Identity Fusion: Reciprocal Activation and Motivational Primacy of Selves

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ABSTRACT

Identity fusion theory suggests that for strong group connections identity-synergy occurs between personal and collective-selves such that activation of one activates the other (Swann & Buhrmester, 2015). The social-categorization framework, in contrast, views the selves as functionally antagonistic such that activation of one entails muting the other (Turner, et al., 1987). The current research investigated these two conflicting theories by testing reciprocal activation of the selves across 3 studies. Identity-synergy should yield a reciprocal (not antagonistic) activation of personal-self when collective-self is active. Concurrently, I tested whether fusion moderated the motivational primacy of the selves—hierarchy with personal-self primary over relational and collective-selves (Gaertner, et al., 2012). Given identity-synergy and strong relational ties, all three selves might be equally primary for fused persons. To manipulate fusion, each study randomly assigned participants to think of a fused or not-fused ingroup. Afterwards, in Study 1 (n= 155) participants rated how well personal-self-pronouns (I, me, my) versus collective-self-pronouns (us, we, our) fit 20 sentences, in Study 2 (n= 126) participants wrote 20 self-descriptions and rated how representative each was of their personal, relational, and collective-self, and in Study 3 (n= 285) participants completed a lexical decision task that used personal-self-words (and neutral and non-words) as targets preceded by a fused or not-fused ingroup prime or not. Fit ratings, representativeness ratings, and reaction time equated to self-activation. Reciprocal activation is assessed by a positive covariation between personal and collective (or relational) self-activation in Studies 1 and 2 and by faster reaction times to self-words versus non-words when primed by an ingroup (vs. no prime) in Study 3. Motivational primacy is assessed by the relative strength of the given

selves in Studies 1 and 2 (and is not assessed in Study 3 given that only personal-self activation is measured). Overall, no evidence for identity-synergy was found across the 3 studies. Study 1 evidenced functional antagonism, but was not replicated. Study 1 and 2, however, tested and evidenced primacy of the personal-self. Importantly, fusion did not moderate the motivational hierarchy of the self-system. Implications for fusion theory and motivational primacy of the selves are discussed.

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CHAPTER ONE
INTRODUCTION

The self-concept is comprised of many different cognitive representations, or selves. The personal self embodies attributes unique to individuals and the collective self embodies attributes shared with group members. The social-categorization framework, which comprises social identity theory (Tajfel & Turner, 1979) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner, Oakes, Haslam, & McGarty, 1994) posits that personal and collective selves are functionally antagonistic. That is, selves cannot be concurrently active (i.e. cognitively salient); activation of one self inhibits the other. Persons' goals and motives at any given time are those of the active self.

In contrast, identity fusion theory, a new construct of group alignment, proposes identity-synergy—a union of the personal and collective selves that occurs when persons feel a strong sense of oneness with an ingroup (Swann, Gómez, Seyle, Morales, & Huici, 2009). Identity-synergy is evidenced via a robust positive relationship between fusion and willingness to self-sacrifice for the group (Swann & Burhmester, 2015). Research on pro-group self-sacrifice, however, is a unidirectional test of fusion's symbiotic relationship of the selves. For fused groups, persons use their personal self to promote group-serving goals. If fusion does indeed involve a synergistic union of the personal and collective selves, there should be *reciprocal activation* such that for fused groups persons also use their collective self to promote individual-serving goals.

In this dissertation, I investigate the two discordant perspectives of self-hood: identity fusion theory's identity-synergy and the social-categorization framework's

functional antagonism. After describing the two self-conceptualizations, I review preliminary research by Heger and Gaertner (in press) that, consistent with identity fusion theory, supports a reciprocal pattern of self activation. Lastly, I discuss current research that uses new methodologies to further test reciprocal activation of the selves and additionally examines whether fusion moderates the motivational primacy of the selves.

Two Conceptualizations of Self

Social identity theory was developed to explain the origins of intergroup conflict and is the initial manifestation of the social-categorization framework (Tajfel, Billig, Bundy, & Flament, 1971; Turner, 1978). Social identity theory then expanded via self-categorization theory to more broadly describe the dynamic relationship between self and group (Turner, et al., 1987). Groups become internalized aspects of the self in the form of social identities (i.e., collective selves). A social identity encompasses characteristics an individual shares with the group that differentiate that group from other groups. When active, persons adopt group-serving goals and motives, whereas individual-serving goals and motives fall to the wayside because the personal self is muted.

Changes in situation lead to shifts in the active self. The social-categorization framework believes the salience of any given identity is context-dependent. Social interactions fall on a continuum from interpersonal to intergroup contexts (Tajfel, 1978; Tajfel & Turner, 1979). In interpersonal interactions, personal identity is active and emphasis is placed on differences among the self and ingroup members. Persons shift to define themselves with traits and idiosyncratic characteristics that make them unique. As contexts approach the intergroup end of the continuum, self-definition shifts. In

intergroup contexts, social identity is active and emphasis is placed on similarities among ingroup members and differences between the ingroup and outgroups. Persons shift to define themselves with the prototypical qualities of the group and adopt its norms and values. Overall, behavior works to maximize the active identity with personal identity driving individual-serving behavior and social identity driving group-serving behavior.

The interpersonal-intergroup continuum suggests an inherent contrast between personal and collective selves. In fact, the continuum is a spectrum of mutually exclusive shifting of self-definition—from the personal self in interpersonal contexts to collective self in intergroup contexts. The increased activation of one self entails the decreased activation of the other. Selves are functionally antagonistic endpoints of this self-definition continuum.

The conjoint nature of the personal and collective selves for fused groups challenges the social-categorization framework's functionally antagonistic selves (Swann, Jetten, Gómez, Whitehouse & Bastain, 2012). Instead of a zero-sum relationship where the collective self inhibits the personal self when active, for fused groups the personal self remains active due to identity-synergy (Swann, et al., 2009). As a result, membership in fused groups feels exceedingly personal such that individuals believe they are one with the group. Fused personal and collective selves complement and reinforce each other. Together they amplify behavior and create a sense of cohesion and reciprocal strength between the self and group (Gómez, Brooks, Buhrmester, Vázquez, Jetten, & Swann, 2011). This contradicts the social-categorization framework's self-definition continuum, where the hypothetical midpoint is the closest approximation of simultaneous activation, and here neither self provides much influence on behavior.

Fusion is measured with either a seven-item verbal fusion scale (see appendix A; Gómez, Brooks, et al., 2011) or a single-item pictorial measure consisting of five images of two increasingly overlapping circles that represent the self and ingroup, respectively, with the image of most overlap representing fusion (see Figure 1.1; Swann, et al., 2009). Fusion literature measures identification—the social-categorization framework's metric of group alignment—with Mael and Ashforth's scale (see appendix B; 1992) because it is the most closely associated with fusion and thus presents the strictest test of available identification scales (e.g. Jetten, Branscombe, Schmitt, & Spears, 2001; Leach et al., 2008; Tropp & Wright, 2001). Psychometric tests, using the verbal fusion and identification scales, confirm that identity fusion and identification are distinct constructs (Gómez, Brooks, et al., 2011).

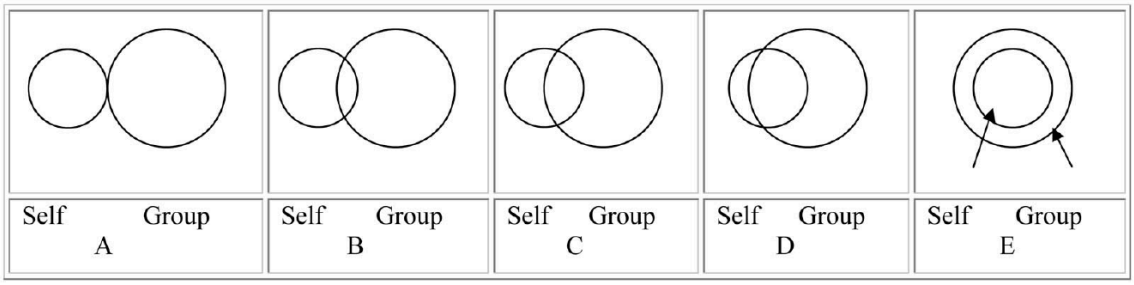


Figure 1.1. Fusion pictorial scale

Extant research finds that fusion predicts endorsement of pro-group self-sacrifices. Fused persons vow to place the self in harms way to protect the group and its members. Swann and colleagues use a seven-item willingness-to-fight-and-die scale for the group to measure self-sacrifice (2009). Beyond endorsement of fighting and dying for the group, fused members also indicate a greater likelihood than not-fused members to

donate funds, provide assistance to ingroup members (Buhrmester, Fraser, Lanman, Whitehouse & Swann, 2015; Gómez, Morales, et al., 2011; Swann, Gómez, Huici, et al., 2010), and report that they would die to save other ingroup members in a hypothetical trolley dilemma (Gómez, Brooks, et al., 2011; Swann, Gómez, Dovidio, Hart & Jetten, 2010; Swann, Gómez, Buhrmester, López-Rodríguez, Jiménez & Vázquez, 2014).

The extreme efforts of fused persons to benefit and protect the group make them unique from identified group members. Because self-sacrifice captures personal self agency applied to collective self goals, the measure allows a comparison of the effects of fusion's synergistic selves versus identification's functionally antagonistic selves. Group identification positively predicts willingness to sacrifice the self for the group, like fusion, but to a substantially weaker degree (Gomez, Brooks, et al., 2011). Researchers highlight such findings as evidence of fused selves. Pro-group self-sacrifice, however, is a less than optimal outcome to differentiate the two constructs. Effects of both forms of group alignment are positive in direction and their differing magnitudes might be due to psychometric properties of their measures, not the constructs per se.

Four Principles of Identity Fusion

Identity fusion is described by four basic principles. I summarize each, and then focus on identity-synergy, the one most relevant to my research question.

The *agentic-personal-self principle* emphasizes that fused members maintain and channel their personal agency into pro-group actions. For fused groups, persons concurrently shore up the personal self when the collective self is active, which enables them to utilize personal agency for group-serving goals. Highly identified group members

also strive to achieve group-serving goals, but in normative ways with motivation from their active collective self, whereas fused group members have motivation from their active personal self, in addition to collective self. Personal-agency afforded by the personal self is not subject to normative constraints, and therefore empowers fused persons to make extreme sacrifices on behalf of the group that other members would not make.

Studies find that exercise-induced arousal increases pro-group behaviors for fused individuals, but not for not-fused, highly identified individuals. The arousal manipulation increases feelings of personal agency and this personal agency mediates the relationship between fusion and endorsement of extreme pro-group behavior (Gómez, Brooks, et al., 2011, Study 9; Swann, Gómez, Huici, et al., 2010, Studies 3-4). Additionally, the effect is only found for the fused-ingroup and not other ingroups, ruling out individual differences as an explanation. Fusion's positive effect on pro-group behaviors is, therefore, in part due to the role of an agentic-personal-self.

The *relational-ties principle* underlines the relational nature of fusion, wherein fusion fosters overwhelming feelings of connection concurrently to the group and its members. Fused members conserve their view of other group members as unique individuals. As such, they are able to maintain relational ties with these members, rather than view them as interchangeable depersonalized agents like identified members do (Swann, Buhrmester, et al., 2014). Simultaneously active personal and collective selves permit attraction to group members through two avenues. Group members are valued for the collective characteristics they share with the group at the social identity level and the

individualized characteristics that lead to valued interpersonal relationships at the personal identity level.

Fusion is considered local or extended based on the size of the fused group. Local fusion is a sense of oneness to a small band or tight-knit group, like family, friends, or teammates. Relational ties in these smaller groups develop through direct interactions and relationships with other group members. In comparison, extended fusion represents a sense of oneness to a large social category, like a country or religion. Relational ties in these larger groups are projected—members vicariously attribute feeling family-like connections to all group members, despite a lack of direct interpersonal interaction with most members. Swann and colleagues (2014) find for fused groups, individuals view fellow members as psychological kin. Perception of familial ties mediates the relationship between fusion and endorsement of extreme pro-group behavior (Burhmester, et al., 2015; Swann, Buhrmester, et al., 2014, Study 3 & 4). Although members do not share genes like natural kin, perception of family ties might foster a similar sense of obligation and intensify feelings of solidarity with fused groups. Fused individuals might believe they will live on through group members, similar to how their genes live on through relatives. Overall, fused individuals uniquely maintain strong relational ties to their group members when their collective self is active, and the close-ties help explain in part why they are willing to make extreme self-sacrifices for fellow members.

The *irrevocability principle* highlights that fusion is stable over time and context. For example, fusion ratings show high test-retest correlations (i.e., little change) across delays ranging from 1 to 18 months following an original measure (Gómez, Brooks, et al., 2011, study 5; Swann et al., 2012). Fusion to groups does not fluctuate; in fact such

allegiance transcends group-relevant contexts. The social-categorization framework believes that changes in context lead to substantial changes in self-definition (Turner, et al., 1994), whereas fusion theory uniquely allows for contextual stability of selves.

Fusion's stable nature is not due to a particular personality trait of the fused person, nor is it due to a particular characteristic of the fused group. Instead, fusion uniquely varies within a person across their groups. That is, such a connection is a product of a distinct combination of a person with a group. Indeed, fusion varies across individuals' groups, and their willingness to self-sacrifice for those groups fluctuates as a function of this fusion (Heger & Gaertner, in press). Fusion demonstrates state-like, not trait-like, effects.

The *identity-synergy principle* emphasizes that the synergistic personal and collective selves of fused groups motivate endorsement of extreme self-sacrifice for the group. The two selves are simultaneously activated when either self is under threat. As a result, threat to the personal self or collective self of fused persons leads to increased willingness to sacrifice on behalf of the group (research detailed in next section; Gómez et al., 2011; Swann et al., 2009). Strongly identified persons are also willing to sacrifice on behalf of the group when their collective self is threatened, but not when their personal self is threatened, due to functionally antagonistic selves. Evidence that fusion increases group-serving actions when the personal self is active, contradicts the social-categorization framework that believes only activating the collective self should have repercussions for group-serving actions.

Evidence Consistent with Identity-synergy

Empirical support for identity-synergy has been gathered using correlational and experimental methods. Studies using the experimental method, in particular, have amassed convincing evidence. Swann et al. (2009) tested the personal and collective selves' union across three studies. The first study had participants list negative personal traits and complete scales for fusion and identification to their country. Participants were then randomly assigned to a verification or challenge condition where another participant ostensibly gave feedback that either confirmed or disputed the negative personal traits the participant had listed. The challenge condition threatened participants' self-verification, and consequently activated their personal self, whereas the verification condition did not. Afterwards, participants rated their willingness to fight and die for their country. In the challenge condition, participants fused to their country, compared to not-fused, were more willing to fight and die on its behalf. Fused persons activated their collective self when their personal self was threatened—evidence of functionally equivalent selves. Swann, Gomez and colleagues replicated these findings using a similar method in Study 2 and later with the verbal fusion scale, instead of pictorial measure (Gómez, Brooks, et al., 2011, study 10).

Study 3 used the willingness-to-fight-and-die scale's fight-items to manipulate activation of the personal self, collective self, or neither self. Participants were randomly assigned to report willingness to fight for themselves to activate the personal self, willingness to fight for their country to activate the collective self, or experienced no activation manipulation. Afterwards, participants reported willingness to die for their country.

Participants fused to their country were equally willing to die when their collective self or personal self was active. Persons not-fused to their country were more willing to die for the country when their collective self was active, but not when their personal self was active. Willingness to self-sacrifice for the group following activation of the personal self, for fused persons, supports identity-synergy; activation of the personal self promoted group-serving actions. When not fused to the group, however, the selves' demonstrated functional antagonism; activation of the personal self did not promote group-serving actions.

Similar patterns were found in a study that used a trolley dilemma to measure group-serving actions (Swann, Gómez, et al., 2014, Study 6). The dilemma is a hypothetical scenario in which participants must choose between saving themselves and allowing 5 ingroup members to be killed by a runaway trolley or flipping a switch to divert the moving trolley onto their track, sacrificing their own life to save the 5 ingroup members. Prior to the trolley dilemma, participants were asked to either think about their personal self, collective self or their surroundings (i.e., control condition). Fused group members were more willing to die to save the 5 ingroup members when either their personal or collective selves were active, compared to the control condition. Whereas, not-fused group members were more willing to die when their collective self, but not personal self, was active, compared to the control condition.

Gómez, Morales, and colleagues (2011) replicated these effects in a third paradigm that ostracized participants based on their group membership (collective self threat; study 1) or personal preferences (personal self threat; study 2 & 3). For fused ingroups, participants showed increased willingness to sacrifice for the group following

threat to either collective self or personal self, respectively. For not-fused ingroups, however, participants increased willingness to sacrifice for the group only after collective self threat.

Overall, experimental evidence supports identity synergy. Consistent with fusion theory's synergistic selves, in fused groups, activation of either self promoted group-serving goals. Consistent with the social-categorization framework's functional antagonism, in not-fused groups, activation of the personal self muted the collective self, and as such, the personal self did not promote group-serving goals, but the collective self did.

Empirical Gaps of Identity-synergy

For fused persons, the personal self and collective self energize group-serving goals. Furthermore, the identity-synergy principle would predict that the personal self and collective self should also energize *individual*-serving goals for fused persons. Research on identity synergy, however, almost exclusively uses a paradigm in which the personal self bolsters the collective self (Swann, Jetten, Gómez, Whitehouse, & Bastian, 2012). The reciprocal relationship of the selves, in which the collective self bolsters the personal self, is yet to be sufficiently explored. If fusion is indeed a merging of the personal and collective selves, we should expect that activating the collective self would evidence a concurrently active personal self, similar to how an active personal self evidences a concurrently active collective self (e.g., willingness to self-sacrifice for the group; Gómez, Brooks, et al., 2011; Gómez, Morales, et al., 2011; Swann, et al., 2009).

Two studies have explored fusion and individual-level, rather than group-level, outcomes. Swann and colleagues' (2009) also assessed personal self-certainty in Study 3. Participants rated how certain they were of five negative personality traits before they were randomly assigned to experience activation of the personal self, collective self or neither self (as discussed previously). After the activation manipulation, participants again rated their certainty of the personality traits. Fused persons expressed greater personal self-certainty after feedback in the personal and collective self activation conditions, compared to the control condition (self-certainty did not vary across the two activation conditions). Not-fused persons expressed greater self-certainty in the personal self activation, but not collective self activation or control conditions. The increase in personal self-certainty as a result of the collective self activation condition for fused, but not not-fused, persons provides initial support for reciprocal activation of the selves.

Additionally, an online study looked at the effect of fusion on prediction of personal fortunes following the 2008 elections in the United States and Spain (Buhrmester, Gómez, Brooks, Morales, Fernández, & Swann, 2012). In the month leading up to the 2008 elections, fusion to political party was measured and after the elections participants reported how they thought the outcome would influence their quality of life, an individual-level outcome. Limitations of the study (e.g., 43% attrition rate, lack of random assignment, lack of replication, single-item measure) however, cast doubt on its merit.

Fusion to political party predicted greater personal future well-being when in the victorious party and deflated personal future well-being when in the defeated party. Identification to political party also predicted greater future well-being when their party

won, but that did not translate to worse well-being when their party lost. That is, fused individuals' perceived that their personal fortunes aligned with their group's fortunes regardless of the election outcome, whereas not-fused highly identified individuals only aligned their personal and group fortunes when their group won the election and it benefited their personal self. These findings were interpreted as evidence for identity synergy because fused individuals' group outcomes permeated their predictions of future personal self outcomes, which was not always true for not-fused individuals.

Additional research needs to investigate if fused persons' collective self supports individual-serving actions. The work done with personal self-certainty and imagined personal future life outcomes provide promising evidence of reciprocal activation of the selves, but are not enough to substantiate such a claim. Thus far, the closest examination of reciprocal activation of the selves is research by my colleague and I, detailed in the next section (Heger & Gaertner, in press).

Initial Support: Testing Reciprocal Activation of the Selves

Three studies tested reciprocal activation of the selves. Heger and Gaertner (in press) assessed whether the personal self bolstered the collective self by measuring willingness to fight and die for the group. We additionally assessed whether the collective self bolstered the personal self (i.e., reciprocal activation) by measuring willingness to have the group or a group member fight and die for the self (modified willingness-to-fight-and-die scale; Gomez, Brooks, et al., 2011). Again, both fusion theory and the social-categorization framework positively predict self sacrifice for the group. We

created the group sacrifice scale because identity fusion theory and the social-categorization framework would have diverging predictions.

According to the social-categorization framework, an increase in collective self salience entails a decrease in personal self salience and promotion of group-serving, but not individual-serving, goals. Consequently, a strong connection to a group should not positively predict reported willingness to sacrifice the group for the personal self. Identity fusion theory's principle of identity-synergy, however, offers a divergent prediction. If each self activates the other, there should be a reciprocal (not antagonistic) promotion of group-serving and individual-serving goals. Consequently, a strong connection to a group should positively predict both reported willingness to sacrifice one's self for the group and sacrifice the group for one's self. Across three studies, we measured or manipulated fusion to ingroups and subsequently had participants' rate their willingness to fight and die for the ingroups, and willingness for the ingroups (and/or ingroup members) to fight and die for one's self.

Study 1

Participants and Procedures

One hundred and twenty American undergraduates (60 males, 59 females, 1 unspecified) participated for partial credit in a general psychology course at the University of Tennessee. Participants rated their fusion (see appendix A; Gómez et al., 2011) and identification (see appendix B; Mael & Ashforth, 1992) with the US, and reported their willingness to sacrifice the self for the US (willingness-to-fight-and-die

scale, see appendix C; Swann et al., 2009), and sacrifice the US for themselves (modified willingness-to-fight-and-die scale, see appendix D).

Results

In separate analyses we simultaneously regressed self sacrifice and group sacrifice, respectively, on fusion and identification. Replicating past research, willingness to sacrifice the self for the group was positively associated with both fusion, $B = 0.381$, $t(117) = 4.31$, $p = .0001$, and identification, $B = 0.379$, $t(117) = 4.01$, $p = .0001$. Consistent with fusion's reciprocal activation of the personal and collective selves, *willingness to sacrifice the group* for the self was positively related to fusion, $B = 0.28$, $t(117) = 3.12$, $p = .0023$, but not related to identification, $B = -0.18$, $t(117) = -1.84$, $p = .0685$.

Aside from needed replication, there are two limitations of Study 1. First, our modified group sacrifice scale confounded the fight and die items, respectively, with sacrificing individual members of the group (fight items) and the group as a whole (die items). For example, "I would sacrifice *my country* if it saved my life" versus "If someone physically threatened me, I would be glad for another *citizen of my country* to fight on my behalf."

If we examine the fusion effect separately for fight and die, fusion positively and significantly predicted self sacrifice both in terms of fighting, $B = 0.39$, $t(117) = 4.17$, $p = .0001$, and dying, $B = 0.35$, $t(117) = 2.90$, $p = .0045$, and significantly predicted group sacrifice in terms of fighting (having a member fight on behalf of the self), $B = 0.35$, $t(117) = 3.50$, $p = .0007$, but not dying (having the group die on behalf of the self), $B = 0.10$, $t(117) = 0.86$, $p = .3904$. Due to the group-sacrifice scale's confounds, it

is unclear whether the non-significant effect of dying for group sacrifice reflects participants' unwillingness to endorse the death of others for one's self (compared to others fighting for one's self) or an unwillingness to have the group as a whole sacrifice (compared to a group member sacrifice).

A second limitation is that we only assessed responses to a single ingroup. Consequently, we cannot distinguish a state-like versus trait-like effect of fusion. The positive effect of fusion, therefore, is potentially confounded with other person-level traits that promote endorsement of extreme sacrifice. If fusion is group specific, then patterns of sacrifice (self, group, and member) should vary within-persons as a function their fusion to particular groups. The next two studies overcame both limitations.

Study 2

Study 2 and 3 employed procedures in which participants contemplated multiple ingroups to enable an examination of a state-like effect of fusion distinct from stable traits that might promote endorsement of extreme sacrifice. Fusion should be a unique affiliation that varies across ingroups within a person. Further, we modified the self sacrifice version of the willingness-to-fight-and-die scale (Gomez, Brooks, et al., 2011) to create three separate 7-item scales (see Table 1.1) that distinguish sacrificing (a) one's self for the group (*self sacrifice*), (b) an individual group member for one's self (*member sacrifice*), and (c) the group as a whole for one's self (*group sacrifice*).

Table 1.1. Self, Member, and Group Sacrifice Scales

	Sacrifice Type		
Item	Self	Member	Group
1	I would fight if someone physically threatened another member of this group	I would let another member of this group fight someone who physically threatened me	I would let this group fight someone who physically threatened me
2	I would fight if someone insults or makes fun of this group as a whole	I would let another member of this group fight someone who insults or makes fun of me	I would let this group fight someone who insults or makes fun of me
3	I would help others get revenge on someone who insulted this group	I would let another member of this group help get revenge on someone who insulted me	I would let this group help get revenge on someone who insulted me
4	Hurting other people is acceptable if it means protecting this group	Having another member of this group hurt other people is acceptable if it means protecting me	Having my group hurt other people is acceptable if it means protecting me
5	I would do anything to protect this group	I would let another member of this group do anything to protect me	I would let this group do anything to protect me
6	I would sacrifice my life if it saved the life of another member of this group	I would sacrifice another member of this group if it saved my life	I would sacrifice this group if it saved my life
7	I would sacrifice my life if it gave this group status or monetary reward	I would sacrifice another member of this group if it gave me status or monetary reward	I would sacrifice this group if it gave me status or monetary reward

Note. We derived member and group sacrifice items from the corresponding self sacrifice items of Swann et al. (2009). Participants rated their agreement (1 = “strongly disagree” to 7 = “strongly agree”) with each item.

Participants and Procedures

One hundred and ninety-one undergraduates (87 males, 100 females, 4 unspecified) participated online for partial credit in a general psychology course at the University of Tennessee. Participants first named and described up to six groups to which they belong (for prompt see appendix E) and, for each group, rated their (a) verbal fusion (appendix A), (b) identification (appendix B) and willingness to sacrifice (c) the self for the group, (d) the group for the self, and (e) a single member of the group for the self (reference Table 1.1). The three sacrifice scales were counterbalanced as were whether the sacrifice scales were completed before or after the fusion and identification scales. The order of the latter two were also counterbalanced (such ordering issues did not moderate hypothesis relevant results).

Results

We excluded one participant from analysis that did not rate any groups and we excluded five particular groups from two participants because they rated a subset of their groups (5 groups and 2 groups of their 6 total groups). Effectively, we had a sample of 190 participants with a total of 627 groups. Participants listed on average 3 groups (*SD* = 1.74) with a minimum of 1, maximum of 6, and mode and median of 3.

We used multi-level regression in Proc Mixed of SAS 9.4 to account for the nested nature of the data. To distinguish within-person group-specific associations of fusion (and identification) to sacrifice, we person-centered fusion (and identification) scores and controlled for such person-level mean scores in the analyses (Raudenbush & Bryk, 2002; Wang & Maxwell, 2015).

We regressed sacrifice scores on an intercept, the factorial effects of person-centered fusion, sacrifice-type (self, group, or member), and sacrifice-way (fight or die), the factorial effects of person-centered identification, sacrifice-type, and sacrifice-way, and each person's mean fusion and mean identification. Furthermore, we performed model comparison tests (with restricted maximum likelihood and likelihood-ratio tests) that suggested the appropriate structure of random effects was estimation of an intercept and slopes of person-centered fusion, person-centered identification, sacrifice-type, and sacrifice-way.

The analysis revealed a three-way interaction between person-centered fusion, sacrifice-type and sacrifice way, $F(2, 2711) = 6.31$, $p = .0018$, indicating that data were consistent with identity-synergy in regard to fighting, but not dying. In particular, for fighting, as fusion increased from ingroup to ingroup within-a-person, so too did reported willingness to sacrifice the self for the group, $B = 0.31$, $t(147) = 5.39$, $p = .0001$, 95% CI [0.20, 0.43], sacrifice a group member for the self, $B = 0.23$, $t(147) = 3.92$, $p = .0001$, 95% CI [0.11, 0.34], and sacrifice the group as a whole for the self, $B = 0.28$, $t(147) = 4.81$, $p = .0001$, 95% CI [0.16, 0.39]. Similarly, as identification increased within-a-person so too did reported willingness to sacrifice the self for the group, $B = 0.20$, $t(118) = 3.22$, $p = .0016$, 95% CI [0.08, 0.32], sacrifice a group member for the self, $B = 0.13$, $t(118) = 2.11$, $p = .0369$, 95% CI [0.01, 0.25], but not sacrifice the group as a whole for the self, $B = 0.06$, $t(118) = 1.05$, $p = .2954$, 95% CI [-0.06, 0.18].

The dying dimension revealed evidence of increased willingness for self sacrifice, but not for either form of group sacrifice. In particular, as fusion increased within-a-person across ingroups so too did reported willingness to sacrifice the self for the group,

B = 0.31, t(147) = 5.32, p = .0001, 95% CI [0.19, 0.42], but not to sacrifice a group member for the self, B = -0.03, t(147) = -0.46, p = .6476, 95% CI [-0.14, 0.09], nor sacrifice the group as a whole for the self, B = -0.06, t(147) = -1.10, p = .2736, 95% CI [-0.18, 0.05]. Increased identification within-a-person was unrelated to dying in terms of sacrificing the self for the group, B = 0.04, t(118) = 0.58, p = .5651, 95% CI [-0.09, 0.16], sacrificing group members for the self, B = -0.00, t(118) = -0.01, p = .9907, 95% CI [-0.12, 0.12], and sacrificing the group as a whole for the self, B = -0.04, t(118) = -0.69, p = .4902, 95% CI [-0.16, 0.08].

In line with the identity-synergy principle, we observed evidence of reciprocal, rather than antagonistic, group-serving and individual-serving goals. Fusion predicted willingness to self, group and member sacrifice via fighting, but not dying. This positive effect on member and group sacrifice cannot be explained by the social-categorization framework but is consistent with identity fusion. The group identification measure even positively predicted willingness for a group member (but not the group) to fight for oneself, an effect consistent with synergistic selves.

The fusion consistent effects found for member and group sacrifice, however, are apparently limited to the fight dimension. Neither fusion nor identification positively predicted a willingness to have the group or a group member die for one's self. These data clarify the first study's results for which the die items were confounded with sacrificing the group as a whole. The null effect in Study 1 should be considered a reluctance to endorse the death of others for oneself, rather than a concern over having the group as a whole sacrifice.

Lastly, we isolated a state-like effect of fusion such that it varied within participants' ingroups and differentially predicted sacrifice accordingly. Study 3 also uses a within-subject method to examine the effect of fusion on self, member, and group sacrifice via fighting and dying, but manipulates fusion.

Study 3

Participants and Procedures

One hundred and ninety-seven undergraduates (85 males, 108 females, 4 unspecified) participated online for partial credit in a general psychology course at the University of Tennessee. To begin, they saw a modified version of the fusion pictorial scale with four images (see Figure 1.2; the first image, in which the self and group do not overlap, was omitted to clarify the scale pertains to ingroups). Text accompanied the images and explained that people might feel strongly connected to some groups to which they belong, but not to others and that moving across the four images from left to right represents an increasing feeling of connection with a group. We then randomly assigned participants to think of a group to which they belong that represented the left-most image (*not-fused ingroup*; for prompt see appendix H) or right-most image (*fused ingroup*; for prompt see appendix G).

After selecting a fused or not-fused ingroup, participants rated their willingness to sacrifice the self for the group, the group for the self, and a single group member for the self (counterbalanced across participants). Participants additionally filled out, as manipulation checks, the verbal fusion (Gómez, Brooks, et al., 2011) and identification measures (Mael & Ashforth, 1992) on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.

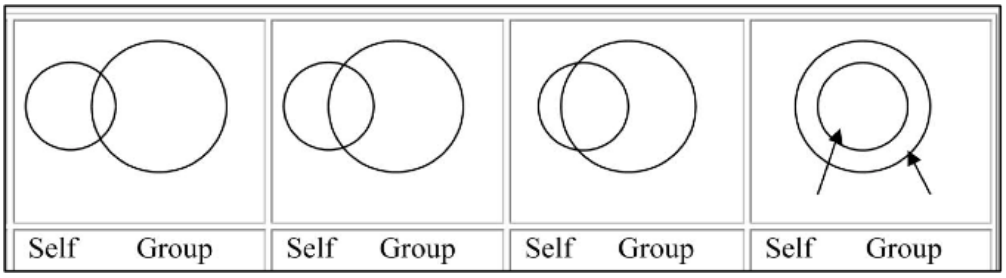


Figure 1.2. Modified fusion pictorial scale

Participants then repeated the steps in regard to another ingroup that represented the other end of the pictorial fusion scale. The order of the fused and not-fused ingroup prompts was counterbalanced and order did not moderate hypothesis relevant effects.

Results

We excluded the responses of eight participants: five listed the same group for the fused and not-fused conditions and three listed outgroups rather than ingroups. So, our effective sample size is 189 participants with a total of 372 groups – six participants responded only to one of the two ingroup prompts (three not-fused and three fused) and exclusion of their responses does not change the conclusions (based on p-values and direction of effects). For each reported analysis, we used a 2(Ingroup: fused, not-fused) x 3(Sacrifice-type: self, group, member) multi-level ANOVA in Proc Mixed of SAS 9.4 to account for the within-subject data. Model comparisons were conducted (with restricted maximum likelihood and likelihood-ratio tests) to determine which random effects to estimate.

Manipulation checks. We entered verbal fusion and identification scores into separate fused-vs.-not-fused ANOVAs (each model estimating random effects for the intercept). As intended, participants reported higher fusion to their fused ingroup

(M = 5.67, SE = .09) than their not-fused ingroup (M = 2.57, SE = .09), F(1,181) = 622.37, p = .0001. Participants also reported higher identification to their fused ingroup (M = 5.81, SE = .11) than their not-fused ingroup (M = 3.21, SE = .11), F(1,181) = 373.85, p = .0001. Importantly, a pair of within-subject ANCOVAs revealed that the fusion manipulation uniquely increased fusion. In particular, the fusion manipulation (a) continued to increase reported fusion, F(1,180) = 151.66, p = .0001, when identification was controlled, and (b) had no effect on reported identification, F(1,180) = 0.10, p = .7519, when fusion was controlled.

Willingness to sacrifice. We regressed sacrifice ratings onto an intercept and the factorial effects of the within-subject fusion manipulation (fused, not-fused), sacrifice-type (self, member, group), sacrifice-way (fight, die), and estimated random effects for the intercept, fusion, sacrifice-type, and sacrifice-way. A significant Fusion x Sacrifice-type x Sacrifice-way interaction, F(2,1283) = 18.32, p = .0001, indicated that the data were consistent with the identity-synergy principle in regard to fighting but not dying. [Conclusions, based on p-values and direction of effects, remain the same when we statistically control identification by adding it to the regression model as a covariate.]

In terms of fighting, fusion positively predicted all three types of sacrifice. Participants reported greater willingness to (a) *sacrifice the self for the group* for an ingroup to which they are fused (M = 4.41, SE = 0.11) than not-fused (M = 2.53, SE = 0.11), B = 1.88, t(182) = 15.84, p = .0001, 95% CI [1.65, 2.12] (b) *sacrifice a group member for the self* for an ingroup to which they are fused (M = 3.58, SE = 0.11) than not-fused (M = 2.50, SE = 0.11), B = 1.08, t(182) = 9.05, p = .0001, 95% CI [0.84, 1.31], and (c) *sacrifice the group as a whole for the self* for an ingroup to which they are fused

(M = 3.75, SE = 0.11) than not-fused (M = 2.57, SE = 0.11), B = 1.18, t(182) = 9.97, p = .0001, 95% CI [0.95, 1.42].

In terms of dying, however, fusion positively predicted self sacrifice and negatively predicted both member and group sacrifice. Participants reported greater willingness to *sacrifice the self for the group* for an ingroup to which they are fused (M = 3.56, SE = 0.11) than not-fused (M = 2.19, SE = 0.11), B = 1.37, t(182) = 11.50, p = .0001, 95% CI [1.13, 1.60] but *lesser* willingness to *sacrifice a group member for the self* for an ingroup to which they are fused (M = 1.84, SE = 0.11) than not-fused (M = 2.20, SE = 0.11), B = -0.36, t(182) = -2.99, p = .0032, 95% CI [-0.59, -0.12], and to *sacrifice the group as a whole for the self* for an ingroup to which they are fused (M = 2.11, SE = 0.11) than not-fused (M = 2.61, SE = 0.11), B = -0.50, t(182) = -4.19, p = .0001, 95% CI [-0.73, -0.26].

Study 3 further replicated Studies 1 and 2, evidencing data consistent with the reciprocal activation of the selves for the fight, but not die, dimension. Fusion increased willingness to have the self fight for the group and to have the group or a group member fight for the self. Willingness to have the group or a group member die for one's self, however, appeared to uncover an antagonistic, not reciprocal, pattern between self and group sacrifice. Fusion increased willingness to die for the group and decreased willingness to have the group or a group member die for the self. The negative effect of fusion on member and group sacrifice via dying is unstable across studies; Studies 1 and 2 demonstrated null effects. Therefore, the evidence consistent with the identity-synergy principle replicates across studies, but the evidence consistent with the social-categorization framework does not.

Discussion of Initial Studies

In three primary studies, participants responded in regard to (1) the United States, (2) up to six idiosyncratically self-generated ingroups, and (3) two idiosyncratically self-generated ingroups, one to which they were fused and one to which they were not fused. We assessed self sacrifice, modified the willingness-to-fight-and-die scale (Gomez, Brooks et al., 2011) to assess group sacrifice and, additionally in Studies 2 and 3, assessed member sacrifice. All three studies evidenced data consistent with the identity-synergy principle of identity fusion theory in regard to sacrificing the self for the group and sacrificing the group for the self via fighting.

Despite the lack of support for reciprocal activation of the selves for the die items, we were not overly surprised or concerned. Consider how harsh and callous the die items are: "I would sacrifice (another member of) my group if it saved my life; I would sacrifice (another member of) my group if it gave me status or monetary reward." Endorsement of such statements is not immune to social desirability concerns. Supporting death of the group (or a member) for one's self versus death of the self for one's group has drastically different implications. The first makes you coldhearted, whereas the latter makes you heroic. Self-image concerns likely played a large role in the lack of relationship between fusion and willingness to have the group or a group member die to save one's self.

Introduction to Present Research

Reciprocal Activation of the Selves

The primary goal of the present research is to systematically test identity fusion theory and the social-categorization framework against one another by expanding upon my preliminary research on the reciprocal activation of the selves (Heger & Gaertner, in press). Empirical support for identity-synergy focuses on willingness to make sacrifices in relation to the two selves (including our studies). Identity fusion theory makes a broader claim, however, that "due to the porous boundaries between the personal and social self of such [fused] individuals, activating either one will activate the other" (Swann et al., 2012, p. 443). Therefore, the current research measures mere activation of the personal and collective selves, instead of self and group sacrifices. Additionally, evaluating self-activation will eradicate the social desirability concerns that were encountered in our previous studies.

Motivational Primacy of the Selves

A secondary goal of the present research is to test whether identity fusion moderates the motivational primacy of the selves. Research has identified a three-tiered hierarchy of motivational primacy with the personal self at the top, followed by the relational self, and then the collective self at the bottom (Gaertner et al., 2012; Gaertner, Sedikides, Vevea, & Iuzzini, 2002; Sedikides, Gaertner, Luke, O'Mara, & Gebauer, 2013). That pattern persists across a variety of methods (e.g., cognitive accessibility,

reactions to threats) and potential moderators (e.g., Eastern vs. Western culture, group identification, intergroup vs. intragroup context).

Identity fusion might moderate the motivational primacy of the selves because the personal and collective selves are unified, with each self bolstering the other. Maybe the existing three-tiered-hierarchy occurs in regard to groups to which persons are not fused. But to groups to which persons are fused, perhaps the hierarchy disintegrates and all three selves based on personal self, relational connections to group members, and the collective-self of the group as a whole become equally valued and motivationally potent. The methods in Study 1 and 2 simultaneously assess overall activation of the selves across the task (i.e., motivational self primacy), in addition to assessing the covariance of activation between personal and collective selves across the task (i.e., reciprocal activation).

Details of Present Research

Three experiments tested the reciprocal activation of selves, the first two of which also tested the motivational primacy of the selves. Each study manipulated fusion by randomly assigning participants to think about either a fused or not-fused ingroup (as in Heger & Gaertner, in press, Study 3), and then captured personal self activation with a unique outcome measure. Once participants selected and described the ingroup, personal self activation was measured by a) how well personal self (I, me, my) and collective self (we, our, us) pronouns were rated to fit 20 statements (Study 1), b) how representative the personal, relational and collective selves were rated for 20 self-descriptions participants

listed (Study 2), and c) how fast self-words were identified compared to neutral-words after a fused ingroup prime in a semantic priming task (Study 3).

CHAPTER TWO
STUDY 1

Introduction

Research has used pronoun selection tasks to measure self-focus dating back to the 1970s; also referred to as self-attention, self-consciousness, or self-awareness. Pronoun tasks equate a greater frequency of or preference for first-person singular pronouns (i.e., *me, my* and *I*) with greater self-focus. The first task created assessed which English pronouns participants' thought corresponded to different foreign language pronouns (Davis & Brock, 1975). Later, a more widely used measure of self-focus called the *Linguistics Implications Form* (LIF) was developed (Wegner & Giuliano, 1980; 1983).

The LIF consists of unrelated statements, each containing a blank and three pronouns that could fill the blank. Participants are instructed to select the pronoun that they feel best completes the statement; all options are grammatically correct. The task is set up so that for each statement participants' must choose between a first-person singular pronoun (i.e., *I, me* and *my*), a third-person pronoun (i.e., *she, his, they,* etc.) or a first-person plural pronoun (i.e., *us, we,* and *our*). Selecting more first-person singular pronouns in the task indicates greater awareness and focus on one's self.

The LIF continues to be a popular method for measuring self-focus (e.g., Salovey, 1992, Silvia & Phillips, 2003, Snow, Duval & Silvia, 2004, Wisman, Heflick & Goldenberg, 2015). The LIF's assessment of self-salience is in regards to the personal self. However, the collective self could logically be represented by the first-person plural

pronouns in the task like *us, we* and *our*. As such, the LIF is easily modifiable to permit direct comparisons of the activation of personal and collective selves. As a result, the LIF was a fitting methodology to achieve my goal to test reciprocal activation and motivational primacy of the selves.

In Study 1, I had participants rate the fit of each pronoun (personal and collective) on the LIF, rather than choose a given pronoun as best fitting, to enable assessment of reciprocal activation. Therefore, for a given statement, participants rated how well a personal self pronoun (i.e., I, me, my) and a collective self pronoun (i.e., us, we, our) fit. Reciprocal activation of the selves is reflected in the covariation of the rated fit of the personal and collective pronouns across sentences. In particular, in the fused ingroup condition (but not the not-fused condition) the rated fit of the two pronouns should positively covary (i.e., to the extent the collective pronoun is deemed more or less appropriate, so to should be deemed the fit of the personal pronoun).

Motivational primacy of the selves is reflected in the average rated fit of the personal and collective pronouns across sentences. If fusion moderates the primacy of the selves, in the fused ingroup condition the mean fit of the personal and collective pronouns should not differ significantly, whereas in the not-fused ingroup condition the mean fit of the personal pronouns should be higher than that of the collective pronouns. Furthermore, if the personal self reigns superior and motivational primacy of the selves is not moderated by fusion then personal pronouns should have higher mean fit ratings than collective pronouns in both the fused and not-fused ingroup conditions.

Participants and Procedures

Participants were 195 undergraduates (112 female, 81 male, 2 unspecified) at the University of Tennessee enrolled in general psychology that participated online for partial class credit. First, participants read an explanation of a modified pictorial fusion scale revised from my previous work (see Figure 2.1; arrows specify the self and group circles in each image). The text explained that people might feel strongly connected to some groups to which they belong, but not to others, and that moving across the four images from left to right represented an increasing feeling of connection with a group (see appendix F). I then randomly assigned participants to think of a group to which they belong that represented the left-most image (*not-fused ingroup condition*; appendix H) or right-most image (*fused ingroup condition*; appendix G). Once participants selected an ingroup, they described it to activate the collective self. Their ingroup name was visible at the top right-hand corner of the screen throughout the remainder of the study (e.g., Member of: *ingroup name*) to help keep the collective self salient.

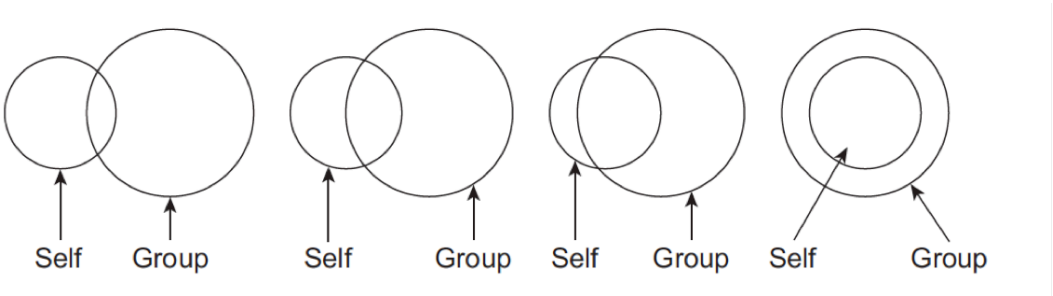


Figure 2.1. Modified fusion pictorial scale (version 2)

Participants then completed a revised linguistic implications form (LIF; appendix I; Wegner & Guiliano, 1983). The LIF is an implicit measure of self-focus. I modified the LIF in two ways to better suit my research questions. First, instead of selecting one pronoun that best fit each statement, participants rated how well they thought each pronoun fit the statement; two ratings replaced the mutually exclusive choice. Second, each statement gave two pronoun options, instead of three—those pronouns equivalent to the personal self (I, me, my) and to the collective self (us, we, our). These changes permitted concurrent measurement of both personal and collective self activation and tests of covariation between the activation of the selves.

Twenty sentences were presented individually, each with parentheses that contained the two pronouns. Participants rated personal pronoun fit first for half the sentences and collective pronoun fit first for the other half. Instructions explained that both pronouns were grammatically appropriate and made sense for completion of each sentence. Participants then rated each pronoun in regard to how well, in their opinion, it fit the given sentence on a 1 (*fits well*) to 5 (*fits extremely well*) scale. Lastly, as a manipulation check, participants completed the verbal fusion (Gomez, Brooks, et al., 2011) and identification scales (Mael & Ashforth, 1992) in regard to their ingroup (1= *strongly disagree*; 7= *strongly agree*). Participants were then debriefed and thanked.

Results

I excluded forty participants. Per request of the Institutional Review Board, an item at the end of the study allowed students to opt to include or destroy their data. Seventeen participants (9 not-fused, 8 fused) self-selected to destroy their data.

Additionally, 16 participants did not follow the directions for the pictorial fusion task: 8 did not write an actual group name (e.g., self-group, left, highest degree of connection to group, closest group, individuality; 2 not-fused, 6 fused), 4 wrote about friends in the low fusion condition, 3 did not provide a group name (1 not-fused, 2 fused), and 1 wrote a group they did not belong to (not-fused). Seven participants did not follow the directions for the pronoun task (e.g., rated only one pronoun for each sentence instead of both; 2 not-fused, 5 fused). Hence, analyses are based on 155 participants.

I analyzed the data two ways: one way to test reciprocal activation of the selves and the other way to test motivational primacy of the selves. For each reported analysis, I used multi-level regression in Proc Mixed of SAS 9.4 to account for the nested structure of the data. Model comparison tests were conducted (with restricted maximum likelihood and likelihood-ratio tests) to determine which random effects to estimate.

Manipulation Checks

I separately regressed verbal fusion and identification scores on an intercept and fusion condition (fused ingroup, not-fused ingroup). As intended, participants in the fused ingroup condition reported higher verbal fusion ($M = 5.51$, $SD = .89$) than participants in the not-fused ingroup condition ($M = 2.52$, $SD = 1.19$), $F(1,153) = 316.13$, $p = .0001$. The fused ingroup condition also reported higher identification ($M = 5.71$, $SD = 1.06$) than the not-fused ingroup condition ($M = 3.54$, $SD = 1.46$), $F(1,153) = 112.79$, $p = .0001$. Importantly, a pair of ANCOVAs revealed that the fusion manipulation increased verbal fusion when identification was controlled, $F(1,152) = 116.30$, $p = .0001$, but did not increase identification when verbal fusion was controlled, $F(1,152) = 0.01$,

p = .9170.

Reciprocal Activation of the Selves

I created a multi-level data set so that each participant had 20 rows of data to represent the 20 statements of the linguistics implication form. Each row contained, for the given sentence, a personal self and a collective self pronoun fit rating (further referred to as *personal fit* and *collective fit*). Person-centered collective fit was calculated to distinguish participants' item-specific rating of collective fit from his or her average collective fit across the items (which was controlled for in analyses; Raudenbush & Bryk, 2002; Wang & Maxwell, 2015). This data structure enabled me to test whether personal fit covaried with person-centered collective fit across items (i.e., reciprocal activation).

I regressed personal fit on an intercept, person-centered collective fit, fusion condition (fused ingroup, not-fused ingroup), an interaction between the latter two, and person-level mean collective fit. Model comparison tests suggested estimation of random effects for the intercept, person-centered collective fit and their random covariance.

Inconsistent with the reciprocal activation hypothesis, the Fusion x Person-centered Collective Fit interaction was not significant, $F(1, 2742) = 0.01$, $p = .9547$, indicating that the tendency for personal pronoun fit to positively vary with collective pronoun fit did not vary with fusion. Instead, a main effect of person-centered collective fit was found regardless of whether participants were in the fused or not-fused ingroup condition. Person-centered collective fit negatively predicted personal fit, $B = -0.16$, $t(148) = -3.46$, $p = .0007$. That is, as the deemed fit of collective pronouns increased, the

deemed fit of personal pronouns decreased. Such a pattern supports the social-categorization framework's functional antagonism principle.

Valence Concerns

People strive to make positive evaluations of themselves, even more so than evaluations that are accurate or certain (Alicke & Sedikides, 2009; Sedikides, 1993). For example, persons consistently view the self as better than average, make self-serving attributions, and enhance on tasks, even across cultures (Alicke, 1985; Dunning, Meyerowitz, & Holzberg, 1989; Heider, 1958; Sedikides, Gaertner, & Toguchi, 1993). As such, self-enhancement is a powerful motivation and one that might have uniquely affected personal fit in this task.

The LIF statements varied in valence, with some more positive, such as "The cashier charged (us, me) too little for the groceries" and others more negative, such as "At first it didn't seem to make any difference, but by later that night the noise from the party was entirely too loud to allow (me, us) to sleep." To account for possible self-enhancement motives, I created a categorical variable *valence* to delineate whether fit scores were from pronouns rated in positive (n= 9) versus negative statements (n= 11). If participants self-enhanced during the study, it is probable that personal fit might be higher for those LIF statements that are positive compared to those that are negative. Additionally, the relationship between collective fit and fusion on personal fit might be moderated by whether a statement implies positivity versus negativity.

To test whether valence was an important moderator, I repeated my original analysis by regressing personal fit on the factorial effects of fusion condition, valence (positive, negative), and person-centered collective fit and mean collective fit. Model

comparison tests suggested estimation of random effects for the intercept, person-centered collective fit and their covariance.

The analysis did not reveal a significant Valence x Fusion x Person-centered Collective Fit interaction, $F(1,2738) = 1.91$, $p = .1675$, indicating that personal fit was not differentially predicted when valence was accounted for across fusion conditions and levels of person-centered collective fit. In fact, with valence in the analysis, the null interaction between fusion and person-centered collective fit was replicated, $F(1,2738) = 0.01$, $p = .9336$.

Whether a statement was positive or negative moderated the effect of person-centered collective fit on personal fit, $F(1,2738) = 12.16$, $p = .0005$. However, for both positive and negative statements, person-centered collective fit significantly and negatively predicted personal fit, the relationship was simply stronger for positive statements, $B = -0.21$, $F(1,148) = 33.97$, $p = .0001$, than negative, $B = -0.10$, $F(1,148) = 8.03$, $p = .0052$. Demonstrating the universal tendency to self-enhance, a main effect of valence for personal fit was discovered, $B = .06$, $t(2738) = 3.29$, $p = .0010$, such that positive statements had greater personal fit ($M = 4.01$, $SD = 1.16$), than negative statements ($M = 3.83$, $SD = 1.25$). Overall, concerns of statement valence did not affect hypothesis relevant results, but related findings aligned with self-enhancement literature.

Motivational Primacy of the Selves

To account for dependencies in the data, I created a multi-level data set with *pronoun fit* (fit scores averaged across the 20 statements) as a within-subject variable and *self-type* as a categorical variable that classified whether the pronoun fit score was for a

personal self or collective self pronoun. This data structure (two rows per participant) enabled a test of whether mean pronoun fit scores differed for personal versus collective self pronouns (i.e., motivational primacy).

I regressed pronoun fit on an intercept, self-type (personal, collective), fusion condition and the interaction between self-type and fusion condition. Model comparison tests suggested estimation of random effects for the intercept. The analysis revealed no interaction between self-type and fusion condition, $F(1,153) = 1.23$, $p = .2697$. A main effect of self-type was found, $F(1,153) = 80.15$, $p = .0001$, such that mean personal fit ($M = 3.92$, $SD = .70$) was higher than mean collective fit ($M = 3.51$, $SD = .76$), regardless of fusion condition. That is, fusion did not moderate the motivational primacy of the selves. In fact, mean personal fit was higher than mean collective fit for both fused and not-fused ingroups (see Figure 2.2). The primacy of the personal self was evidenced regardless of whether fusion condition activated a fused or not-fused ingroup. Therefore, Study 1 provides initial evidence that the hierarchy of the self-system persists, despite fusion's synergy of the personal and collective selves.

Inclusion of Valence

I repeated the motivational primacy analysis with statement valence as an additional predictor. This was to ensure valence did not differentially affect the relationship between fusion condition and self-type. I conducted a multi-level ANOVA with a factorial crossing of Self-type 2(personal, collective) x Fusion Condition 2(fused ingroup, not-fused ingroup) x Valence 2(positive, negative). Model comparison

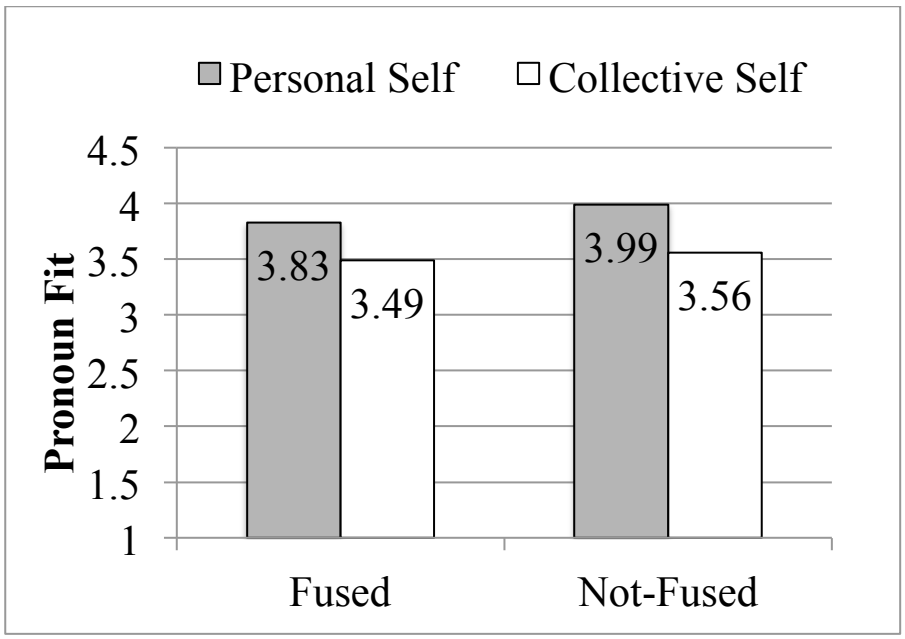


Figure 2.2. Fusion and mean pronoun fit ratings for the personal and collective self

tests suggested the estimation of random effects for the intercept and self-type.

The Fusion x Valence x Self-type interaction was not significant, $F(1,306) = 0.38$, $p = .5358$, indicating the tendency for mean fit to vary with fusion did not vary with valence. Additionally, there was no difference between mean fit scores for fused and not-fused ingroups solely as a function of statement valence, $F(1,306) = 0.04$, $p = .8351$. Replicating how powerful self-enhancement motives are, valence interacted with self-type, $F(1,306) = 67.08$, $p = .0001$, such that personal self pronouns had a higher mean fit for positive statements ($M = 4.01$, $SD = .73$) than negative statements ($M = 3.83$, $SD = .67$), $B = -.18$, $t(306) = -4.16$, $p = .0001$, and collective self pronouns had a lower mean fit for positive statements ($M = 3.35$, $SD = .77$) than negative statements ($M = 3.67$, $SD = .71$), $B = .32$, $t(306) = 7.42$, $p = .0001$. Overall, the model including valence replicated

null results for fusion's moderation of the primacy of the selves, and if anything created a stricter test by accounting for the tendency to self-enhance the personal self, specifically on positive statements.

Discussion

I activated a fused or not-fused ingroup and measured reciprocal activation and motivational primacy of the selves by having participants rate how well personal and collective self pronouns fit various statements. Results were inconsistent with fusion theory's identity-synergy hypothesis. Reciprocal activation of the selves was not observed because personal and collective self pronoun fit ratings did not covary positively. In contrast, personal and collective fit covaried negatively supporting the social-categorization framework's notion of functionally antagonistic selves. Unlike our preliminary findings, fusion was irrelevant for predicting the relationship between collective and personal selves. Because results are incongruent with previous tests of reciprocal activation of the selves, it is necessary to replicate these findings before any conclusions can be made with confidence.

Results were consistent, however, with the motivational primacy of the personal self. Personal fit was higher on average than collective fit, indicating personal self primacy. Furthermore, although statement valence was inconsequential for the main analyses, it revealed tendencies to self-enhance on the pronoun task; personal self pronouns were rated to fit better in positive, versus negative, statements. Unfortunately, this study was unable to differentiate relational self from collective self. Concurrent evaluation of all three selves is needed to test the effect of fusion on motivational

primacy of the entire self-system. Study 2 measures activation of the relational self separate from that of the personal and collective selves.

CHAPTER THREE
STUDY 2

Introduction

To understand the salience of the selves, one need only ask participants to describe themselves. Originally employed by Kuhn and McPartland (1954), participants' active selves can be revealed by how they finish twenty statements that begin with "I am." Different versions of this twenty-statement self-description task have been used throughout research as a methodology to investigate individual and collective self-concepts (e.g., Brewer & Gardner, 1996; Hartley, 1970; Trafimow, Triandis, & Goto, 1991). In particular, Gaertner and colleagues (1999; 2012) adapted the method to test the motivational primacy of the selves.

Gaertner, Sedikides and Graetz (1999, Study 4) instructed participants to list twenty statements that "generally describe you" in place of the "I am" prompts. The pronoun "you" applies similarly to both individual and collective selves, whereas "I" is more conducive to the individual self and, as such, might unfairly generate individual-self statements. Their revised instructions ensured that any evidence of individual self primacy was not an artifact of the method. After, participants read definitions of the individual and collective self, returned to their self-descriptions, and classified each as pertaining to either their individual or collective self. Overall, persons listed more individual self, than collective self, self-descriptions. Furthermore, participants' levels of individualism and collectivism did not influence this result (Gaertner et al., 1999). They found the individual self was the primary form of self-definition.

A similar method was used in Gaertner et al.'s (2012) Study 4 where participants listed twelve goals for their future, instead of self-descriptions, and classified whether each goal best represented their individual, relational or collective self. Again, results showed greatest activation of the individual self with the largest number of goals related to the individual self, followed by the relational self and then the collective self. Furthermore, this pattern was found regardless of whether participants had been primed with the individual, relational or collective self prior to the goal-listing task and regardless of participants' culture—collectivistic China or individualistic United States. The results affirmed the three-tiered hierarchy of the self-system, with the individual or personal self most primary.

The present investigation adopts a methodology similar to Gaertner and colleagues' (1999; 2012) and extends their work by examining whether fusion moderates the primacy of the three selves. Study 2 emulates the twenty-statement self-description task (Gaertner, et al., 1999). I modified the task's instructions to permit a test of the reciprocal activation hypothesis simultaneous to that of motivational primacy. Participants rated how representative their self-description statements were of their personal, relational and collective self, instead of selecting the *most* representative self of each. As a result, covariation among self ratings could be analyzed.

Reciprocal activation of the personal and collective selves is reflected in the covariation of the rated representativeness of the two selves across statements. In particular, in the fused ingroup condition (but not the not-fused condition) the rated representativeness of the personal and collective selves should positively covary (i.e., to

the extent a statement is deemed more or less representative of the collective self, so to should it be deemed representative of the personal self).

Motivational primacy of the selves is reflected in the average rated representativeness of the personal and collective selves across statements. If fusion moderates the primacy of the selves, in the fused ingroup condition the mean representativeness ratings of the personal and collective selves should not differ significantly, whereas in the not-fused ingroup condition the mean representativeness ratings of the personal self should be higher than that of the collective self. Furthermore, if the personal self reigns superior and motivational primacy of the selves is not moderated by fusion then the personal self should have higher representativeness ratings than do the other selves, in both the fused and not-fused ingroup conditions.

The representativeness ratings of the relational self might demonstrate effects similar to those of the collective self. The relational ties principle of identity fusion highlights how, for fused ingroups, fellow group members are viewed as unique individuals. As a result, fused persons are able to maintain interpersonal relationships with group members during activation of the collective self (Burhmester, et al., 2015; Swann, Buhrmester, et al., 2014). Identity fusion research has not tested whether identity-synergy generalizes to the relational self of fused persons. Fusion's relational ties principle suggests that activation of the relational self (via maintenance of connections to group members) is simultaneous with activation of the collective self (via shared group characteristics and goals). If this is the case, the representativeness ratings of the relational self should perform similarly to that of the collective self in terms of reciprocal activation and motivational primacy of the selves.

Participants and Procedures

Participants were 162 undergraduates (68 female, 91 male, 3 unspecified) at the University of Tennessee that participated online for partial credit in general psychology. Identical to Study 1, participants viewed the 4-image pictorial fusion scale and read its description. Again, participants were then randomly assigned to think of a group to which they belong that represented the left-most image (*not-fused ingroup condition*) or right-most image (*fused ingroup condition*). Once participants selected an ingroup, they described it to activate the collective self. Similar to Study 1, their ingroup name was visible at the top right-hand corner of the screen throughout the remainder of the study.

Next, participants completed a "Who are you?" task. Instructions had participants write 20 statements that "generally describe you" (see appendix J). The 20-statement procedure allows a measure of the salience of different selves (e.g. Brewer & Gardner, 1996; Gaertner et al., 1999). After writing 20 self-description statements, participants went back through them and indicated to what extent a given self-description statement was representative of their personal self, relational self and collective self on a scale of 1 (*not at all*) to 7 (*very much*). The three selves were defined first at the beginning of the task and truncated definitions were visible throughout the task.

Instructions defined the personal-self as "attributes and characteristics that are unique to you as a person. That is, the personal-self is composed of attributes or characteristics that differentiate you from all other people." The relational-self was defined as "attributes and characteristics that you share with relationship partners. That is, the relational-self consists of attributes and characteristics that make you similar to

persons with whom you share relationships." The collective-self was defined as "attributes and characteristics that you share with members of important groups to which you belong. That is, the collective-self is composed of attributes or characteristics that make you similar to other people in your groups" (Gaertner, et al., 1999).

Lastly, participants rated their verbal fusion (Gomez, Brooks, et al., 2011), and identification to the ingroup (Mael & Ashforth, 1992) on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale for the manipulation check. Participants were then debriefed and thanked.

Results

Thirty-six participants were excluded from analyses. Per an IRB mandate, participants were given a choice at the end of the study to either include or destroy their data. Fifteen participants self-selected to destroy their data (7 not-fused, 8 fused). An additional 15 participants had incomplete responses (e.g., they left the group, self-descriptions, or ratings blank; 9 not-fused, 6 fused), five participants did not follow directions (e.g., did the ingroup task incorrectly; 3 not-fused, 2 fused) and one participant said that all of their self-description statements were false (not-fused). Hence, analyses are based on 126 participants.

Manipulation Checks

I entered verbal fusion and identification scores into separate fused vs. not-fused ingroup ANOVAs. As planned, participants in the fused ingroup condition reported higher verbal fusion ($M = 5.64$, $SD = .97$) than participants in the not-fused ingroup

condition (M = 2.66, SD = 1.28), $F(1,124) = 217.13$, $p = .0001$. The fused ingroup condition also reported higher identification (M = 5.87, SD = 0.86) than the not-fused ingroup condition (M = 3.71, SD = 1.57), $F(1,124) = 91.45$, $p = .0001$. Importantly, a pair of within-subject ANCOVAs revealed that participants' fusion condition predicted verbal fusion when identification was controlled, $F(1,123) = 71.76$, $p = .0001$, but did not increase identification when verbal fusion was controlled, $F(1,123) = 0.01$, $p = .9230$.

Reciprocal Activation of the Selves

I created a multi-level data set so that each participant had 20 rows of data to represent their 20 self-description statements. Each row contained, for the given self-description, a personal self, relational self, and collective self representativeness rating. For ease of interpretation, self representativeness ratings will further be referred to as activation (e.g., collective self representativeness rating as collective activation). Participants were given an opportunity at the end of the study to indicate if any of their 20 self-description statements were not true of themselves to ensure only accurate data was included in analyzes. Some participants might have been unable to freely generate twenty self-descriptions and possibly fabricated statements to finish their list or might have falsely described themselves to appear more socially desirable. Twenty-five statements were dropped prior to analysis (approximately 1% of the total) because participants disclosed that they were untrue (12 from the fused and 13 from the not-fused ingroup conditions).

Relational and collective activation were person-centered to distinguish a participant's statement-specific activation from his or her average activation across

statements. Participants' mean relational and collective activation were controlled for in analyses (Raudenbush & Bryk, 2002; Wang & Maxwell, 2015). This data structure enabled me to test whether personal activation covaried with person-centered relational or collective activation across items as a consequence of fusion (i.e., reciprocal activation).

Collective Self Activation

To assess whether collective activation in particular covaried with personal activation for fused versus not fused ingroups, I regressed personal activation on an intercept, person-centered collective activation, fusion condition, person-level mean collective activation, and an interaction between person-centered collective activation and fusion condition in Proc Mixed of SAS 9.4. Model comparison tests suggested estimation of random effects for the intercept and person-centered collective activation.

Inconsistent with reciprocal activation of the selves, the Fusion x Person-centered Collective Activation interaction was not significant, $F(1, 2219) = 0.03$, $p = .8644$, indicating that the tendency for personal activation to positively vary with collective activation did not vary with fusion. Inconsistent as well with functional antagonism of the selves, there was no main effect of person-centered collective activation, $t(120) = 0.46$, $p = .6458$. That is, overall collective activation did not covary with personal activation. If the social-categorization framework were supported, there would have been an antagonistic relationship between personal and collective activation (regardless of fusion condition) such that as one self activation increased the other decreased.

Relational Self Activation

To assess whether relational activation covaried with personal activation for fused versus not fused ingroups, I regressed personal activation on an intercept, person-centered relational activation, fusion condition, person-level mean relational activation, and an interaction between person-centered relational activation and fusion condition. Model comparison tests suggested the estimation of random effects for the intercept and person-centered relational activation.

Again, inconsistent with the reciprocal activation of the selves, the Fusion x Person-centered Relational Activation interaction was not significant, $F(1, 2221) = 0.08$, $p = .7759$, indicating that the tendency for personal activation to positively vary with relational activation did not vary with fusion. Also, inconsistent with functional antagonism of the selves, no main effect of person-centered relational activation emerged, $t(119) = 0.38$, $p = .7070$. That is, an item's relational activation did not covary with its personal activation. The social-categorization framework applies functional antagonism to all self types, therefore it would have expected a negative covariation between relational and personal activation.

Furthermore, regressing personal self activation on a combination of the predictors from the relational and collective self activation models did not change the results.

Measurement Issues

One reason why these data do not find evidence of reciprocal activation (or of functional antagonism) is the relatively limited variability and exceedingly high representativeness ratings of the personal self. Indeed, for 57% and 63% of statements,

participants indicated a 7 (on a 1 to 7 scale) for personal self activation in the not-fused and fused ingroup conditions, respectively. Such high responses led to less variability of personal self activation, possibly masking movement caused by relational or collective self activation and contributing to null findings.

To test this possibility, I calculated the mean standard deviation across participants for each type of self activation. A repeated measures ANOVA (with box-epsilon adjustment to correct for sphericity) revealed that the mean standard deviations were significantly different across self activation types, $F(2,248) = 62.36$, $p = .0001$. The standard deviation of personal activation ($M = 1.03$) was significantly lower than the standard deviation of collective activation ($M = 1.60$), $F(1,124) = 85.14$, $p = .0001$, and the standard deviation of relational activation ($M = 1.56$), $F(1,124) = 65.90$, $p = .0001$). There was no difference between the standard deviations of collective and relational activation, $F(1,124) = 0.92$, $p = 0.3394$.

Also, examination of the standard deviations for fused and not-fused ingroup conditions in particular revealed identical patterns. For both ingroups, the standard deviation of personal activation differed from that of collective and relational activation, but the latter did not differ from one another. Overall, the negatively skewed nature of the distribution of personal self activation and its lack of variability likely inhibited the ability to successfully decipher covariance trends. The pattern of such exceedingly high personal self ratings implies the presence of the motivational primacy of the personal self, which is tested directly in the next session.

Motivational Primacy of the Selves

To account for dependencies in the data, I created a multi-level data set with *activation* (activation averaged across the 20 self-description statements) as a within-subject variable and *self-type* as a categorical variable that classified whether the activation was of the personal, relational or collective self. This data structure (three rows per participant; one for each self type) enabled me to test whether mean activation scores differed for personal, relational and collective selves (i.e., motivational primacy).

I regressed activation on an intercept, self-type, fusion condition, and an interaction between self-type and fusion condition. Model comparison tests suggested the estimation of random effects for the intercept. Replicating Study 1, the analysis revealed no interaction between self-type and fusion condition, $F(2,248) = 0.21$, $p = .8090$. That is, fusion did not moderate the motivational primacy of the selves. Instead, a main effect of self-type emerged, $F(2,248) = 136.99$, $p = .0001$. Mean personal activation ($M = 6.09$, $SD = 0.84$) was higher than mean relational activation ($M = 4.61$, $SD = 1.30$; $B = 1.49$, $t(248) = 13.83$, $p = .0001$) and mean collective activation ($M = 4.50$, $SD = 1.16$; $B = 1.59$, $t(248) = 14.79$, $p = .0001$) for both fused and not-fused ingroups (see Figure 3.1). Additionally, no difference was found between mean relational and mean collective activation ($B = 0.10$, $t(248) = 0.96$, $p = .3377$). An undeniable dominance of the personal self emerged, however separation of the lower two-tiers of the self's motivational hierarchy was absent. Mean relational self activation was not significantly greater than that of collective self activation.

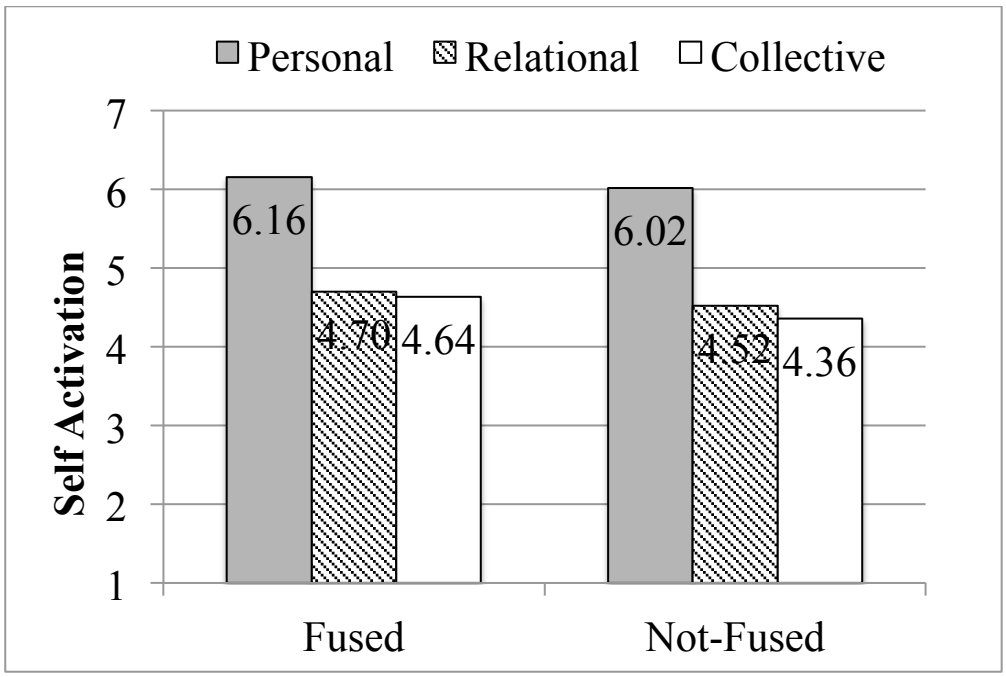


Figure 3.1. Fusion and mean self activation ratings for the personal, relational and collective selves

Discussion

I activated a fused or not-fused ingroup and measured reciprocal activation and motivational primacy of the selves by having participants generate self-descriptions and rate how representative each is of their personal, relational, and collective self. Replicating Study 1, results were inconsistent with fusion theory's identity-synergy principle. Neither relational nor collective activation interacted with fusion condition to predict personal activation, effectively refuting reciprocal activation of the selves, including the first empirical test of relational self identity-synergy. The fusion manipulation did not differentially predict movement between either relational or collective activation and personal activation. As noted prior, a possible reason for these

null findings might be the limited variation of personal activation. Exceedingly high scores of personal self activation caused an inadequate range of responses possibly masking hypothesized effects. The occurrence of this limitation in itself, however, is further support for the motivational primacy of the personal self.

No main effect of collective or relational activation emerged either. The social-categorization framework would have predicted significant negative covariation between personal and collective or relational activation, regardless of fusion condition. Overall, results did not replicate functional antagonism of the selves from Study 1, nor did they reveal reciprocal activation of the selves. Again, the lack of evidence for both identity-fusion theory and the social-categorization framework could be due to the nature of the task leading to overwhelming personal activation regardless of condition.

A pattern consistent with the motivational primacy of the personal self emerged, replicating Study 1. Personal activation was higher on average than both relational and collective activation. Primacy of the personal self was maintained, regardless of whether persons were in the fused or not-fused ingroup condition. A separation of the lower two-tiers of the motivational self-hierarchy—the relational and collective selves—was not shown. The two selves had similar average activation across the 20-statement task.

A weakness of Studies 1 and 2 is that I anticipated differentiated movement of the selves within task items. Self activation might not have been as reactive as I had hoped, with shifts, if any, occurring minimally in the individualized task statements. Therefore, the methodologies I chose to capture covariation of the selves were potentially unsuitable. Study 3 further tests reciprocal activation of the selves with a different hopefully better methodology—the Lexical Decision Task (LDT; Fischler, 1977; Meyer

& Schvaneveldt, 1971). The LDT uses semantic priming to measure automatic activation of concepts, in this case, the personal self. An advantage of using implicit measures is that they evade the influence of controlled thought processes, which includes efforts to respond in a particular or favorable way. Instead of tracking changes in self-reported scores that approximated activation of the different selves, Study 3's methodology collects reaction time responses that correspond closely to real time activation of the personal self. Such closeness to the onset of self activation is an improvement over the previous studies' methods.

The first two studies had consistent findings on motivational primacy of the selves. As a result, Study 3 focuses exclusively on testing reciprocal activation of the selves. In contrast to motivational primacy, the first two studies revealed conflicting findings for reciprocal activation. Study 1 found evidence of the social-categorization framework's functional antagonism and Study 2 revealed no patterns—neither that of functional antagonism nor of identity-synergy. Study 3 helps to clarify these inconsistent findings by further examining reciprocal activation of the personal and collective selves with a semantic priming task.

CHAPTER FOUR
STUDY 3

Introduction

In Study 3, participants listed five traits that uniquely described them (i.e., self-words), thought of a fused or not-fused ingroup, and completed a lexical decision task (LDT; Fischler, 1977; Meyer & Schvaneveldt, 1971). The LDT is a widely used implicit measure that evaluates cognitive associations between a particular prime and target concept using reaction time (e.g., Bessenoff & Sherman, 2000; Neely, Keefe & Ross, 1989; Wittenbrink, Judd & Park, 1997; 2001). During the task, primes are intermittently displayed prior to the target concept, and if the two share significant cognitive overlap, the prime facilitates activation and identification of the target (i.e., faster reaction times).

The LDT in Study 3 measured reaction times of three different word-type targets: participant-generated self-words, neutral-words, and non-words. Participants' ingroup name, which was either a fused or not-fused ingroup, was or was not presented as a supraliminal prime of the collective self prior to the words. Reciprocal activation of the selves was reflected in the speed at which participants responded to their self-words (i.e., personal self) following a fused ingroup prime (i.e., collective self). Fusion theory's identity-synergy principle predicts that persons fused (but not not-fused) to their ingroup should be faster to identify self-words than neutral-words when primed versus not primed.

Every participant's LDT was personalized to best capture his or her particular personal and collective self. Participants' listed idiosyncratic traits or characteristics that

they felt best represented them as a unique individual. Then, these self-words were inserted in the task as targets to represent their personal self. Further, the collective self prime was a fused (or not-fused) ingroup specific to each participant. Using customized primes and targets in the LDT helped create a relatively nuanced test of identity-synergy.

On a repetitive task such as the LDT, too many trials can lead to participant fatigue and disengagement. To limit the study's overall number of trials, I only tested the reciprocal activation of the personal and collective self and excluded the relational self. In the future hopefully more studies will investigate the role of the relational self in fusion's identity-synergy.

Participants and Procedures

A sample of 312 undergraduate students (137 males, 174 females, 1 unspecified) enrolled in general psychology at the University of Tennessee participated for partial class credit. Participants completed the study on a computer in a laboratory room. Once informed consent was obtained, participants listed five traits that described them as a unique individual. Then, participants were re-presented these self-words and given the chance to re-write each if they did not follow the original directions to use all lowercase letters and a single word.

After the self-word task, participants were randomly assigned to a prompt, identical to that used in Studies 1 and 2 that had them think of an ingroup to which they are fused or not. They wrote the ingroup name, described it, and created a single-word label or acronym that best represented the ingroup. Participants then completed verbal

fusion and identification scales in regards to the ingroup (Gomez, Brooks, et al., 2011; Mael & Ashforth, 1992).

After self-word generation and the fusion manipulation, participants completed the LDT (Fischler, 1977; Meyer & Schvaneveldt, 1971). The LDT assessed latency to respond to three different word-types: self-words provided prior, neutral-words, and non-words. The latter two word-types were identical across participant and condition, whereas self-words were unique across participant and condition. The neutral-words were random everyday words (e.g., scratch, ocean, gross, choice, tearful). The non-words were letter-strings that had compositions similar to those of actual words (e.g., rourve, maunge, clolched). Due to the unknown nature of each participant's self-words, I was unable to have non-words that closely resembled the self-words as preferred for priming tasks (Wentura & Degner, 2010). To keep consistency, non-words did not closely resemble neutral-words either. Each word-type was preceded by a supraliminal prime of the participant's ingroup label (provided in the fusion manipulation) or no prime (a blank screen).

Instructions explained that participants would be presented strings of letters and that some letter-strings would form a word and other letter-strings would not. Their task was to quickly and accurately distinguish words from non-words. To do this, they were to press the green "YES" key (a sticker on the "z" key) if the letter-string formed a word, or the red "NO" key (a sticker on the symmetrical "/" key) if the letter-string did not form a word. To familiarize participants with the task, they completed a block of 16 randomized practice trials: 8 words (4 with ingroup prime) and 8 non-words (4 with ingroup prime).

Participants then completed the critical trials of the LDT. The start of each trial was indicated by a plus sign "+" in the center of the screen for 1012 milliseconds (ms). After, their ingroup label or a blank screen appeared for 165 ms (prime, no prime), immediately followed by a letter-string (self-word, neutral-word, non-word). The letter-string remained on the screen until the participant responded with a judgment (yes or no). Direct feedback on response accuracy was not given. If participants responded faster than 50 ms or slower than 3000 ms a message was presented after the trial informing them they responded too fast or too slow. Participants were told that on some trials the name of their group would appear before the letter-string, but to not worry about it.

The trials were divided such that participants completed four blocks of 40 randomized trials, with a 30 second break halfway through to rest their eyes. In one block, the 20 letter-strings (10 non-words and 10 words [5 self-words, 5 neutral-words]) appeared twice, once with the ingroup prime and once without to make 40 trials. Across the four blocks, data was collected for 160 trials so that each self-word and neutral-word had 4 reaction times with the ingroup prime and 4 reaction times without the ingroup prime.

If fusion involves a reciprocal activation of the personal and collective self, then priming the collective self should activate the personal self. Consequently, persons should be faster to identify self-words than neutral-words when primed, versus not primed, with a fused ingroup. Reaction times for identifying neutral-words (with and without the ingroup prime) serve as controls.

After the LDT, participants' rated in randomized order the five neutral-words and five self-words on a 7-point Likert scale of how descriptive they are of them as a unique

individual (1= *not very descriptive*, 7= *very descriptive*) and how negative (1) to positive (7) they were. Such measures permitted me to control for the possible confounds of word valence and self overlap with the neutral-words. Valence of the letter-string targets is an important consideration because research finds people respond slower to negative versus positive stimuli (e.g., Estes & Adelman, 2008; Pratto & John, 1991; Wentura, Rothermund, & Bak, 2000). Specifically, on lexical decision tasks, automatic vigilance leads to negative stimuli eliciting slower RT judgments. Precautions to account for valence effects is critical for this research paradigm because of the high probability of participants' self-words being overly positive compared to the neutral-words.

At the end of the study, participants were given an opportunity to indicate if any of their self-words were not true of themselves. Some participants might have falsely described themselves to appear more favorable, therefore, including this question helps identify inaccurate data. Lastly, participants were debriefed and thanked.

Results

Twenty-seven participants were excluded from analyzes. Per an IRB mandate, participants were given a choice at the end of the study to either include or destroy their data. Four participants self-selected to destroy their data (2 not-fused, 2 fused). Twelve participants did not follow directions (8 not-fused, 4 fused; 8 wrote an incorrect group label for the LDT task, 3 wrote phrases instead of words for their traits; 1 hit the same key [yes] for the vast majority of the trials), 4 participants expressed confusion about the study (2 not-fused, 2 fused), 3 participants had incomplete responses due to technical difficulties (3 fused), and one participant was dyslexic (not-fused). In addition, three

participants were removed because they were in the not-fused ingroup condition and had a verbal fusion score above 5 (on a 1-7 scale) or were in the fused ingroup condition and had a verbal fusion score below 3.

The LDT had four blocks of 40 trials each with a trial containing a discrete response (word: yes or no) and a reaction time (RT) of this judgment. Each participant completed 160 trials, thus I structured the data set so that each participant had 160 rows of data. Then, all non-word trials were removed prior to analysis. The non-word trials are vital for administration of the LDT paradigm because an equal number of trials need to result in yes and no judgments. Therefore, the non-words make-up half of the task, despite having no theoretical relevance for the research question. Participants were also given an opportunity at the end of the study to indicate if any of their five self-words were not true. Out of the 285 participants with 1,420 self-words, five self-words (0.35%) were self-selected as fake. I eliminated the 40 trials of these five self-words prior to analysis as well. Due to the multi-level structure of the data, removing the non-word and false-self-word trials did not alter the number of participants; it merely removed particular lines of data within a participant.

Correct vs. Incorrect Responses

The extent to which participants misclassified letter-strings (made judgments of words as non-words) was evaluated. Across the 80 trials relevant to self and neutral-words, 97.2% of participants were correct at least 80% of the time and 90.1% of participants were correct at least 90% of the time. Instead of averaging performance across the neutral and self-words for a minimum performance threshold (possibly

obscuring poor performance on one word-type due to superior performance on the other), I set an inclusion threshold of at least 80% correct for each word-type. The eight participants that had less than 80% correct on both the self-word and neutral-word trials were dropped. As a result, I retained participants (n= 277) that made few errors and undoubtedly attended to the task. Out of the remaining 22,521 trials total, the 659 trials that had incorrect judgments were also discarded (around 2.91%).

Reaction Time

I conducted univariate analyses and distribution plots of the RT variable in its raw and transformed (natural log and square root) forms. The distribution of RT data that approximated a normal distribution closest was in its raw form (based on Q-Q plots, kurtosis, and skewness values). The range of RT was from 76 ms to 3,722 ms. I used a formula recommended by Tukey (1977) to identify any RT outliers. In other words, to identify trials in which participants responded unusually slow (possibly indicating controlled thinking processes) or unusually fast (possibly indicating they did not do the task), I subtracted three times the interquartile range (IQR = 151 ms) from the median RT (Med = 545 ms) to get a lower end RT outlier threshold (92 ms) and added it to the median RT to get a higher end RT outlier threshold (998 ms; Tukey, 1977). The outlier trials that fell outside of the high and low thresholds made up 3.06% of the data and were all removed prior to analysis. Only 4 trials were lost from the low threshold, most outlier trials fell beyond the high threshold (665 trials).

Main Analysis

Manipulation Checks

I entered verbal fusion and identification scores into separate fused versus not-fused ingroup ANOVAs. As planned, participants in the fused ingroup condition reported higher verbal fusion ($M = 5.82$, $SD = 0.80$) than participants in the not-fused ingroup condition ($M = 2.48$, $SD = 1.12$), $F(1, 283) = 836.26$, $p = .0001$. The fused ingroup condition also reported higher identification ($M = 5.82$, $SD = 0.81$) than the not-fused ingroup condition ($M = 3.34$, $SD = 1.35$), $F(1,283) = 353.66$, $p = .0001$. Importantly, a pair of within-subject ANCOVAs revealed that participants' fusion condition predicted verbal fusion when identification was controlled, $F(1,282) = 213.78$, $p = .0001$, but did not predict identification when verbal fusion was controlled, $F(1,282) = 0.01$, $p = .9232$.

Reciprocal Activation of the Selves

To account for the nested structure of the data, I used multi-level regression in Proc Mixed of SAS 9.4. Model comparison tests were conducted (with restricted maximum likelihood and likelihood-ratio tests) to determine the appropriate structures of random effects to estimate. To test reciprocal activation of the selves, I regressed participants' RTs on to fusion condition (fused ingroup, not-fused ingroup), word-type (neutral, self), prime (yes, no) and the factorial crossing of these three variables. Model comparison tests suggested the estimation of random effects for the intercept and prime.

The analysis did not reveal a significant Fusion Condition x Word-type x Prime interaction, $F(1, 21{,}000) = 0.57$, $p = .4503$, indicating that RT was not differentially predicted whether a prime occurred or not, of a fused ingroup or not, for self versus neutral-words. In fact, none of the interactions between predictors were significant.

However, there was a main effect for prime, $B = 8.50$, $t(280) = 2.58$, $p = .0001$, such that RT was faster when a prime was shown ($M = 560.97$, $SD = 120.68$) versus not ($M = 571.47$, $SD = 124.48$) regardless of whether it was of a fused or not-fused ingroup or whether it was prior to a self or neutral-word.

Furthermore, a main effect of word-type was also revealed, $B = 11.41$, $t(21{,}000) = 3.83$, $p = .0001$, such that RT was faster when a word was a self ($M = 561.21$, $SD = 119.56$) compared to a neutral-word ($M = 571.33$, $SD = 125.64$) regardless of whether it was primed, and if so whether it was a fused or not-fused ingroup prime. That is, participants identified self-words as words faster than they identified neutral-words as words. Words that directly characterized one's personal self facilitated quicker responses. Such a result could be interpreted as a further testament to the motivational clout of the personal self.

Additional analyses were run controlling for valence of the word-type, length of the word, trial order, and conclusions did not change. Results reported are without these variables in the model for purposes of simplicity.

Discussion

In Study 3, a fused (or not-fused) ingroup was primed (or not) and reaction times to identify self-words and neutral-words were measured. That is, the collective self was activated and subsequent activation of the personal self and a control were measured. Inconsistent with fusion theory's identity-synergy principle, activating the collective self of a fused ingroup did not increase reciprocal activation of the personal self. Furthermore, inconsistent with the social-categorization framework's functional antagonism principle,

activating a collective self did not decrease activation of the personal self. In fact, when primed, participants were faster in general to identify words, self and neutral. Therefore, Study 3 does not support either conceptualization of the self, evidenced by no significant changes in self-word reaction times following fused or not-fused ingroup primes. The conclusions match those of Study 2, which also had null effects, and contradict that of Study 1, which evidenced functionally antagonistic selves.

The use of a tailored LDT was advantageous for capturing participants' true conceptualization of their personal and collective selves. The method, however, also introduced discrepancies across observations typically not present in semantic priming measures. Although greater validity of the selves was accomplished, the method also introduced between-participant variability because everyone's self-words had different lengths, valences, and degrees of overlap with their ingroup. Despite controlling for the distinct characteristics of participants' self-words in analyses, it might not have been enough to prevent such variability from masking hypothesized effects.

Furthermore, reaction time measures are fastidious in that differences are typically within a range of milliseconds. As such, I caution interpretation of these null effects as an absence of reciprocal activation, but instead suggest they are a result of the sizeable amount of noise my particular experimental design added. Effects on priming measures tend to be more difficult to detect (i.e., have small effect sizes). Additional noise, to the degree that my personalization permitted, easily could have obstructed the priming effects in this study. Furthermore, within-subject designs are preferable for semantic priming tasks due to the amount of variability that exists between participants' reaction times. Revising the current methodology so that fusion condition is within-

subject, however, would have introduced different issues such as potential bleeding of the fused and not-fused groups into each other.

Additionally, post hoc I realized that using words that so strongly represented one's personal self in the LDT might have led to exceedingly fast word judgment reaction times. Consequently, making it difficult to detect any effect of the fused ingroup prime. As observed in Study 2, the primacy of the personal self can be so dominant that responses approach their limits. Reaction times for self-words might have encountered a floor effect in that the personal self was so strongly activated by the self-words that the ingroup prime could not facilitate a faster reaction time, or if it did, it was too small to be detected in the LDT paradigm.

CHAPTER FIVE

OVERALL DISCUSSION

Identity fusion theory introduces a conceptualization of self that challenges the social-categorization framework's view that the activation, and therefore influence, of personal and collective selves are antagonistic such that the activation of one entails inhibiting the other. Identity-synergy, proposed by fusion theory, instead views the personal and collective selves as synergistic such that the activation of one entails a reciprocal activation of the other. I reasoned that for fused ingroups activating the collective self would evidence reciprocal activation of the personal self as a consequence of identity-synergy. My previous research yielded evidence consistent with fusion theory and reciprocal activation of the selves. Fusion promoted willingness to sacrifice the self for the group and a reciprocal willingness to sacrifice the group for the self (Heger & Gaertner, in press).

The present research systematically tested identity fusion theory and the social-categorization framework against one another by investigating reciprocal activation of the selves in three studies. Participants viewed the pictorial fusion scale and were randomly assigned to think of a group to which they belong that represented either a fused or not-fused ingroup. Afterwards, activation of the selves was measured by a) ratings of how well personal and collective self pronouns fit 20 statements on the LIF, b) ratings of how representative the personal, relational and collective selves were of 20 self-description statements participants listed, and c) how fast self-words were identified compared to neutral-words after a fused ingroup prime in a LDT. These data indicated that neither

covariation of activation of the personal and collective selves (Study 1 and 2), nor semantic priming of the personal self with the collective self (Study 3), supported identity-synergy or functional antagonism of the selves consistently. Thus, the present research contradicts previous research findings that evidenced effects of reciprocal activation in support of fusion theory's identity-synergy.

In addition to testing reciprocal activation of the selves, the present research addressed a second empirical question on motivational primacy of the selves. A three-tiered hierarchy of the self-system exists in which the personal self is motivationally primary, meaning it is the most influential and vital to the self-concept (Gaertner et al., 1999; 2002; 2012). The relational self trails the personal self, and behind that is the collective self. For fused persons, however, this motivational hierarchy might be manifested differently. The three-tiers might uniquely collapse for fused persons because their personal and collective selves are unified and they maintain relational ties to group members. Namely, all three selves could be equivalently active and motivationally potent.

Consistent across the two studies that tested motivational primacy of the selves, mean activation of the personal self was greater than mean activation of the collective self, regardless of fusion condition. That is, the personal self remained primary for groups to which persons were fused. Study 2 introduced the relational self and its primacy did not vary from that of the collective self or across fusion conditions. Current work replicates the literature on the motivational primacy of the personal self (Gaertner, et al., 2012). The primacy of the personal self was so prominent, in fact, that it might have obstructed the tests of the reciprocal activation of the selves in Studies 2 and 3.

Does how you Measure Self Activation Matter?

Assessment of self activation outcomes in fusion literature predominantly entails sacrificial behaviors and willingness to endorse extreme actions on behalf of the group (Swann & Buhrmester, 2015; Whitehouse, McQuinn, Buhrmester, & Swann, 2014). The moral decision-making process for fused persons to make an extreme sacrifice is emotional, intuitive, and deontological. Their decision is not based on logical reasoning or utilitarian considerations, but instead on an automatic motivation to help the group (Fredman et al., 2015; Swann, Gomez, et al., 2014). Furthermore, manipulations of self activation typically involve a threat to the self. Examples include a trolley dilemma, ostracism paradigm, willingness-to-fight-and-die scale, terrorist bombing, self-verification challenge, etc. (e.g., Buhrmester, et al., 2015; Gómez, Brooks, et al., 2011; Gómez, Morales, et al., 2011; Swann et al., 2009; Swann, Gómez, et al., 2014). In general, a great deal of motivation and emotion is engendered in tests of identity-synergy in fusion literature.

In contrast, the present research takes a considerably different approach to testing identity-synergy. Self activation was assessed using basic concept activation measures, absent of contextual motives, emotions or goal-seeking behaviors. Across the three studies, well-validated measures of self-focus (LIF; Wegner & Giuliano, 1980), self-salience (twenty-statements; Gaertner et al., 1999), and mental association of the selves (LDT; Meyer & Schvaneveldt, 1971) revealed no evidence of identity-synergy for fused individuals. These self activation measures did not incite any impending threat to the personal or collective selves nor did they explicitly ask for endorsement of any cause or

behavior in support of either self. I had believed the use of indirect or implicit measures would be advantageous for capturing fusion effects because their sacrifice decisions are characterized as automatic and instinctual. In addition, these measures evade social-desirability concerns—an issue encountered in my previous research on reciprocal activation of the selves.

Are the different measures of self activation behind the present research's discrepant findings? Fusion research uses reliable paradigms of self-threat and extreme pro-group sacrifice to find identity-synergy effects (specifically, the personal self bolstering the collective self). My preliminary work also used these paradigms and found identity-synergy effects (specifically reciprocal activation of the collective self bolstering the personal self). In contrast, the current measures evaluated simple mental accessibility of the selves and failed to reveal any identity-synergy effects.

There are two possible explanations for these results. The first is that synergistic effects of fusion occur (or are only perceivable) in heightened states of self-threat or when motivated, and do not manifest (or are not detectable) at a level of basic cognitive salience. If accurate, fusion theory would need to be revised to account for why this is the case. The second is that the indirect measures failed to detect effects. Study 3 had large variability between-participants on the LDT that might have masked differences in reaction time data. Studies 1 and 2 examined the covariation of self activation scores. The effect depended on self ratings simultaneously shifting together for each unique task item. The level of sensitivity and synchrony expected of the concurrently active selves might have been unreasonable. Future research should also try using priming and mental

accessibility measures to further identify whether this pattern of differentiated fusion effects is indeed a result of how self activation was operationalized.

Implications for Fusion Theory's Identity-synergy Principle

The claim made by Swann and colleagues' principle of identity-synergy in which "both [personal and collective] identities can be highly salient at the same time" (Fredman, et al., 2015, p. 470) seems insufficiently supported in comparison to the enormity of such an assertion. The present research attempted, but ultimately fell short of helping remedy some issues encountered in support of the claim.

Identity fusion as a construct is still infantile and as such a lack of methodological diversity is reasonably expected. However, because identity-synergy challenges the social-categorization framework, a robust program of research, it is reasonable to demand substantial and generalizable evidence. While there is considerable evidence of identity-synergy, as reviewed in the introduction, almost all investigations fall under a narrow scope of the token topic of fusion—extreme acts for the collective. The uniformity and specificity of fusion literature means empirical gaps exist in the form of evidence beyond this application and of novel methodologies.

To contribute to a broader understanding of the identity-synergy principle, the current studies tested identity-synergy using a more general cognitive salience perspective of reciprocal activation of the selves. What is worrisome is that with these different methods a synergistic relationship between the selves was not evidenced. Does this indicate we have reason to be concerned about synergy effects replicating outside the realm of measures of extreme acts? Potentially. What is needed is for social cognition

researchers to help investigate identity-synergy and unveil the mechanisms behind fused selves. A broader understanding of the cognitive and associative underpinnings of the fused selves would help to fill a sizeable gap in the literature.

Why did I Find a Pattern of Functional Antagonism?

The only significant relationship found across all tests of reciprocal activation was evidence for functional antagonism in Study 1. A negative relationship between personal and collective self pronoun fit ratings was revealed. Besides a lack of replication, a caveat to interpreting this effect as meaningful is a weakness of the task methodology. In the classic LIF procedure, participants pick the pronoun that best fits each sentence. It is an intuitive task reminiscent of an elementary school grammar worksheet. In contrast, I instructed participants to rate how well two pronouns fit in each sentence. I fear that participants had a natural tendency to rate the two pronouns in opposing directions (e.g., if they rated one pronoun as more fitting, they defaulted to rating the other pronoun as less fitting).

A heuristic learned throughout school is there is only one right answer. Because both pronoun options were displayed simultaneously and rated on the same screen, it is feasible that despite the orthogonal nature of the task, participants viewed the options as mutually exclusive (e.g., right and wrong). In fact, if not read carefully part of the instructions appeared to suggest this is the case. “Each sentence presents two pronouns in parentheses (I, we) that are grammatically appropriate and make sense in each sentence. *In some sentences, however, one of the pronouns might feel like it fits better and in other sentences the other pronoun might feel like it fits better*.” (see Appendix I for entire

passage). Furthermore, seven participants were dropped from the analysis because they only rated one of the two pronouns for each sentence. This perhaps is initial evidence of the tendency for persons to intuitively perceive the modified LIF task as antagonistic. Overall, rating both pronouns on the LIF to allow tests of covariation itself might have created the covariation. Methodological weaknesses aside, support for functional antagonism did not replicate in Studies 2 or 3.

Implications for Motivational Primacy of the Personal Self

Data consistently revealed that fused people were not immune to the powerful motives of the personal self. We can confidently conclude from the current research that fusion does not moderate the motivational hierarchy of the self-system. In fact, the lack of support for fusion theory's reciprocal activation of the selves was possibly a product of the motivational primacy of the personal self.

Throughout the present research, whether effects were significant or not, explanations seemed to circle back to personal self primacy. Main analyses of motivational primacy were significant, finding that the personal self had higher mean activation than relational and collective selves. Further, non-hypothesis-relevant effects that were significant revealed participants' actively enhancing their personal self. For example, participants in Study 1 self-enhanced on the pronoun task by rating personal self pronouns as better fitting in positive statements than negative statements, and in Study 3 a main effect of word-type revealed that participants identified self-words faster than neutral words. Finally, certain non-significant effects of reciprocal activation likely resulted from methodological challenges encountered as a result of the overpowering

primacy of the personal self. Participants in Study 2 rated self-description statements as overwhelmingly representative of their personal self, to the extent that there was a lack of sufficient variability in the data to test covariation trends. Study 3 included traits and characteristics of the personal self in the LDT and these words were possibly so salient that the fused and not-fused primes were unable to sufficiently influence reaction times. At first glance, a lack of significant effects for reciprocal activation of the selves is disparaging. The null effects, however, still manage to make meaningful contributions to understanding of the self-concept in light of personal self primacy.

Replicating Gaetner et al. (2009), the two studies ruled out the contextual primacy hypothesis or the idea that the primacy of the self fluctuates relative to situational factors that deem a particular self temporarily active. In fact self-categorization theory and its functional antagonism principle align with this perspective. In both studies, the collective self was contextually activated prior to and during the tasks, yet such procedures did not produce primacy of the collective self. If anything, the specific methodology of these studies created a test more favorable to the collective self, yet both fused and not fused individuals' still evidenced motivationally primary personal selves.

Personal self primacy is so pervasive that it is pancultural, which means it supersedes cultural influences (Gaertner et al., 1999; 2012). People who live in collectivistic cultures, have interdependent self-construals, and value connectedness and group harmony still demonstrate the three-tiered hierarchy with the personal self at the top. Fusion is similar to collectivistic culture in that it places great emphasis on the collective self and, as the irrevocability principle suggests, is contextually stable and

chronic. Fusion, like culture, revealed that irrespective of the strength and pervasiveness of the collective self the personal self maintained primacy.

Methodological Limitations

It would be premature to dismiss these studies' findings due to their null effects of reciprocal activation of the selves. In fact, the lack of reciprocal activation effects in Studies 2 and 3, are potentially explained by the motivational primacy of the personal self. Consideration of particular methodological complications helps explain inconsistencies between current studies and previous research.

I previously addressed in detail a major limitation of Study 1. Changing the LIF's instructions unintentionally altered the task so that participants tended to rate personal and collective self pronouns in an inverse manner. An additional weakness is that out of the three self activation measures used, the LIF was the most impersonal. *I, me* and *my* were used to represent the personal self, whereas Studies 2 and 3 used idiosyncratic characteristics unique to participants' personal self.

Study 2 had exorbitantly high personal self ratings, such that over 50% of statements in both the fused and not fused conditions had personal self representativeness ratings of 7 on a seven-point Likert scale. The issue with these high ratings was that they lacked variability, decreasing the ability to predict patterns and likely identify effects of reciprocal activation of the selves. Future fusion research that measures self activation will need to consider the prospect that the motivationally primary personal self might interfere.

The LDT task in Study 3 had methodological advantages that were also disadvantages. The task was personalized to increase the validity of each participant's selves. Unfortunately, this also introduced a great deal of between-participant variability because participants' unique self-words had different characteristics. I caution interpretation of Study 3's null effects as the absence of reciprocal activation, but instead suggest a sizeable amount of noise, caused by the experimental design, might have masked the hypothesized effect. If replicated, the aspects of customization should be scaled back to create a more uniformed priming experience.

In Summary

Overall, no evidence for identity-synergy was found across the 3 studies. Unexpected methodological challenges, some in fact due to the primacy of the personal self, provide probable explanations of these null effects. Study 1 evidenced a pattern of functionally antagonist selves, however, the tendency to rate the self pronouns inversely on the task might be responsible for this unreplicated effect. Studies 1 and 2 tested and evidenced motivational primacy of the personal self. Fusion did not moderate the motivational hierarchy of the self-system. Therefore, regardless of whether personal and collective selves were fused, the personal self was motivationally primary.

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APPENDIX

Appendix A: Verbal Fusion Scale

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

Appendix B: Group Identification Scale

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

Appendix C: Self-Sacrifice Country Scale

1. I would fight if someone physically threatened another citizen of my country.
2. I would fight if someone insults or makes fun of my country as a whole.
3. I would help others get revenge on someone who insulted my country.
4. Hurting other people is acceptable if it means protecting my country.
5. I'd do anything to protect my country.
6. I would sacrifice my life if it saved the life of another citizen of my country.
7. I would sacrifice my life if it gave my country status or monetary reward.

Appendix D: Group-Sacrifice Country Scale

1. If someone physically threatened me, I would be glad for another citizen of my country to fight on my behalf.
2. If someone insults me or makes fun of me, I would be glad for another citizen of my country to fight on my behalf.
3. If someone insulted me, I would be glad for another citizen of my country to take revenge on my behalf.
4. If other citizens of my country get hurt, this is acceptable if it means protecting me.
5. Other citizens of my country should do anything to protect me.
6. I would sacrifice my country if it saved my life.
7. I would sacrifice my country if it gave me status or monetary reward.

Appendix E: Six Group Prompt

You are a member of many social groups. In each of the following 6 spaces, write the name of a group to which you belong. If you belong to fewer than 6 groups, then list the groups to which you belong and leave the remaining spaces blank. Examples of some groups you might belong to are volunteer groups, campus organizations, sports or intramural teams, employment organizations, music groups, Greek life organizations, friend groups, class project groups, committees, clubs and additional special interest groups.

1._____

2._____

3._____

4._____

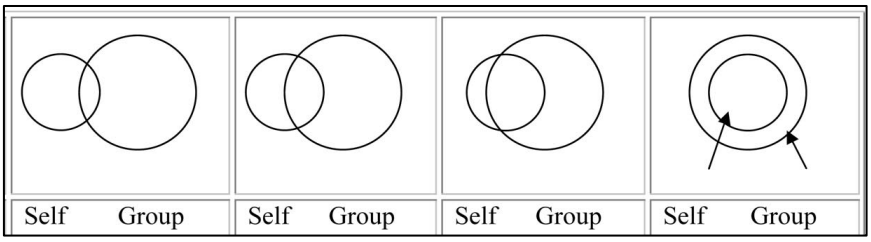
5._____

6._____

Appendix F: Explanation of Pictorial Fusion Measure

You belong to many social groups. To some of those groups you feel strongly connected and to other groups you feel less connected.

Below are four pictures that represent different feelings of connection that you might have with the groups to which you belong. Within each picture the small circle represents you and the large circle represents a particular group to which you belong.



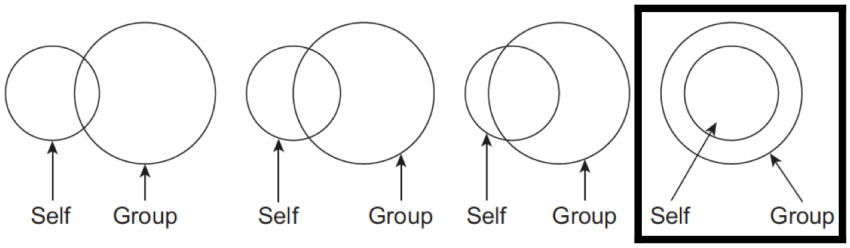
Moving across the pictures from left to right represents an increasing feeling of connection with the group.

The left most picture represents the lowest degree of connection in which you are a member of the group but do not feel very connected to it.

The right most picture represents the highest degree of connection in which you feel a sense of oneness with the group; as though you are fused with the group.

Appendix G: Fused Ingroup Prompt

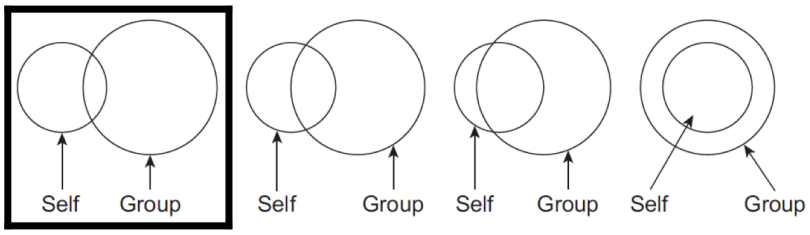
Think of a group to which you belong that represents the RIGHT most (bolded) picture (i.e., a group to which you belong that you feel very connected or fused to).



Please write the name of this group in the space below and describe the group (e.g., what is the group, what does the group do, what is the purpose of the group, etc.)

Appendix H: Not-Fused Ingroup Prompt

Think of a group to which you belong that represents the LEFT most (bolded) picture (i.e., a group to which you belong that you do not feel very connected to).



Please write the name of this group in the space below and describe the group (e.g., what is the group, what does the group do, what is the purpose of the group, etc.)

_____

_____

_____

_____

Appendix I: Linguistics Implication Form

This task consists of 20 sentences. Each sentence presents two pronouns in parentheses (I, we) that are grammatically appropriate and make sense in each sentence. In some sentences, however, one of the pronouns might feel like it fits better and in other sentences the other pronoun might feel like it fits better. For each sentence, please rate each pronoun in regard to how well, in your opinion, it fits the given sentence.

1. All of (our, my) answers matched the ones in the back of the book.
2. At first it didn't seem to make any difference, but by later that night the noise from the party was entirely too loud to allow (me, us) to sleep.
3. The salesman tried to persuade (me, us) to buy a set of knives.
4. The noise got to (us, me) before long.
5. (Our, My) idea of fun is sitting at home and listening to music.
6. The sun went in just when (I, we) decided to go outside.
7. Please don't do this to (us, me); it is just not fair.
8. It was (my, our) understanding that the deadline for the paper had been delayed one week.
9. Except for (me, us), everyone failed the test.
10. As a result of (our, my) suggestions, a minor revision in the policy has occurred.
11. (I, We) spent so much time on the initial planning that it seemed impossible to finish before the deadline.
12. It rained so hard that all of (our, my) clothes got soaked.
13. For the past few months, (I, we) have had reports of squabbling and dissatisfaction among the office workers.
14. According to (my, our) notes, only five of the original seven laws are still in existence.
15. Someone stopped (me, us) to get directions to the stadium.
16. We, I) waited by the phone for the doctor to return the call.
17. The cashier charged (us, me) too little for the groceries.
18. The mosquitoes didn't even bother (us, me).
19. Dinner was waiting on the table when (I, we) came back from the store.
20. It isn't easy to get lost in this town, but somehow (we, I) managed it.

Appendix J: Twenty-Statement Task

Please write 20 statements that generally describe you in the blanks provided.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

VITA

Amy Heger spent four years at Drake University studying psychology and advertising. She completed her Bachelors of Arts magna cum laude in 2010 with honors from the psychology department. Following graduation, she remained in Des Moines, IA and worked as a Marketing Specialist at Marsh & McLennan Companies for two years and coached club soccer. She moved to Knoxville, TN to pursue a doctoral degree in social psychology at the University of Tennessee in August 2012. Under the guidance of Dr. Lowell Gaertner, she earned her Masters in experimental psychology at UT. Furthermore, Amy took many advanced analytics courses during her tenure in the graduate program and added a statistics minor to her Doctorate degree. She has taught ten semesters of undergraduate classes at the University of Tennessee, including General Psychology, Social Psychology and Statistics in Psychology and was an adjunct instructor at Maryville College. In August 2018, Amy satisfied all requirements for her doctoral program, earning a PhD in experimental psychology with a concentration in social psychology.