently active (e.g. Turner et al., 1994). A social identity that is active in a given situation will in turn make the self-attributes associated with that identity more salient or accessible (Brewer, 1991). For example, one study investigated whether people could more readily



classify traits as self-descriptive based on two factors: if they were actually descriptive of that person (vs. not) and if they were descriptive of an (experimentally activated) in-group (vs. a salient out-group). Results showed that, for traits that described the in-group, people were very quick to classify them as self-descriptive when they also matched existing self-views, but very slow to classify them when they were mismatched with self-views. Traits that described the out-group were classified at roughly the same, relatively slower speed regardless of whether they were actually self-descriptive or not (Smith & Henry, 1996). These findings show that our view of ourselves lines up with an active in-group. This seems to support the SCT perspective that context (which can generate that situational activation) is a very important factor in determining the salience of self-attributes.

#### **RECENT RESEARCH ON CONTEXTUAL IDENTITY**

The approach to social identification exemplified by this contextually-oriented research, as well as the SCT approach more generally, has been most recently encapsulated by the Multiple Self-Aspects Framework (MSF; McConnell, 2011). According to this model of self-organization, the overall self-concept (our most general view of ourselves) consists of a variety of self-aspects. These are different types of context-dependent roles such as group identities or roles associated with recurring situations (e.g. socializing at cocktail parties). Each self-aspect is in turn associated with a variety of attributes, or self-views (e.g. friendly or nervous). These attributes can be related to one or more of the self-aspects that a person possesses. The overall self-concept, rather than having any enduring qualities, varies according to whichever self-

aspects (and thus self-attributes) happen to be active at a given time. Consider, for example, Marie: a young woman who is attending a university and is a member of a sorority. If Marie is discussing school with her parents, her self-concepts of herself as a daughter and student might be active, along with the self-views associated with those self-concepts (e.g. loyal or studious), but her view of herself as a partier would not be active since it is associated with her sorority member self-aspect.

According to the MSF framework, a self-aspect's importance does not play a role in the influence it has on the self-concept. That is, even if Marie is very strongly tied to her sorority, those self-views are still only important if she is in a sorority-related context. MSF proponents counter arguments that certain attributes might be more centrally related to the self-concept (e.g. Higgins, King, & Mavin, 1982; Deaux, 1993) by saying that being related to multiple self-aspects simply gives them more opportunities for situational activation. They further support this perspective by pointing to evidence that even very chronically activated attributes still must have some contextual element involved to become salient (Brown & McConnell, 2009). In this sense, thinking more generally about the self, such as evaluating the implications of self-relevant feedback at a global level (e.g. Swann, Chang-Schneider, & McClarty, 2007), is not really possible, or at least useful. It would also be subject to whatever situational lens you are currently operating under. McConnell (2011, p. 10) suggests that one's reaction to feedback "is typically situated in a particular context, and its wider ramifications are determined by self-aspects and their organization in the self-knowledge network."

In sum, the research tradition for the importance of context for social identity is both well-established and still influential up to the present time. The goal of this project is not to dispute the veracity of these findings. Rather, it is to compare this perspective to the phenomenon of identity fusion, which seems to challenge the context-based framework. Although there is strong evidence for the contextual approach represented by SCT and the MSF, there is no way to account for the fusion findings (particularly identity synergy) reviewed previously. The next chapter will review work on identity compartmentalization, which is central to the discussion of how these two perspectives diverge.

## **Chapter 4: Identity Compartmentalization**

In the 2008 movie *The Hurt Locker*, an elite U.S. Army bomb specialist returns home to his family from an intense tour of duty in Iraq. Upon returning home, he finds that he has some trouble adapting back to family life. The daily tasks seem trivial and arbitrary and his attempts to discuss his military life with his wife are met with frustration. Ultimately, he decides that his Army identity is too important to who he is and leaves his family behind to volunteer for another tour of duty. In many ways, this character nicely captures what a highly fused person looks like. His military identity is deeply intertwined with his personal identity.

The tendency for his fused state to compromise his life with his family is troubling, though. Is it the case that fused people are unable to sustain meaningful relationships with those who are outside of their group? It may be that the importance of the fused identity stretches it across social contexts, making it difficult for fused people to get out of ‘group mode’ when they might need to. This chapter will discuss two ways in which this lack of compartmentalization may be problematic: situations where the person must deal with negative information about the group, and situations where the person has to engage in social interactions unrelated to the group. First, however, there will be a review of literature underlying the compartmentalization construct.

### *Separating identities by context*

While previous research involving the term ‘compartmentalization’ has focused on the affective qualities of identity organization (e.g. Showers, 2002; Showers & Zeigler-Hill 2007), this review focuses instead on how identities are separated from the

personal self (or other identities). Consistent with research on contextual identity, I propose that people are able to selectively deactivate identities that are not appropriate in a given situation. This chapter discusses evidence in support of compartmentalization as well as some of the advantages it may bring.

As mentioned in the previous chapter, the Smith & Henry study showed that activating an identity makes the personal attributes associated with it more self-relevant. Work on compartmentalization extends this finding by investigating how that self-relevance changes as we move between contexts. For example, one study had participants complete an identity prime and then select various small items (e.g. a magazine) to take with them when the study ended. Participants tended to select items that were consistent with the activated identity. However, when brought back after a filler task and primed with a different identity, participants expressed dissatisfaction with the items that they had selected earlier (LeBoeuf, Shafir, & Belyavsky, 2010). Not only does this reaffirm the contextual importance of identity, it shows that identities that are not currently active are downplayed.

In another study, students who were members of fraternities or sororities had their Greek identities primed and were then asked to complete a lexical decision task in which they identified whether words (either Greek-related, student-related, or neutral) were real or fake (i.e. pronounceable non-word letter strings). Participants who had had their Greek identity primed identified Greek-related words more quickly and identified student-related words more slowly than members of a control group (Hugenberg & Bodenhausen, 2004). The priming procedure had no effect on students who were not members of a

fraternity or sorority, which suggests that the finding relates to identity management. If the effect showed up for non-Greek students, it would suggest that the results are merely due to cognitive priming. McConnell, Rydell, & Brown (2009) performed an even more robust test of this finding. Rather than using generic attributes related to the identities in question, they had participants complete a pre-test to determine what self-aspects each of them associated with a particular identity. When participants completed a lexical decision task (similar to the one used in the previous paradigm), they once again found that participants found self-aspects related to an active identity more accessible (and those related to a inactive identity less accessible). This further suggests that people are changing how they deal with self-specific knowledge based on context.

Taken together, these findings indicate that people are able to compartmentalize an identity when a different, competing identity is active. Such a process is consistent with the context-focused view of social identity, and in fact strongly resembles the SCT principle of functional antagonism. However, these findings extend the scope of functional antagonism by showing that the qualities associated with an inactive identity are actually repressed (in terms of their association with the self). We have already seen that fused people do not necessarily display this pattern. As mentioned earlier (regarding the identity fusion principle of identity synergy), Study 3 of the Swann et al. (2009) paper demonstrated that participants fused with Spain still behaved as if their Spanish identity was activated, even when it had not been. This makes sense considering the nature of identity fusion. People who are fused with a group feel very passionately about it. The group that they are fused with takes a singularly important role in their lives, different

from other social identities that they may hold. Therefore we would expect a fused identity to be chronically activated.

This analysis points to an inconsistency between identity fusion and the context-based perspectives. There is ample evidence that people can and do compartmentalize their identities across contexts, yet there is also evidence that fused people may represent an exception to this rule. I am interested in exploring the implications of the latter possibility. The first step to answering this question is to consider *why* people compartmentalize. As the example at the top of the chapter illustrates, there are times when having a dominant central identity may be problematic. Although there has not been much research looking at the benefits of compartmentalizing identities, it may serve two functions. The first is in facilitating social interactions (i.e. ensuring that we are able to communicate effectively with other people in a given social situation), and the second is protecting against group-related negativity (i.e. reacting to information that portrays the group in a negative light). Each of these will be considered in turn.

#### **COMPARTMENTALIZATION AND GROUP-RELATED NEGATIVITY**

When something bad happens to a group, such as information being revealed showing that the group committed some reprehensible act in the past, the members of that group have to decide how they should personally react. Is this something they feel distressed about? Or is it just an unfortunate event that can be brushed off? Social identification researchers have investigated the role that the strength of group identification plays in predicting how people respond to feelings of group-related guilt (Doosje, Branscombe, Spears, & Manstead, 1998). Due to their flexible attachment to the

group, low identifiers are able to shrug it off when something bad happens to the group. Sometimes called ‘fair-weather fans’, these group members enjoy the group’s successes but are quick to separate themselves from the group after a failure (Wann & Branscombe, 1990). At the same time, they are also more likely to acknowledge the group’s faults after finding out negative information about the group, and often experience guilt in response to that information (Doosje et al., 1998).

High identifiers, on the other hand, are too closely tied to their group to be able to fully acknowledge the collective guilt that such negative information should arouse. Doing so would implicate an identity that is highly important to them. Their response to group-threatening information is thus more complex. Instead of dealing directly with the repercussions of the guilt-inducing information, high identifiers have a variety of mechanisms that protect them from the full effects of their group-related guilt (Ellemers, Spears, & Doosje, 2002). These include distinguishing their group from out-groups (Spears, Doosje, & Ellemers, 1997), emphasizing the closeness of their group (Doosje, Ellemers, & Spears, 1995), and increasing competitiveness with other groups (Steele, 1987). Shoring up their pro-group feelings in these ways allows high identifiers to side-step the full implications of the negative information. This is reflected in high identifiers’ tendency to ignore past information that reflects poorly on the group (Doosje et al., 1998). Most importantly here, high identifiers do not respond to collective guilt with any *personal* negative emotions such as guilt or sadness (Crisp, Heuston, Farr, & Turner, 2007; Doosje et al., 1998). Instead, they are able to use the group-related defense mechanisms to insulate the personal self from the activities of the social self. Although



this type of compartmentalization precludes dealing with the source of the threat, it does serve as an adaptive way to protect against it.

If fused people are unable to separate their group identity from their personal self, they may not be able to handle the threat of group-related negativity in the manner as highly identified persons. Although fused people might be able to engage in some of the defense mechanisms observed with high identifiers to shore up pro-group feelings, it seems unlikely that they would be able to fully insulate themselves from the effects of the guilt-inducing information. Indeed, there is already some evidence that fused people experience group-based negativity on a personal level. A survey conducted during the 2008 elections in the US and Spain found that people who were fused with their political party were more likely to believe that their personal lives would be significantly worsened after a loss (Buhrmester et al., under review). People who were highly identified (but not fused) with their party did not share this belief. This suggests that fused people do indeed internalize negative information about their group.

#### **COMPARTMENTALIZATION AND SOCIAL INTERACTION**

The previous chapter raised the example of Marie, who is a college student, a member of a sorority, and a devoted daughter. Although these identities may all be important to Marie, they are also distinct. That is, when Marie comes home to her family she might not emphasize how much she likes to go out and party with her sorority sisters. Although this is sometimes a large part of Marie's life, her parents may not be as accepting of it and probably wouldn't appreciate Marie bringing up her drunken escapades while sitting around the dinner table. Compartmentalization may help facilitate

this process. If the self-aspects associated with her sorority identity are inhibited while she is in a family context, it is less likely that they will come to the surface during her interactions with her parents. This, in turn, reduces the likelihood that interactions with her family will include awkward or inappropriate subjects.

This perspective is consistent with research on self-verification theory, which suggests that identity negotiation occurs in such a way as to ensure smooth social interactions (e.g. Swann, 1983; Swann & Bosson, 2010). According to self-verification researchers, we prefer it when people view us in a manner that is consistent with how we view ourselves. In fact, people will generally choose to interact with someone who views them the way they view themselves even when that self-view is negative (see Swann & Bosson, 2008). Being surrounded by people who view us accurately simplifies things. Having to remember which ‘version’ of yourself to present to any given person would be impossible in the long run. In fact, social relationships in which there is a mismatch between a person’s self-views and her interaction partner’s views of her will tend to be weaker (Swann, De La Rhonde, & Hixon, 1994). Having self-views that are appropriate to a social context become active in that context should increase the chances that interaction partners will get the correct impression, thus streamlining social interactions.

Fused people, on the other hand, may not always enjoy this advantage. They should have no problem in a context that is consistent with their fused identity; shifting contexts, however, could be problematic. A fused person who finds herself in a social situation that is totally unrelated to the fused identity may be unable to ‘take off the hat’ of the fused group, so to speak. For example, this would be like sending a diehard

University of Texas football fan into a room full of Oklahoma University loyalists. While the prudent course would be to downplay her UT affiliation and instead discuss their shared love of barbecue, the fused UT loyalist might still be inclined to loudly declare her disdain for the OU athletic program (to the detriment of her social relationships with those around her). Therefore it is important to consider whether fused people do have trouble with social interactions that identity compartmentalization would normally facilitate.

## **CURRENT RESEARCH**

Identity fusion research provides an important perspective on social identity. Previous approaches, most notably self categorization theory and the multiple self-aspect framework, suggest that we re-organize our self-concepts depending on what situation we happen to be in. Indeed, much of their research bears out this notion. However, identity fusion highlights another class of group member that has a different, more passionate relationship with their group. The consequences of this relationship have primarily been investigated by fusion researchers in terms of the effects on pro-group behavior. However, comparatively little research has been conducted on the disadvantages that being highly fused with a group might have on a person. As chapter 2 highlights, research on identity fusion is important because it sheds light a group of people who have the potential to profoundly affect their group. By studying the challenges that these people face in their personal lives, we may gain an even greater understanding of what drives them to act the way they do. The goal of this dissertation is to expand on work on identity fusion by researching the effects of not compartmentalizing the fused identity.

For the purposes of this project, I decided to focus on students at the University of Texas at Austin (UT). Aside from being a readily accessible population, prescreening data has consistently shown that many UT students feel highly fused with their school. Across all the participants included in this dissertation, the mean fusion with UT is 4.52 (on a 7-point scale). The top 20% of participants were above 5.46. The distribution of fusion scores can be seen in figure 4.1. Although scores appear generally normal, there is a strong positive skew centering on the mode of 5.29. Consistent with previous research on fusion, there were no predictors of whether people were more or less fused (including age, gender, and big-5 personality variables).

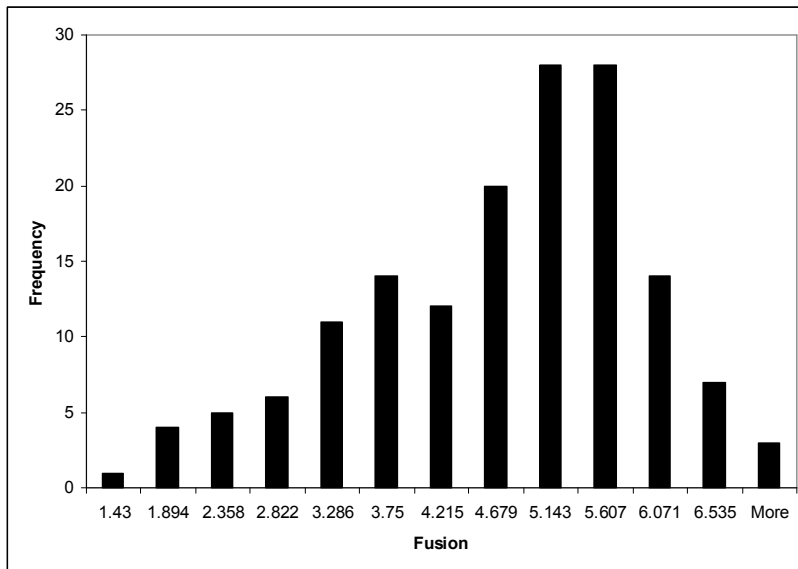


Figure 4.1: Distribution of Fusion Scores Across All Studies

Three studies were conducted in total. The first two examined whether fused people do indeed struggle with social interactions outside of the group context and with collective guilt in response to negative information about the group. In the first study,

participants in the experimental condition were given an ostensibly real news article which described UT taking land from poor local farmers. This story was designed to arouse feelings of guilt in participants. The participants were then given the chance to compensate for their *personal* feelings of guilt, with the expectation that people fused with UT would be more likely to engage in compensation. The second study experimentally manipulated a shift in social context by having small groups of UT students chat with each other online. Participants were instructed to discuss their lives at UT in the first chat (or a control topic), and then switch to discussing their lives away from UT (i.e. family and non-college friends) in a subsequent chat. The expectation was that participants high in fusion with UT would be less engaged in the second chat than they were in the first chat. The final study was designed to experimentally reduce fusion with UT in participants, in hopes that this could serve to alleviate the negative outcomes I expected to uncover in the first two studies. The third study had students engage in an in-depth writing task about their family/non-UT friends (or a control subject) before a trip back home, and then conducted a follow-up measure upon their return to see if the writing task improved relations with their family and reduced fusion with UT over the break.

## **Chapter 5: Study 1**

Identity fusion theorists have proposed that people who are fused with their group have a ‘porous boundary’ between the personal self and group self. This allows these two identities to exert an unusually high amount of influence on each other (Swann et al., in press). The most common, or at least most well-researched, form that this takes relates to pro-group behavior. Fused people have the motivational push of their personal selves reinforcing their drive to engage in such behaviors, making them conspicuously willing to engage in extreme behaviors that other group members might shy away from. In addition to allowing the personal self to influence the group self, the boundary also allows group-related factors to exert greater influence on the personal self of the fused person. Highly fused people were significantly more likely to believe that their personal lives would be profoundly negatively impacted by their political party losing a major election (Buhrmester et al., under review). Group members lower in fusion, while distraught at the loss, did not internalize it. A porous boundary may be able to let through the good (in the form of motivation), but it is also less likely to keep out the bad.

People who are highly identified with a group are surprisingly unaffected by negative, potentially guilt-inducing information about their group. When faced with evidence that their group has harmed others, group members lower in identification may endorse actions such as donating money (either personally or as a group) to the victimized party, signing petitions to support further aid, or endorsing an apology on behalf of their group (Roger, 1999; Doosje et al., 1998). These behaviors allow group members to compensate for the guilt that they experience when a group they belong to

has harmed others. Importantly, those forms of compensation are all directly related to the maligned party (i.e. remaining in the group context). High identifiers, in contrast, are much less likely to endorse any such compensatory behavior. They instead rely on defensive mechanisms to mitigate the threat of the information, which protects them from experiencing personal guilt (Doosje et al., 1998). Once they have deflected any negative feelings that might result from their group's behavior, high identifiers no longer have any need to compensate for such feelings.

Study 1 was designed to test whether fused people do indeed experience group-related guilt on a personal level, unlike highly identified group members. Two main questions were investigated. First: Do fused people respond to negative information about their group callously (as with high identifiers), or do they experience guilt due to their group's actions? Based on the above evidence, the prediction is that fused people are too personally connected to the group to insulate themselves from the negative information. Second: Do fused people express their personal guilt over their group's actions in the form of compensatory behavior? If fused people experience group-related guilt on a personal level, we would expect that they would be able to relieve that guilt using a compensatory mechanism that is unrelated to the group. However, non-fused group members would compartmentalize their group-related guilt and thus have no reason to engage in a compensatory task unrelated to their group. These predictions were tested by exposing participants to negative information about their group (or neutral information about their group in a control condition) and measuring both their immediate reaction to the information as well as their behavior in a subsequent compensatory task.

## **METHOD**

### **Participants**

Participants were recruited using the introductory psychology pool at the University of Texas at Austin. All participants were undergraduates who received class credit for participating in the study in fulfillment of a research participation requirement. A total of 82 participants were recruited. 4 participants were dropped from analyses for not following instructions. This left 78 participants who were included in the analyses (47 F, 31 M; mean age = 19.53, SD = 2.64, median age = 19).

### **Materials and Procedure**

Participants signed up for the study through an online recruitment system. Upon arriving, participants were brought into a lab room with a computer and consented to participate in the study. The experimenter told the participant that the purpose of the study was to investigate how people's attitudes towards their school affect the way they interpret news stories about the school. They were asked to complete a survey on the computer and then notify the experimenter when they had finished.

The survey began with the identity fusion verbal scale (Gomez et al., 2011) and a measure of group identification (Mael & Ashforth, 1992). Participants were instructed to fill out each scale with the University of Texas at Austin as the target group. These scales can be seen in appendix A. Following this, participants were presented with one of two ostensibly real news stories about UT. The story they received (and thus their condition) was randomly assigned by the survey program. The experimental condition story was written by the experimenter. It describes a scenario in which UT wants to open a new



campus east of the city but is having trouble securing enough land. The school partners with the Texas Land Commission to use eminent domain to acquire the land that they need, displacing local family farmers. The story goes on to describe the hardships that this has imposed on the farmers and their families, who are left without the means to support themselves. The control condition story is an actual press release from UT describing a deal that a Canadian power company reached to license battery technology developed by a chemistry professor. This story was selected for its neutrality relative to the experimental condition story. The full text of both of these articles can be seen in appendix A.

Participants received instructions telling them to read the news story carefully, with the warning that they would be asked questions about the content of the article. Next they were given three questions about the story they had just read. These questions were given to ensure that participants paid equal attention to the story they read regardless of condition or level of fusion/identification. To ensure that participants were actually reading the articles, they were asked three questions about the content found in the article (one question from the beginning, one from the middle, and one from the end; participants were not able to move backwards to view the article again). A score was given to each participant based on how many of the three questions he or she got correct. There was no difference in participant content scores between the two conditions ( $F(1,74) = .53$ , n.s.). Content scores were not correlated with fusion scores ( $r(78) = -.08$ ) or identification scores ( $r(78) = .07$ ). Participants next filled out a series of 5 items developed by the experimenter that were designed to assess how participants interpreted

the story. Finally, participants filled out the Positive and Negative Affective Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to measure their emotional reaction to the story. This state emotion scale includes a list of emotional descriptors (e.g. 'Nervous') and asks the participant to rate the degree to which they are presently experiencing each one. They also provided basic demographic information.

The participant was then directed to the final page of the survey, which said to notify the experimenter that he or she was finished. The experimenter, commenting on how quickly the study had been completed, told the participant that the lab policy was to ask people to play a charitable game to fill the excess time when a study finished early. The experimenter then opened up the Freerice.com website and explained to the participant that it was a real (i.e. not controlled by the experimenter) website that donated 10 grains of rice to the World Food Programme for each question correctly answered in a simple English vocabulary game. The difficulty of the game automatically scales to the ability of the player, removing potential differences due to a participant's grasp of English vocabulary. The participant was told that playing the game was voluntary, but was asked to play 'at least for a few minutes' and to notify the experimenter when he or she was finished playing and wanted to complete the study and leave. Once the participant started playing, the experimenter started a hidden timer (which was stopped once the participant indicated that he or she was finished). The experimenter also recorded the amount of rice that the player had accumulated when he or she stopped playing the game. This served as a measure of how engaged the participant was with the game.

The participant was thanked for participation and probed for suspicion with regards to the study design. A few participants suspected that the Freerice.com game was somehow related to the overall study. However, none of them had any guess as to the hypothesis or the actual nature of the deception. Removing these participants did not change any of the results, so they were included in the final analyses.

## **RESULTS**

### **Reaction to article**

The immediate response of participants to the article they read was assessed in two ways. First, participants were given 5 items relating to the article and asked to rate each on a 7-point Likert scale. The items were: “I think the story makes UT look bad”, “I don’t think anything particularly bad happened in this story”, “I think the story makes UT students look bad”, “I feel bad about the actions that UT has taken”, and “Someone at UT should be held accountable for what happened”. As these items were all highly correlated, they were averaged into a single score indicating the valence of the participant’s reaction to the story (the second item was reverse scored). The reaction score was analyzed using a multiple regression model with fusion, condition (effect coded), and their interaction entered as the factors. Neither fusion nor the interaction were significant, but there was a significant main effect for condition ( $B(74) = 1.229$ ,  $t = 2.42$ ,  $p < .05$ ) such that people in the experimental condition had a more negative reaction to the article. Each of the 5 items was similarly analyzed individually, but no effects aside from condition were found. The same analyses were conducted substituting identification

scores for fusion scores; there were no significant interactions or main effects for identification either.

The second measure of participant reaction to the story was the PANAS scale. Although participants received the full list of words, their rating on the ‘Guilt’ item is of chief interest to this study. Another multiple regression was performed with fusion, condition, and the interaction as the factors and participant ratings of guilt as the outcome. There were no significant main effects nor a significant interaction. The same analysis was conducted substituting identification for fusion. This revealed a significant interaction ( $B(75) = .22$ ,  $t = 2.61$ ,  $p = .01$ ), as well as a main effect of identification

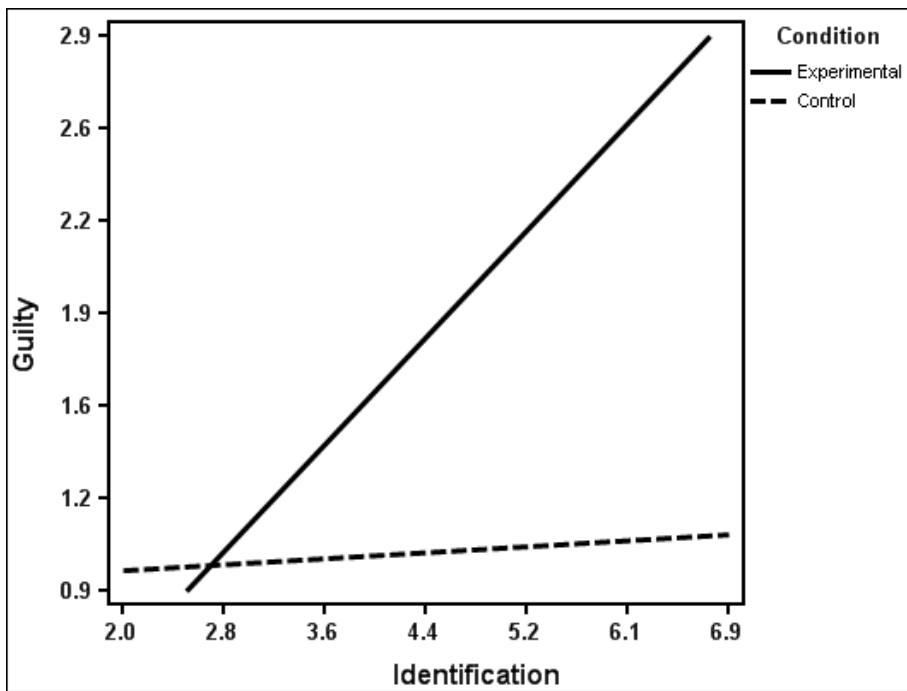


Figure 5.1: Interaction of Identification and Condition on Guilt

( $B(75) = .25$ ,  $t = 2.93$ ,  $p < .01$ ), such that people more highly identified with UT experienced greater guilt in the experimental condition, but identification was unrelated

to guilt in the control condition. There were no significant interactions for identification and condition on any of the other PANAS items. There was a significant interaction between fusion and condition on the 'Enthusiastic' item ( $B(75) = .37$ ,  $t = -2.04$ ,  $p < .05$ ), such that participants in the control condition were more likely to feel enthusiastic when highly fused with UT.

### **Guilt compensation**

The next set of analyses focused on whether participants compensated for personal feelings of guilt by way of the Freerice.com game. There were two dependent measures. First was the amount of time that each participant played the game. This was recorded by the experimenter as the number of seconds from when they began to play to when they informed the experimenter that they wished to finish the study. Checking assumptions before conducting the regression analysis revealed a problem with the normality of the time DV, with the residuals skewed to the upper end of the distribution (a pattern that is not surprising for time data, as a handful of participants were willing to play far longer than most of them did). The variable was transformed using a loglinear transformation. The transformed variable did not display any of the same normality problems, so was subsequently used as the outcome in a multiple regression model with fusion, condition (effect coded), and their interaction as the factors. Neither the interaction nor the main effects were significant in this model. A similar analysis was conducted substituting identification for fusion, but it was also non-significant.

The second dependent measure was the amount of rice that the participant had accumulated while playing the game. Participants accumulated 10 grains of rice per

question correctly answered. The dependent variable was the total amount of rice they had accumulated upon quitting the game. Once again, assumption checks prior to analysis

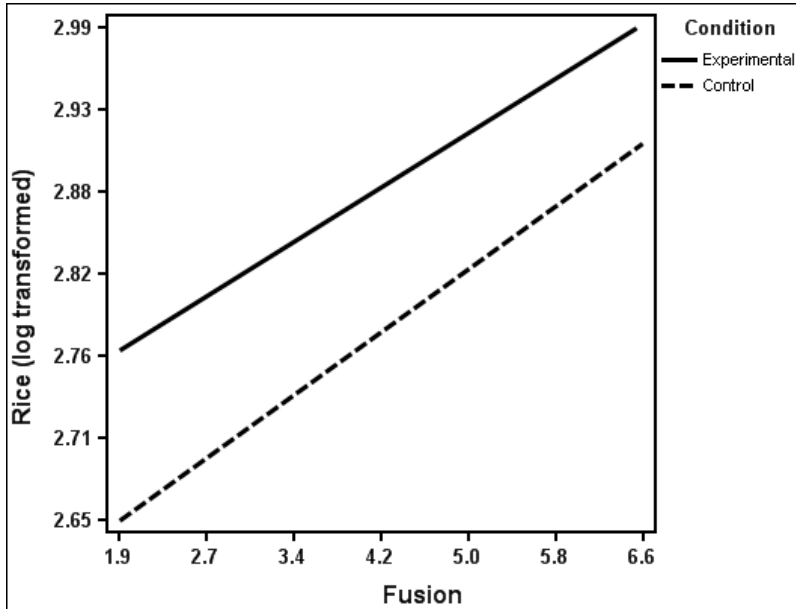


Figure 5.2: Interaction of Fusion and Condition on Rice

revealed a problem with normality due to a strong positive skew. I applied another loglinear transformation, which produced an acceptably normal distribution of unstandardized residuals. The transformed rice DV was used as the outcome in a linear regression model in which fusion, condition (effect coded), and their interaction were entered as the factors. The interaction term and condition were not significant, but there was a marginally significant main effect for fusion ( $B(70) = .05$ ,  $t = 1.87$ ,  $p = .07$ ). Once the two non-significant terms were removed from the model, the effect of fusion was fully significant ( $B(72) = .06$ ,  $t = 2.05$ ,  $p < .05$ ).

## DISCUSSION

The overall expectation was that participants who were fused with their group would, in response to a critical news story about the group, display higher levels of personal guilt and compensate for that guilt by engaging in a charitable activity. The first question tested was whether, after reading a news story that portrayed UT negatively, participants would display guilt either on a scale of state emotion or through a series of questions designed to probe their general response to the story. There were no effects involving fusion or identification for the 5 items responding to the story itself. Unsurprisingly, the items were split in terms of condition such that participants who had read the guilt-inducing story had a generally negative response to it. The more interesting results involved the state emotion measure. According to the research reviewed above, we would expect that people high in identification would not display guilt in response to negative information about the group. However, this is the opposite of what was found. Participants who were high identifiers with UT were more likely to express guilt when they read the experimental condition story. Participants high in fusion were no more likely to display guilt than anyone else, which also ran counter to expectations.

These results are puzzling for two reasons. First, why would high identifiers report feeling guilty when multiple studies have found the opposite pattern? It is important to consider that there were *not* any effects involving identification for the 5 initial response items. High identifiers were not more likely to think that the story makes UT look bad or to feel bad about what UT had done. This shows that, when reacting to the story in a way that is directly related to the group, high identifiers don't feel

particularly bad about what they read. Perhaps the high identifiers merely used the rather innocuous state guilt measure to express the guilt they felt like the news story was demanding in a way that was unrelated to their group, and thus did not risk implicating it. This interpretation would be more consistent with Doosje and his colleague's discussion of collective guilt and identification.

The second reason these results are puzzling is that there is no evidence that fused people are experiencing personal guilt, contrary to expectation. Although evidence of the close personal self/group self connection in fused people suggests that they should internalize group related outcomes, it may be that the bond just makes negative information even more threatening, thus making them inclined to avoid it. Doosje et al. (1998) and Roger (1999) show that high identifiers protect themselves from negative information about the group by employing defense mechanisms to deflect any possibility of having their relationship with the group threatened. It may be that fused people do this as well. The research showing that fused people were more likely to predict negative personal outcomes after an election loss does not necessarily mean that the fused people were reflecting the loss back on their party. Predicting more negative personal outcomes probably has more to do with how they view the winning political party, as they would be the ones responsible for the decline in life quality post-election. This question cannot be resolved with the data available in this study, but future research investigating whether fused people engage in similar defense mechanisms to those highlighted by the identification researchers could be informative.



The results of the compensatory behavior measure also differed from expectation. The original prediction was that fused people would be more engaged in the Freerice.com game after having read the guilt-inducing story, but not after reading the control story. They would demonstrate this by playing the game longer and with more dedication (i.e. generating more rice). Although there were no significant results with regards to the amount of time played, analyses did reveal that participants higher in fusion tended to accumulate more rice regardless of condition. The lack of an interaction implies that the mechanism that drove people high in fusion to play the Freerice.com game was unrelated to the story that they read.

These results also raise two key questions. First: Why was there an effect for the amount of rice participants accumulated but not the amount of time that they played? This may relate to the design of the study. Participants were placed into a computer cubicle in which they were not directly observable by the experimenter. It seems likely that some participants may have been sitting in the cubicle during the time they were ostensibly playing the game, but were in fact engaged in other behavior instead (such as using a smartphone). In fact, two participants were caught doing that very thing (and were subsequently removed from the study). In this sense, the rice accumulation measure might be the more accurate outcome, as it actually reflects a behavior.

The second question is: Why were highly fused participants more likely to generate more rice regardless of condition? One possible explanation is that the design served as a de facto compliance study. That is, participants had their membership with UT primed and were then faced with a UT ‘official’ (the experimenter) who made a

request of them. Participants then complied with this request out of their sense of group membership or in response to an in-group authority figure (e.g. O'Reilly & Chatman, 1986). Unfortunately, there is no way to empirically test this explanation, so it must remain speculative for the purposes of the current study.

While the compliance offers a reasonable mechanism for the rice finding, it does not explain why the finding is unique to fusion. There is no clear reason why compliance should be limited to highly fused persons; highly identified group members should also be more willing to comply with the request of an in-group official. Another possible explanation is that the rice finding reflects a higher level of engagement for fused people. Consistent with identity synergy, the first part of the study (which activated the group identity) should also have activated the personal identity. Perhaps this activation was sufficient to make fused people more engaged in a task even though it may not have been perceived as group-oriented. This could potentially explain why fusion uniquely predicted higher levels of rice accumulation across conditions.

## **Chapter 6: Study 2**

According to traditional approaches to social identification, context is king when it comes to navigating social interactions. As discussed in chapters 3 and 4, SCT (e.g. Turner et al., 1994) and the MSF (McConnell, 2011) propose that identities are only influential insofar as they have been activated in a particular situation. Regardless of how influential a particular identity or self-concept may sometimes be, it can be compartmentalized away when it is not context-appropriate. This process can be beneficial to social interactions, however. By only keeping appropriate identities active, it reduces the chances that a person might say or do something that would violate the expectations of the people he or she is interacting with. Based on evidence that highly fused people do not compartmentalize their fused identity, it may be that they struggle with this process. Unable to ‘take off the hat’ of their fused group, social interactions in a context unrelated to the fused group may be unduly influenced by that group.

The second study tested whether this is indeed the case by having participants engage in an experimentally controlled social interaction. This design had participants quickly switch from a conversation about their fused group (the University of Texas at Austin) to a conversation on a topic unrelated to that group (friends and family back home). In a control condition, participants first discussed their favorite TV shows before switching to the conversation about friends and family. The prediction was that students more highly fused with UT would have no trouble engaging in the first conversation, but would have difficulty switching to the second conversation. In contrast, people lower in fusion would have no problem discussing either topic.

To measure whether or not a participant was having trouble conversing with his or her partners, study 2 used a text analysis program called LIWC (Linguistic Inquiry and Word Count; Pennebaker, Booth, & Francis, 2007). This program searches through input text and identifies words that belong to particular pre-set categories. These categories can include either content words (e.g. words relating to achievement or health) or function words (e.g. pronouns, prepositions, articles). Much of the research involving LIWC focuses on the importance of function words. Although function words make up a relatively small amount of our overall vocabulary, they account for much of our word usage. More importantly, analyzing pronouns can reveal much about the social processes underlying our interactions (e.g. Chung & Pennebaker, 2007). Although we may not often be aware of the function words we are using, they show the assumptions we are making about the knowledge and relationships of the people involved in the conversation. These simple words can be revealing in a wide variety of domains relating to physical and psychological health, individual differences, and close relationships (see Tausczik & Pennebaker, 2010). Most importantly for the present study, this approach allows the comparison of interactions across contexts (as context-specific information will tend to be relegated to content words).

Recent research using LIWC has investigated how mimicry of function word use during an interaction can reveal much about the social engagement of the people involved (e.g. Ireland & Pennebaker, 2010). Known as Linguistic Style Matching (LSM), this body of work predicts various outcomes based on how synchronized interaction partners are in terms of their function word usage. High levels of LSM have been related to topics

such as romantic relationship quality (Ireland et al., 2010), success at a collaborative group task (Gonzales, Hancock, & Pennebaker, 2010), peaceful resolution of hostage situations (Taylor & Thomas, 2008), and the status and relationships of corresponding authors (Ireland & Pennebaker, 2010). In general, higher levels of language matching reflect greater engagement and understanding between interaction partners (e.g. Gonzales et al., 2010).

Study 2 uses LSM as a way to measure how well fused people are able to engage their interaction partners. People highly fused with a target group should have high LSM when discussing that group with fellow group members. However, that may not be the case outside of the target group context. Once participants switch to a topic no longer related to the target group, a drop in LSM would reflect difficulty engaging in the social interaction. I hypothesize that this is due to the inability of that participant to compartmentalize his or her fused identity.

## **METHOD**

### **Participants**

Participants were recruited from the introductory psychology pool at the University of Texas at Austin. All participants were undergraduates who received class credit for participating in the study in fulfillment of a research participation requirement. A total of 30 participants were included in the analyses (15 F, 15 M; mean age = 19.13, SD = 1.14, median age = 19).

**Procedure**

This study was conducted using the TOWR (Texas Online World of Research) website, a program developed by Dr. James Pennebaker at UT. This website allows the researcher to administer questionnaires and have participants take part in live chat sessions with each other. The website keeps logs of the chat session, which can then be analyzed using the LIWC program to determine levels of LSM.

Participants who signed up for the study were asked to log into the website at a particular date and time to take part in the study. Each session of the study included 3 participants, and was not carried out unless all 3 of the participants signed into the website. Upon logging in and consenting to participate in the study, participants filled out measures of fusion (Gomez et al., 2011) and identification (Mael & Ashforth, 1992) with UT. Next, participants were given directions for their first chat session (see appendix B for full text of the instructions). In the experimental condition, participants were asked to chat with each other about their experiences with UT. In the control condition, participants were asked to chat about their favorite TV shows. This chat session lasted 6 minutes. Once the first chat finished, participants in both conditions received instructions directing them to talk in the next chat session about their friends and family back home. This subsequent chat also lasted 6 minutes.

Following the second chat, participants were asked to fill out a variety of questions assessing their personal reactions to the chats. As LIWC provides a non-conscious measure of conversational engagement, these questions were included as a way to measure whether participants' conscious experience with the chats reflected their

fusion/identification with UT. The full list of those items can also be seen in appendix B. Finally, participants filled out basic demographic information and were debriefed.

## **Results**

### **Group-level analyses**

For the first stage of the analysis, I looked at whether fusion/identification with UT predicted (along with condition) whether the LSM of the participants in the group was significantly different from the first chat to the second chat. According to my hypothesis, groups where the participants are high in fusion should display a decrease in LSM from the first chat to the second chat in the experimental condition. For the dependent variable, I used an LSM score calculated as the degree to which all three participants in the chat were matched. LSM scores range from 0 to 1, where 1 indicates that the people in the conversation are perfectly matched. Conducting the analysis on the group level is somewhat problematic, as it reduces the *n* of the study to 10. Therefore the results of this analysis should be considered preliminary. The data were analyzed using a linear mixed model design with group LSM as the outcome and condition, group fusion (calculated as the mean of the fusion scores for each group member), and time (i.e. chat 1 vs. chat 2) as the factors, along with all of their possible interaction terms. I initially constructed 2 models. One model included random intercepts for both group and time, while the second model included only the random intercept for group (consistent with a more traditional repeated measures design). Comparing the two models using the AIC revealed that the model with only the random intercept for group was stronger, so that model was used for the rest of the analyses.

If my prediction were correct, this model would reveal a 3-way interaction between condition, group fusion, and time. This effect was not significant. However, there was a marginally significant interaction between condition and group fusion ( $F(6) = 4.00$ ,  $p = .09$ ) such that groups in the experimental condition tended to have higher LSM when they were also higher in fusion. This can be seen in figure 6.1. There were no significant main effects. I repeated the analysis substituting group identification (calculated as the mean identification score for the 3 group members) for group fusion, but no interaction terms or main effects were significant. The observed pattern is not consistent with predictions that LSM would change between the two chats, but is consistent with expectations that fused people would have stronger LSM in the group-related interaction.

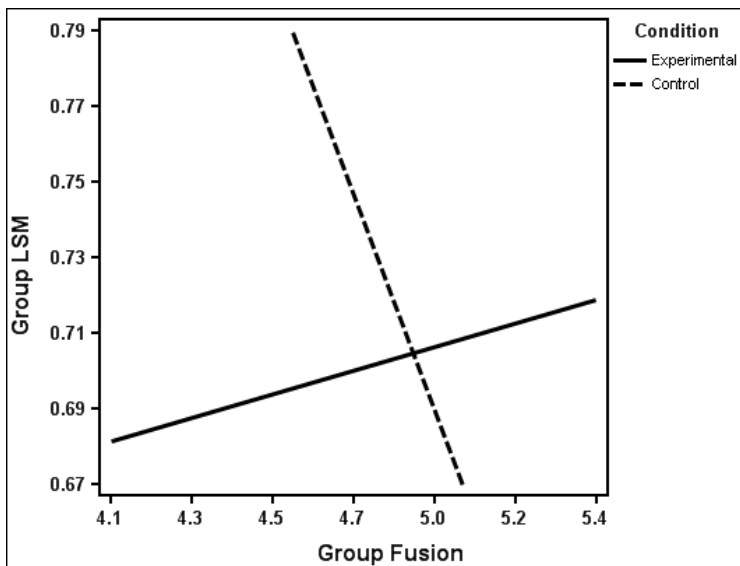


Figure 6.1: Interaction of Group Fusion and Condition on Group LSM



### **Individual-level analyses**

Although the group-level LSM scores analyzed above can be informative, they may also mask the more nuanced interactions happening between the different members of the groups. Additionally, group-level variables severely restrict the power of the analyses (as the 30 total participants only represent 10 groups). For these reasons, during the next stage of analyses I decided to break down LSM scores to the individual level. Looking at LSM at the individual level could potentially show whether a participant's fusion with UT affects his or her particular experience in the chat sessions, generally providing greater resolution to what took place in the interactions. I calculated two outcome measures for this purpose. The first was the LSM for all pair-wise interactions in the data set. That is, if a group includes participants A, B, and C, there would be separate data points for participant A's LSM with B and with C at both time 1 and time 2 (so 4 data points for each participant). The second outcome measure averaged the two pair-wise LSM scores for each participant; this means that participant A would have a personal LSM score for time 1 and another for time 2. By looking at both of these measures, it should be possible to see whether fusion or condition affected participant interactions either with other individual participants or with their group members together.

I analyzed both of these outcomes using a linear mixed model with condition, fusion (individual score), and time as the factors, along with all possible interactions. I also added a random intercept to both models to account for the nested variance due to participants being grouped together. According to my predictions, I would expect a three-

way interaction between the three factors. Unfortunately, there were no significant interactions or main effects for either of these models.

### **Post-chat questions**

Following the two chat sessions, participants answered a series of questions designed to assess how they felt about the chat sessions and the people that they chatted with. Each of the twelve items was used as the outcome in a linear regression model with fusion, condition (dummy coded), and their interaction as the factors. The same analyses were also performed substituting identification for fusion. There were no significant interactions for any of these models. However, there was a significant main effect of fusion ( $B = .59, p < .05$ ) for the item: “I feel like my chat partners are very similar to me.”

## **DISCUSSION**

The goal of study 2 was to investigate how being fused with a group affects social interactions in a context that is unrelated to the group. If highly fused people do indeed have trouble compartmentalizing their group identity, it would stand to reason that they might be less interested or engaged in situations where that identity is not active or appropriate. The results of study 2 do not conclusively answer this question, but they do provide some evidence that fusion is indeed related to social interaction. However, due to the low power of the study, any interpretation of these results should be considered speculative until further research can be conducted on this subject.

My original prediction was that fusion, condition, and time would interact to predict LSM scores. However, there was no change in LSM from the conversation about

UT to the subsequent conversation about family and friends back home. Looking at the text logs from the chats, this is not very surprising. Participants often continued their conversation from the first chat after they moved into the second chat. In fact, many participants brought up their hometowns in the first chat in a natural effort to provide information about themselves and find common ground with their chat partners. The result of this was that the second chat rarely represented an actual change in context for the participants, and was often merely an extension of the conversation as a whole.

The marginally significant interaction of condition and group fusion on group LSM was promising, however. This suggests that people who are more highly fused with a group are more likely to have a higher quality social interaction within a group-related context. It is not necessarily clear what drives this pattern, though, as it could be that non-group-related interactions were particularly bad rather than group-related interactions being particularly good. Considering the very low power of the analysis, it would be presumptuous to make any strong claims about the pattern of the results. Increasing the sample size to get a better idea of the true strength of the effect would be prudent. It is also interesting that fusion uniquely predicted whether participants felt like their chat partners were similar to them. This effect suggests that people who are higher in fusion are more likely to see common ground between them and their fellow group members during an interaction. This makes sense when considering the importance of relational bonds for identity fusion.

## **Chapter 7: Study 3**

The previous two studies explored the ways in which being fused with a group could have negative effects on a person's life. Since these outcomes are detrimental to the lives of the population of interest, it would be helpful to them if this project could also identify a way to ameliorate such problems. Therefore the final study was designed to test whether fusion with the target group of the previous two studies (UT) could be experimentally reduced. As fusion was the mechanism underlying outcomes observed in the first two studies, decreasing fusion should in turn reduce the likelihood of those negative outcomes occurring. That is, making people less obsessed with UT would probably benefit the other areas of their lives.

A method for decreasing fusion was not readily apparent. The most direct approach would be to counteract the factors that contribute to the formation of identity fusion. Unfortunately, fusion researchers have yet to identify any consistent dispositional or situational factors that predict the development of a fused relationship. Instead, this study attempted to decrease fusion by emphasizing the participant's relationship with an orthogonal, but highly important, social group that all participants were members of: their families. By re-engaging participants with their family and friends back home, we could potentially decrease the importance of their relationship with UT.

Again, the way to do this was not obvious. Ultimately, the study employed an expressive writing paradigm (e.g. Pennebaker & Chung, 2008) in which participants were directed to write deeply about their relationship with their family (or UT in the control condition) for an extended period of time. Research on expressive writing has primarily

been associated with a wide variety of health benefits (see Frattaroli, 2006 for a review). However, some work has also linked expressive writing to identity. Engineers who had recently been laid off and were facing an identity threat due to the transition were able to gain closure through the expressive writing process and were subsequently more likely to be reemployed (Spera, Buhrfiend, & Pennebaker, 1994). In another study, participants who were part of a smoking cessation program were more successful at quitting when they wrote about the process of becoming a non-smoker during the program (Ames et al., 2005). This research admittedly does not address any of the social identity issues that are central to this dissertation. However, the expressive writing paradigm does allow people to organize their thoughts and dig deeply into a variety of topics, often with profound outcomes. It would make sense for an emotionally-laden writing experience to be tied to a closely personal bond such as fusion.

Study 3 was designed to test how fused people would respond after writing expressively about their family (vs. about UT). There were three main predictions. First, that participants who wrote about their families would see a decrease in their fusion with UT. Second, that those participants would see an increase in fusion with their family. Third, that those participants would display positive family-related outcomes (such as an increase in communication with family members). To test this, study 3 was set up as a pre/post design. Participants would first answer an online questionnaire (and have a close family member answer a similar one), then would come in to participate in the writing session write before a school break during which they would see their family. After

returning, both the participant and the family member would fill out a follow-up measure assessing changes in fusion levels and behavior towards the family.

## **METHOD**

### **Participants**

There were 60 students recruited for this study from the UT introductory psychology pool. 15 participants were removed due to not following directions (i.e. not writing about the topic that was assigned to them), leaving 45 participants whose data were included in the analyses (24 M; 21 F).

### **Materials and Procedure**

Before arriving, participants were asked by email to fill out an online questionnaire. This included measures of fusion (Gomez et al., 2011) and identification (Mael & Ashforth, 1992) with both UT and the immediate family. It also asked participants to estimate the number of times they had communicated with family members in the past week and to gauge the overall strength of their relationship with their family. Participants were asked to have an immediate family member fill out a separate online questionnaire. The family questionnaire asked the immediate family member to fill out fusion and identification scales for UT and the family, but from the perspective of the participant (i.e. what the family member thought the participant would say). It also asked for similar reports of recent communication between the participant and his or her family.

For the writing session, participants were brought into a computer lab and seated at a computer with a blank word processor document open. Each participant was given a

piece of paper with instructions on it. Separate instructions were given for the control and the experimental condition, which was randomly assigned. Participants in the control condition were instructed to write about their relationship with UT and the people in the UT community, while participants in the experimental condition were instructed to write about their relationship with their immediate family. The full instructions can be seen in appendix C. Once participants were consented and briefed on the study, they were given 1 hour and 35 minutes to write. During this time, participants were asked to write about their topic for 15 minutes, and were then given a 5 minute break. This cycle repeated until the full time allotment had been completed.

According to the original design, participants were supposed to fill out a follow-up measure of both fusion and family interaction one week after returning from the school break. Unfortunately, this conflicted with the schedule of the participant pool. Participants completed the experiment to receive credit towards fulfilling a requirement of their introductory psychology course. This credit was due to be completed by the beginning of the Thanksgiving break. The design of the study had participants complete the writing task before the break, and then called for them to fill out the follow-up measure after the break. However, there was no way to compel participants to fill out the follow-up measure, as their requirement had already been credited and fulfilled. Unfortunately, only 7 participants voluntarily filled out the follow-up measure. I attempted to re-run the study by taking advantage of Spring break the following March. Similar to the first iteration of the study, participants would complete the writing session before the break and then complete a follow-up upon their return. However, only 4

students signed up for the experiment, despite appeals to multiple introductory psychology sections.

Ultimately, I was left with the data I had collected with the initial survey, as well as the essays from the writing sessions across both conditions. These data were not sufficient to address the original research question of the study, but they still offered an opportunity to look at how people high in fusion think and communicate about their in-group. I decided to use LIWC to analyze what participants wrote, and then see how fusion was related to those results. By comparing the experimental condition to the control condition, the writing characteristics unique to how fused people talk about their in-group (i.e. UT) would be identifiable.

Consistent with this new approach, I cleaned the writing samples that participants had provided (correcting spelling and usage so that the program picked up the correct words) and analyzed them using LIWC. I then paired the results of the LIWC analysis with the data from the initial survey. I was primarily interested in two things: first, whether pronoun usage by fused people indicated that they incorporate their personal selves into the group. Previous research on political extremism shows that people who are strongly tied to their group tend to use ‘we’ more and ‘I’ less when discussing their group (Seyle & Pennebaker, 2007). Second, I wanted to see whether the content words that fused people used indicated a close relationship with the group (e.g. greater use of words related to positive emotion). I treated the condition in which they wrote about UT as the experimental condition, and the condition in which they wrote about their family as the control condition. For the analyses, I used linear regression models to look at whether



fusion and condition interacted to predict those categories. If so, this would show that that category was unique to a person highly fused with UT talking about UT. The same analyses were performed substituting identification for fusion to see which of these results was uniquely predicted by fusion.

## **RESULTS**

### **Interaction of fusion and condition**

I began the analyses by looking at the relationships between condition, fusion, identification, and the LIWC variables. I did this by first constructing a correlation matrix in which I identified which LIWC variables were significantly correlated with fusion, identification, or both. It should be noted that the large number of variables involved in this type of analysis greatly increases the risk of a type II error. None of these results are significant when the critical alpha is adjusted with a Bonferonni correction, so it is possible that there results being presented are misleading. The results of the matrix are shown in Table 7.1. The categories that were significantly correlated with both fusion and identification are: We, Negate, Sad, Insight, and Tentativity. The categories that were only associated with fusion are: Negative emotion and Motion. The categories that were only associated with identification are: Anxiety, Cause, and Exclusion. The correlation between fusion and identification was also significant ( $r(43) = .67, p < .001$ ).

Next, I used linear regression models to test for the predicted interactions. Each category in the table were used as the dependent variable in a regression model with fusion with UT, condition (effect coded), and their interaction as the predictors. The same

Table 7.1: Pearson's r Correlation Coefficients for Identity fusion, Identification, and LIWC Categories Across Both Conditions (N = 45)

LIWC Category	Fusion	Identification
We	.3*	.36*
Negation	-.36*	-.42**
Negative Emotion	-.31*	-.08
Anxiety	-.03	.3*
Sad	-.39**	-.37*
Insight	-.43**	-.41**
Cause	-.24	-.31*
Tentativity	-.45**	-.37*
Exclusion	-.25	-.31*
Motion	.32*	.14

Note: \*:  $p < .05$ , \*\*:  $p < .01$

analyses were then repeated substituting identification for fusion. There were no significant interactions between identification and condition or fusion and condition for any of the categories. Unsurprisingly, there were significant main effects for any of the categories which were previously found to be significantly correlated with fusion or identification.

### **Word usage related to the in-group**

Because of the lack of significant interactions related to condition, I decided to next look at correlations between fusion/identification and the LIWC categories

specifically within the experimental (i.e. writing about UT) condition. Table 7.1 shows how highly fused and identified people talk more generally, but looking at the experimental condition can reveal how they talk specifically about their fused group. This approach could also potentially reveal interactions that were hidden in the previous analyses. I once again correlated fusion, identification, and the relevant LIWC variables, but this time limited the analyses to participants who had been assigned to the experimental condition. The results are shown in table 7.2.

Table 7.2: Pearson's r Correlation Coefficients for Identity fusion, Identification, and LIWC Categories for the Experimental Condition

LIWC Category	Fusion	Identification
Negation	-.43*	-.51*
Negative Emotion	-.44*	-.24
Anger	-.33*	-.41*
Cognitive Mechanisms	-.44*	-.33
Insight	-.51*	-.5*
Tentative	-.54*	-.46*
Death	-.41*	-.23

Note: \*:  $p < .05$ , \*\*:  $p < .01$

Three categories appear in table 7.2 which were not present in the previous table: Anger, Cognitive Mechanisms, and Death. None of the categories in the table were significantly correlated with fusion or identification when restricting analyses to

participants in the control condition. Interestingly, there was a marginally significant interaction between fusion and condition as predictors of Death. Due to an extremely low base rate for this category, I recoded Death into a binary variable (such that participants got a 1 if they used a word from this category and a 0 if they did not) and ran a binary logistic regression with fusion, condition, and their interaction as the predictors. This revealed a marginally significant interaction term ( $b(42) = -.48$ ,  $S.E. = .25$ ,  $p = .06$ ), with neither the main effect of fusion nor condition being significant. I repeated the same analysis substituting identification for fusion and also found a marginally significant interaction ( $b(42) = -.83$ ,  $S.E. = .31$ ,  $p = .09$ ), and once again no significant main effect for identification or condition.

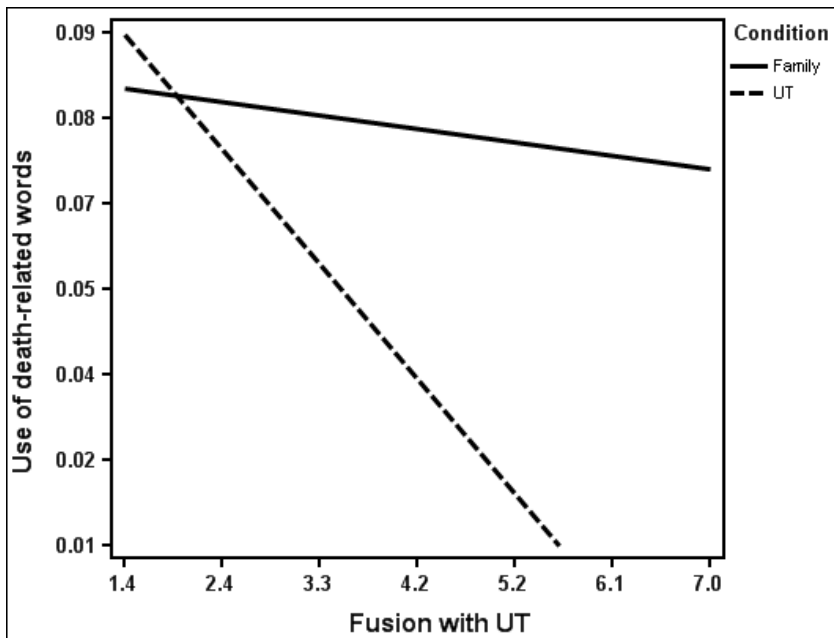


Figure 7.1: Interaction of Fusion and Condition on Usage of Death-related Words

## **DISCUSSION**

This study faced some challenges that prevented the original design from being followed through to completion. Fortunately, the data collected during the first half of the study offered an interesting look at the way that highly fused people talk and think about their group. Based on previous fusion research, I expected that the way that UT students high in fusion would talk about UT would demonstrate their close emotional bond with their group. I initially predicted that this would be borne out by an interaction of condition and fusion such that people high in fusion would write about their in-group differently than they wrote about another group. Admittedly, using the immediate family as a comparison group is not ideal for this approach. Fused people tend to view their group in a relational manner, so the contrast between the two conditions would probably have been greater with a more neutral comparison group.

Ultimately, the only significant interaction revealed by the analyses was for Death-related words. This result was likely driven by two things. First, people are much more likely to mention death when discussing family members (as stories about loved ones dying are very emotional and memorable). This resulted in a higher rate of death-related words in the control condition. Second, the base rate of death word usage was extremely low. Only a handful of participants in the experimental condition used death-related words, and those that did tended to use them in more colloquial manner (e.g. “I would just die if that happened.”). That being said, there is no clear reason why people lower in fusion or identification with UT would tend to use those words more. It may

reflect that such people are in a more negative frame of mind when discussing their school.

Perhaps the most informative results of the study come from the two categories that were significantly correlated with fusion (but not identification) in the experimental condition. The first of these was Negative Emotion. When discussing their group, fused people tend to use fewer words related to negative emotions (e.g. crushed, missing, worthless). This fits well with the initial prediction that the way fused people wrote would be indicative of their close bond with their group. People tend to use more negative emotion words when writing about negative events (Kahn, Tobin, Massey, & Anderson, 2007). This implies that students who are fused with UT have more positive experiences with their school (or at least interpret their experiences more positively). Although this does not inform the strength of their bond with UT, it does show that fused people have a more emotional relationship with their group.

The second category that was correlated with fusion (but not identification) in the experimental condition was Cognitive Mechanisms. Words in this category relate to the complexity with which someone thinks about a topic or event (e.g. determined, cause, understand). Fused students used such words less when writing about UT. People sometimes use cognitive mechanism words to describe or make sense of a difficult situation (Tausczik & Pennebaker, 2010). This may indicate that people higher in fusion have a simpler, clearer relationship with their group. The participants who were lower in fusion were often struggling with issues such as difficulties with making friends or being uncertain whether UT was the correct school to attend. In fact, these participants often

started their writing with a variant on the line: “My relationship with UT is complicated.” Their use of cognitive mechanism words likely reflects their attempts to explain or resolve those complications.

Taken together, these results paint of picture of highly fused people who have a straight-forward, generally positive relationship with their group. This is consistent with existing work on fusion, which suggests that the fused relationship is both passionate and stable (e.g. Swann et al., 2009). At the same time, it would be prudent to remember the high likelihood that at least some of the correlations presented in this study are the result of a type II error. Although this study was not able to reveal whether experimentally reducing fusion is possible, it did provide a novel, naturalistic way to learn more about identity fusion.

## **Chapter 8: General Discussion**

This dissertation argued that people who are highly fused with a group become so deeply involved in their group that they are unable to break away from it, even in situations where doing so would be beneficial. Study 1 tested how highly fused people respond when faced with information that their group did something that harmed innocent people. Results showed that, whereas highly identified participants felt guilty in response to such information, highly fused people did not. Fused people were more likely to engage in a subsequent, unrelated task involving charitable behavior, but this pattern occurred even when fused people received neutral information about their group. Study 2 looked at naturalistic social interactions to see whether being fused with a group makes it difficult to engage in interactions unrelated to the group. Preliminary results showed that people who are highly fused with a group do indeed seem to have stronger interactions within a group-related context. Study 3 used linguistic analysis to investigate how people who are highly fused with a group think and write about that group. Fusion predicted usage of fewer negative emotion words and fewer cognitive mechanism words for UT students writing about their school. Identification did not predict these results. Overall, while the results of this project did not support the original hypothesis, the data that were gathered did provide new and interesting information on how fused people view and interact with their group.

The behavioral results of study 1, although uniquely predicted by fusion, may be merely attributable to group-related compliance. However, the results relating to guilt raise some interesting questions. The research reviewed in chapter 5 (e.g. Doosje et al.,



1998) suggests that highly identified group members do not experience group-related guilt. Yet our study showed that, while high identifiers did feel guilty, highly fused people did not. As the discussion of that chapter mentioned, this may indicate that fused people are so strongly tied to the group that they are even more motivated to avoid information that could undermine their relationship with the group. Such a pattern would be particularly troubling when considering that highly fused people are also a pool of group members particularly likely to endorse or engage in violent behavior on behalf of their group.

Consider the example of a group of highly fused nationalists from a militaristic country. The country, engaged in a legitimate military exercise in a foreign country, accidentally bombs a village of innocent civilians. In response, local insurgents attack the soldiers from the bombing country. The fused nationalists, unwilling to accept that their country's actions were responsible for the situation, demand violent retribution on the insurgents. Meanwhile, highly fused insurgency members are similarly unwilling to view any of their group's actions in a critical light. This could easily lead to a cycle in which both sides, unable to see the flaws in their own group's behavior, cannot accept the responsibility which would be necessary for the two groups to reach some sort of peace settlement. Although further research would be needed to more fully investigate the nature of fused peoples' response to negative group information, the possibility of consequences this far-reaching make this a topic worthy of further consideration.

The results of the communication studies were consistent with what has previously been observed regarding fused people. The tendency of fused people to not

incorporate negative emotion into their discussion of their group reflects the personal importance of their tie to the group. Therefore highly fused people would be well served to not think of their group in a negatively emotional way. Maintaining positive feelings about the group makes it more likely that they will be able to get the verification from the group to maintain the positive self-views that most people have (e.g. Diener & Diener, 1995). The use of fewer cognitive mechanism words, which implies greater certainty about their feelings about the group, is consistent with research showing that fusion is very stable over time relative to other identification constructs (Gomez et al., 2011). The relationship that the fused person has with their group is unambiguous. The group takes a major role in their life, and is seen as a positive, enduring presence. In contrast to people low in fusion, who are still trying to resolve the nature of their relationship with the group, people high in fusion want to use their group as a reliable presence in their lives.

Although these studies did provide some interesting results relating to identity fusion, the question of whether or not compartmentalizing the fused identity negatively impacts highly fused people still remains unclear. An argument could be made that the guilt results from study 1 are related to compartmentalization (although in the opposite way of the original hypothesis). That is, while non-fused people might be able to compartmentalize out their identity to avoid negative information about it, the fused person is always tied to that identity. Thus they have to do some mental gymnastics to avoid acknowledging the negative information and thus carrying that guilt with them at all times. Study 2 may provide some support for the impact of compartmentalization, in that participants had better interactions within the group context. However, these results

must be taken as preliminary until more data can be collected, and they don't necessarily show that outcome is due to lack of compartmentalizing. The results of study 3 do not provide evidence regarding the impact of compartmentalization one way or another.

#### **LIMITATIONS AND FUTURE DIRECTIONS**

The greatest limitation of these studies was related to the subject pool being used. Although using UT students allowed me to study an identity that could be kept consistent through all 3 studies, the challenges of recruiting reliable participants negatively impacted the results of studies 2 and 3. There are a few ways that I would have proceeded differently with these designs. The use of the TOWR website in study 2 provided the opportunity to collect data online, and thus potentially run participants very quickly and efficiently. In practice, online collection may have been responsible for the recruiting problems seen in study 2. The study required 3 participants for each session to be conducted. However, in the majority of the sessions at least 1 participant would either not show up or sign onto the website too early or late to be matched with the other participants. Ultimately only about a third of the sessions yielded usable data. I believe that running participants in the lab is a better alternative. Although they would still be run on computers signed into the TOWR website, the experimenter would be able to ensure that they all arrive and start the study at the same time. I also suspect that students would be more likely to show up for an actual lab session, as they may be easily distracted from an online appointment.

Correcting the issues with study 3 is not as straight-forward. It is difficult to figure out a time where participants in the introductory psychology pool are willing to

sign up for studies, but will also be going home for a break. The best solution would probably be to use a group of participants other than the introductory psychology pool. Given the means to do so, paying participants to take part in the study could solve both low sign-up rates and lack of conscientiousness with regards to the follow-up measure. Perhaps a good time to do this would be during the relatively short break between the two Summer semesters (assuming participants are taking classes in both halves of the Summer).

Another limitation of this study is that it was limited to UT students. Such a design can be both advantageous and restricting. On one hand, focusing on a particular group identity allows the researcher to delve into the questions being raised without having to account for the differences between various types of social groups. On the other hand, it raises the question of whether the results observed are somehow unique to the relationship between UT students and their school. If so, they cannot necessarily be extended to identity fusion in general. Expanding the use of LIWC in fusion research could be helpful with this limitation. The ability of LIWC to be easily applied across contexts would allow fusion researchers to compare how people highly fused with many types of social identities view their groups (e.g. country, religion, political group, etc.). Analyzing writing samples from a variety of these groups could allow fusion researchers to build an understanding of the differences in fusion between different types of groups that would be greatly beneficial to researchers designing future identity fusion studies.

Future work could also be conducted to delve more deeply into how highly fused people deal with negative information about the group. First, the fact that study 1 in this

project observed a data pattern opposite what has been observed by multiple identification researchers (i.e. highly identified group members expressing group, although the measure was different from what those studies used) calls for further research to determine whether that pattern was merely a fluke. Second, as mentioned above, the broader behavioral patterns that could be related to extremist group members refusing to acknowledge their group's negative actions merit further attention. Future research on this topic should investigate both what types of negative information about the group that fused people are or are not willing to accept, as well as the types of defense mechanisms employed by fused people to avoid dealing with such information.

More research could also be conducted to determine the mechanism underlying the results of the Freerice.com game. There are two potential explanations. First, that participants higher in fusion are more likely to comply to a request by an in-group official. This explanation is weakened by evidence that highly identified people are also more likely to comply to requests by an in-group member. The second explanation is that, due to identity synergy, fused people become more engaged in tasks even when they aren't directly related to the group. This could be tested by conducting studies in which fused participants have their group identity activated (or not) and are then asked to engage in a variety of different tasks. This would show whether fused people are more engaged in tasks, and whether that engagement is related to group activation.

The findings on links between fusion and communication also merit further research. The results of study 2 are promising, in that they suggest that fused people have difficulty with conversations outside of the group context. However, not enough data was

collected to make any reliable conclusions. Collecting more data using a similar design (perhaps accounting for the limitations discussed above) may very well lead to some interesting findings about how fusion affects social interaction. Similarly, future work on fusion could use LIWC to further investigate how fused people communicate with their group. The results from study 3 are promising, but are limited by the small sample size and analytical challenges. Future research could use LIWC to look at how people write about their fused groups across a variety of types of groups. Observing consistent patterns across those groups could support the results of study 3, while observing different patterns could shed light on what the differences are in fusing with a variety of types of groups.

## **Appendix A: Study 1 Materials**

### *Experimental condition article:*

AUSTIN, Texas – Local residents were initially happy to hear that a new UT location was being planned for 2015. However, the announcement was subsequently marred by reports that the expansion will come at considerable expense to some local farmers.

Plans to open a satellite campus east of Austin have been in place for years. Similar to the Pickle Research Campus, the extra space would be used for medical research and recreational facilities, both of which would be difficult to fit into the main campus.

School officials say that the new facilities would provide countless new research opportunities for both students and faculty. The school would run a shuttle from the main campus to give students, staff and faculty easy access to the new location.

However, planners ran into some difficulty finding a suitable location for the new campus. The school was initially unable find a land plot large enough for the planned 475-acre location.

In response to this problem, officials at UT Austin established a special joint taskforce between the school planning committee and the Texas Land Commission. The stated goal of the taskforce is to work with state planners to locate acceptable locations for campus

expansions. Reports seem to indicate that the actual purpose of the taskforce has been to use state governmental powers to snap up previously inaccessible land.

Through the partnership with state planners, UT officials are able to exercise ‘eminent domain’. This allows the state, and in this case the university, the power to condemn and acquire privately owned land when required for completion of a state works project.

In this case, the Texas Land Commission is able to buy up privately-owned farmland outside of Austin. This allows UT to piece together an area that is suitable for a campus expansion in a location where this would have been previously impossible.

“We understand the concerns, but all of the landowners were paid market value for their land,” said Elizabeth Heise, a representative from the UT planning committee, adding that some of the owners were happy to sell off parts of their land.

Land-owners have countered that the value of their land under currently troubled market conditions is extremely low.

Additionally, according to Nathan Garcia and other family land-owners, monetary compensation isn’t the same as owning good farmland. “Honestly, I wouldn’t sell our family’s land for any amount of money,” said Mr. Garcia, whose family has owned a 60-acre farm just outside of the city for over a century.



“Money is okay, but farmland is a living,” said George Rendon, another local farmer. “I had planned to pass that land down to my children, just like my dad gave it to me. But now where are we going to go?”

Many Austin residents can’t help but feel betrayed by the move. Family-owned land still arouses strong feelings in many parts of Texas.

“I just can’t believe that those folks would steal my land like this,” said Mr. Garcia. “I didn’t think you were allowed to do stuff like that anymore.”

An estimated 20 families are now looking for both a new place to live and a new way to support themselves. This is particularly difficult at a time when jobs are not easy to come by.

Recently displaced farmer Angela Tercera feels like the outlook for her family is bleak. “Once the money the school gave us runs out, I have no idea what we’re going to do. The farm didn’t make us rich, but it provided us enough to get by.”

Despite the hardships being imposed on these local residents, school officials say they plan to move forward with the current expansion proposal.

“I hate feeling so helpless,” said Mr. Garcia. “They can do whatever they want, and we don’t know how to stop it.”

*Control condition article:*

AUSTIN, Texas — The University of Texas at Austin has announced an agreement with Canada-based Hydro-Quebec for lithium-ion material technology invented and patented by Dr. John Goodenough, a world-renowned scientist at the university.

The agreement brings a significant upfront payment to the university and will provide future royalties and additional payments. Under the agreement, the financial terms cannot be disclosed.

Goodenough's research resulted in much lighter, longer lasting lithium ion batteries. It also provided improved safety for consumers and an environmentally friendly solution for transportation and storage applications.

LiFeP0 is an innovative and powerful cathode material useful in rechargeable batteries. Uses for the technology include cell phones, laptops, mp3 players, power tools, hybrid automobiles, small electric vehicles and stationary energy storage in ‘smart grid’ applications.

The University of Texas at Austin and Hydro-Quebec have worked together since 1996 to develop and commercialize these materials. The long-standing relationship established

a successful basis to take the technology from the laboratory to commercial product, enabling commercial production worldwide for LiFePO.

“This agreement is indicative of the value of university research and will accelerate the commercialization of a key technology with a wide range of applications in the energy sector,” said Juan M. Sanchez, the university's vice president for research. “We are pleased that a company with the stature of Hydro-Quebec is committed to the advancement of UT inventions. The agreement is also an acknowledgment to the importance of Dr. Goodenough’s research.”

Goodenough, the Virginia H. Cockrell Centennial Chair in Engineering in the Cockrell School of Engineering, identified and developed the cathode materials for lithium-ion rechargeable batteries that are found in devices and products around the world.

“This has been an amazing opportunity to collaborate with Hydro-Quebec and the university's commercialization partners,” Goodenough said. “We knew it was a promising technology, but the market was not ready for it in 1996 when we started on this endeavor. It was in the lab, and today it is a commercial product.”

Goodenough has received many honors for his work, including the 2009 Enrico Fermi Award presented on behalf of the White House, and the 2001 Japan Prize, the country's equivalent to the Nobel Prize. Goodenough is a member of the National Academy of Engineering and the L'Academie des Sciences de L'Institute de France and a fellow of the Royal Society, the United Kingdom's 350-year-old national academy of science.

Hydro-Quebec recently entered into an alliance that will aid the distribution of the university's technology to address the market demand with high quality products. The alliance has established licenses worldwide with material producers, enabling materials to become readily available for use in battery manufacturing, and for products to be available for worldwide distribution.

Initial sublicense agreements to produce and sell lithium iron products have been concluded with Sumitomo Osaka Cement Co. Ltd. and Mitsui Engineering & Shipbuilding Co. Ltd., both based in Japan, and Tatung Fine Chemicals Co. and Advanced Lithium Electrochemistry (Cayman) Co. Ltd. (ALEEES), based in Taiwan.

Hydro-Quebec is a government-owned public utility that generates, transmits and distributes electricity using mainly renewable energy sources, in particular, hydroelectricity.

Composed of 60 hydroelectric and one nuclear generating station, Hydro-Quebec is the largest electricity generator in Canada and the world's largest hydroelectric generator. The utility, which has more than 23,000 employees, also conducts research in energy-related fields, focusing on energy efficiency.

The broad-based market penetration of these high quality battery materials is a result of the growing demand from the global battery and automotive industries for reliable and efficient sources of energy.

*Fusion scale:*

Please answer the following questions with regards to how you feel about the University of Texas at Austin. Click the number that best represents your answer.

1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7

Disagree Completely

Agree Completely

1. My University is me.
2. I am one with my University.
3. I feel immersed in my University.
4. I have a deep emotional bond with my University.
5. I am strong because of my University.
6. I'll do more for my University than other members would.
7. I make my University strong.

*Identification scale (Mael & Ashforth):*

1. When someone criticizes my University, it feels like a personal insult.
2. I am very interested in what members of other schools think about my University.
3. When I talk about my University, I usually say 'we' rather than 'they'
4. Successes of my University are my successes.
5. When someone praises my University, it feels like a personal compliment.
6. If a story in the media criticized my University, I would feel embarrassed.

*Post-article items:*

1. I think the story makes UT look bad.
2. I think the story makes students at UT look bad.
3. I feel bad about the actions UT has taken.
4. Someone at UT should be held accountable for what happened.
5. I don't think anything particularly bad happened in this story.

*PANAS measure:*

These words describe different feelings and emotions. Read each item and then mark the appropriate choice in the space next to that item. Indicate to what extent you feel this way currently. Use the following scale to record your answers:

(1)      (2)      (3)      (4)      (5)

very slightly    a little    moderately    quite a bit    very much  
or not at all

*disgusted	guilty	-enthusiastic p
-inspired p	afraid	*contemptuous
nervous	-strong p	determined p
*scornful	upset	irritable

Attentive p	alert p	interested p
scared	jittery	*revulsion
hostile	active p	ashamed
excited p	proud p	distressed

## **Appendix B: Study 2 Materials**

### *Experimental condition instructions (chat 1):*

For the first chat session, we would like you to talk with your partners about your experience at UT. What kinds of things do you and your friends like to do? What's your favorite thing about being a UT student? Are there any extra-curricular activities you particularly enjoy? You can talk about whatever you like, but please keep the conversation about your relationship with UT and the people there.

### *Control condition instructions (chat 1):*

For the first chat session, we would like you to talk with your partners about your favorite TV shows. What is your favorite thing that you're watching right now? What's your favorite show of all time? Is there a particular show you will watch reruns of whenever it is on? You can discuss whatever you want to, but please try to keep the conversation related to TV shows.

### *Both conditions instructions (chat 2):*

You will now participate in a second chat with the same people you just spoke with. In this chat, we would like you to discuss your life away from UT. Where did you come from or go to high school? What are your friends there like? What do you and your friends do for fun? How close are you with your family? Please have a conversation with your chat partners where you talk about these issues or related topics.



*Post-chat items (7-point agreement scale):*

1. I feel like I got along well with my chat partners
2. I paid close attention to what I said during the chat
3. I can remember most of what I said during the chat.
4. I can remember most of what my partners said during the chat.
5. I was able to predict what my partners would say next.
6. I now have a good sense of what kind of people my chat partners are.
7. I like my chat partners.
8. Our conversations went smoothly.
9. I made a good impression on my chat partners.
10. I feel like my chat partners are very similar to me.
11. I was responsible for whether the conversation went well.
12. My chat partners were responsible for whether the conversation went well.

## **Appendix C: Study 3 Materials**

### *Experimental condition writing instructions*

For the next 2 hours, we would like you to write at length about your relationship with your family. What were some of the most important experiences you had with your family growing up? What made you close? Is there a particular family member that you have a very strong relationship with? Where do you see your relationship with your family going into the future? Please explore these and any other questions that come up while you are writing. This is for you alone- no one else will read it. The goal is for you to think deeply about the past, present, and future of your relationship with your family.

### *Control condition writing instructions*

For the next 2 hours, we would like you to write at length about your identity as an American. What were some of the most important experiences you have had relating to your country? How do you feel about other Americans? Do you think Americans tend to have a particularly close relationship? How do you view your identity as an American when you were younger and as you get older? Please explore these and any other questions that come up while you are writing. This is for you alone- no one else will read it. The goal is for you to think deeply about the past, present, and future of your relationship with your country.

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## **Vita**

Matthew Logan Brooks attended Chamblee High School in Atlanta, Georgia. In 2001, he entered Emory University also in Atlanta, Georgia. He received the degree of Bachelor of the Arts from Emory University in 2005. Upon graduating, he spent two years working as a research assistant at The Ohio State University in Columbus Ohio. In 2007, he entered the Graduate School at The University of Texas at Austin.

Permanent address (or email): MattLBrooks@gmail.com

This dissertation was typed by the author.