

SOCIAL CONTAGION AND TRUE SELF

by

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ABSTRACT

In social contagion of memory, we incorporate information from other participants into our own memory and thus remember differently than we would have alone (Meade & Roediger, 2002). The current experiments examined if individual differences in true self would influence participants' reliance on their own memory relative to another person's memory and potentially influence the magnitude of the social contagion effect. Across two experiments, we primed differences in participants' true self and then asked them to remember visual scenes alongside a confederate who falsely suggested certain items had appeared in the scenes. In both experiments, participants incorporated the confederate's suggestions into their own subsequent recall and recognition. In Experiment 1, true self had no impact on the magnitude of the social contagion effect on recall or recognition performance. In Experiment 2, true self again had no impact on the magnitude of the social contagion effect on recall, but participants primed with intrinsic and achievement self reported a higher proportion of remember responses for falsely recalled items, and on recognition, individuals in the neutral condition falsely recognized fewer words than individuals in the achievement group. These findings are discussed in relation to source monitoring theory.

INTRODUCTION

In our everyday lives, we remember and recollect our individual and shared experiences with other people. Memory accuracy is important to how we remember with others, but sadly there is still much we do not know about why our memory can be accurate for certain events and not for others. For the most part, we want our memory for information and events to be as accurate as possible, whether the information is relevant for a student taking an exam or a witness giving a testimony of a crime to an officer or a jury. We sometimes confuse our own memory for events or information with the recollection of others and develop inaccuracies as a result. This is a phenomenon known as social contagion of memory, or memory conformity (Roediger, Meade, & Bergman, 2001). According to this phenomenon, we incorporate information from other people into our own memories and therefore we remember differently than we would have alone.

The purpose of this thesis is to determine if there are individual differences in susceptibility to social memory errors. Are some people more likely to incorporate misleading information from others? Specifically, the current project examines individual differences in one's views of true self or one's core attributes. True self is a feeling of knowing who you truly believe you are inside. This view of your self is relatively unchanging over time (Johnson, Robinson, & Michell, 2004). Of interest to the current study is whether or not individual differences in true self influence false memory in the social contagion of memory paradigm. One possibility is that individuals with a stronger sense of their true self might be less likely to be influenced by the ideas and suggestions of others.

There have been several explanations proposed to help explain how and why false memories form in different situations and, more specifically, in groups as a result of interacting with others. Wright, Memon, Skagerberg, and Gabbert (2009) suggest three primary mechanisms that influence memory. Normative influence, otherwise known as public conformity, is the cost of disagreeing versus the cost of being wrong. If the cost of disagreeing is high, such as potentially alienating a peer group, then publically conforming to the other person's memory would be in the person's best interest. If, however, the cost of being wrong is high, say a murder versus a theft, a person would be more likely to disagree. Informational influence is when you believe the other person has a better memory for the information than you. An example of informational influence could be students believing another student's summary of a research article that they were supposed to read for class. Finally, and most important to the current research, is memory change. This is actually where information suggested by the other person becomes incorporated into the other person's memory. One theoretical explanation of memory change is source monitoring. Source monitoring theory suggests that false memories arise when individuals remember the information, but misattribute the source of the information (i.e., they misattribute their partner's suggestion as having occurred in the original materials).

Johnson, Hashtroudi, and Lindsay (1993) set up the theoretical framework for source monitoring that is relevant to false memory, eyewitness memory, and old-new recognition judgments. According to the authors, source monitoring involves judgments about the origin or source of the information. Specifically, when we encode information,

we encode not only the information itself, but also additional memory characteristics that were present at encoding, such as perceptual, spatial, semantic, and affective details. These characteristics help determine the source of the information. For example, if the information is high on perceptual and spatial information, we are likely to attribute that memory to having occurred in the real world (as opposed to having thought about it or imagined it) because information encoded in the world typically has a high degree of perceptual characteristics. These judgments are affected by how strict of a criterion individuals set. Factors that influence criterion include the importance of accuracy, time, and current goals. According to source monitoring theory, memory errors in social memory paradigms occur when participants misattribute information presented by another person to having occurred in the original event.

Two related paradigms are primarily used to study source monitoring errors and social memory: memory conformity and social contagion. Wright, Self, and Justice (2000) developed the memory conformity paradigm to examine how discussing an event with others might affect later memory. In this paradigm, participants are presented with slightly different versions of the same event and then are asked to remember the event together. Specifically, in Experiment 1, participants were instructed to pay attention to pictures of cars because their memory for them would be tested later. Of the 50 cars presented, 30 were shown to both members of the dyad. Of the remaining 20 cars, 10 were shown to one participant and 10 were shown to the other exclusively. After a filler task, individuals were given an old/new recognition test and participants gave their responses to the car pictures in alternating order with their partner. Participants were

likely to incorporate their partner's responses into their own memory reports. In Experiment 2, participants viewed scenes of a woman stealing a man's wallet. The critical difference between the participants' scenes was that in one the woman is alone and in the other she has an accomplice. When it came time to collaborate there was some disagreement on whether or not there was an accomplice, although 79% eventually came to an agreement (see too Wright & Villalba, 2012, for further discussion of how memory conformity influences accurate and inaccurate information). This study shows that having two individuals describe or remember an event together can have a powerful impact on their memory.

Research in the related social contagion paradigm also focuses on how memory is influenced by remembering with others. The social contagion of memory paradigm was developed by Roediger et al. (2001) in order to study false memories that are implanted by other people through social influences. Participants viewed six common household scenes alongside a confederate. After a brief filler task, they engaged in a collaborative recall task. For this task, during half of the scenes the confederate introduced contagion items that were not presented in the original scenes. After this, the participant completed an individual recall test. They found that subjects were significantly more likely to recall contagion items when they were suggested by the confederate (relative to the baseline condition when the items were not suggested by the confederate), thus demonstrating that the social contagion paradigm does indeed create false memories for items that the confederate recalled.

Memories of these events are also subject to change based on who we are collaborating with. Meade and Roediger (2002) examined if an advanced warning of the effect could reduce or eliminate social contagion. Specifically, they told participants that their partner likely made mistakes and so that when responding on the memory tests, participants should be especially careful to write down only those items they were entirely confident were presented in the slides. In similar paradigms, warnings had been shown to reduce, but not completely eliminate, false memories (e.g., Wright, 1993), but warnings had not yet been tested in social false memory paradigms. Consistent with previous research, Meade and Roediger found that warnings reduced the effects of contagion, but did not eliminate the effects entirely. Further research has since replicated these findings. For example, Andrews and Rapp (2014) manipulated partner competence by having participants circle all of the letter “F” they could find in one minute. In the low competency condition the confederate circled 5 instances and in the high competency condition the confederate circled 24 instances. They then traded papers and totaled the number of F’s circled. Participants were always told by the experimenter that they demonstrated average ability while the confederate was told their performance was either above or below average. They found that individuals who worked with a low competency partner were less likely to incorporate their partner’s suggestions, but again the social contagion effect persisted, it was just relatively reduced.

However, when participants are not given explicit warnings about their partners, the evidence on partner characteristics is more mixed. For example, Numbers, Meade, and Perga (2014) examined the role that confederate accuracy plays in social contagion.

The proportion of incorrect items was varied: 0%, 33%, 66%, and 100%. Even at 100% incorrect items, contagion was still present and in fact, the magnitude of the social contagion effect did not vary across accuracy conditions. In contrast, Davis and Meade (2013) found that participants were less likely to incorporate misleading suggestions from older adult confederates relative to young adult confederates. Finally, Williamson, Weber, and Robertson (2013) manipulated the perceived expertise of a confederate to examine how that might affect later memory conformity. At the start of the experiment, the participant and confederate exchanged information about each other. The confederate said that they were either a police officer or an electrician as their previous employment. They also explicitly stated that they had experience in eyewitness testimony (police officer) or didn't (electrician). Then they viewed a crime clip of a car being broken into. Participants were indeed more likely to conform to the confederate's memory when they were perceived to be high on expertise.

Considered together, the research on partner or confederate characteristics suggests that these characteristics often do influence the magnitude of both social contagion and memory conformity effects. The qualities of the individuals that we recall with can have an effect on how likely, or unlikely, we are to misremember when we recall with them.

Also important to consider is the participant's relationship with their partner. Differences in the power level, real or perceived, can have an impact on how likely individuals are to conform to another person's memory. Skagerberg and Wright (2008) manipulated the perceived power of participants by assigning them as either a judge (high

power) or designer (low power). Before being assigned the power role, participants were shown fifty faces for three seconds each. After the power task they were given a collaborative recognition test. They found that low power designated individuals were more influenced by their partner's memory report. Likewise, Skagerberg and Wright (2009) examined sibling differences in power and how that might affect a memory conformity task. This was a 'natural' power differential that might happen. After engaging in an initial 50 face viewing task, they viewed 100 faces and were asked to make judgments on if they had seen these faces before or not. While normal memory conformity effects were observed, there was no difference between older or younger siblings going first and conformity. Together, these studies suggest that some types of power relationships influence memory conformity while others do not.

Memory can also be affected by those closest to us, although, the research on personal relationships is mixed and, in fact, shows every pattern of results: personal relationships can increase memory conformity, have no effect on memory conformity, and can decrease memory conformity. Specifically, French, Garry, and Mori (2008) examined memory conformity between intimate couples that had been in a relationship for at least 3 months relative to pairs of strangers. Using an overlapping movie technique, participants believed that they were watching the same movie, while they were actually watching something different. Participants that were in intimate relationships were more likely to exhibit memory conformity than pairs of strangers. In contrast, Oeberst and Seidemann (2014) found no difference between friends and strangers on a memory task. They had participants complete a memory test after listening to a tape, which was slightly

different for each participant. Participants completed the test either alone, with the friend they brought into the lab, or with a friend that someone else brought into the lab. They found that participants exhibited memory conformity when they did not get the critical detail, however friendship did not enhance the memory conformity effect. Finally, Kieckhafer and Wright (2014) found that participants were less likely to incorporate suggestions from a likeable partner (relative to a partner they did not like). In this study, participants were randomly assigned to one of three likability conditions: likable, dislikable, or control. Confederates in the various conditions were trained to interact in different ways with the participants. They found that individuals were less likely to exhibit memory conformity in the likable condition. Considered together, the research on personal relationships suggests that at least sometimes, the relationship between participants can influence the magnitude of the social contagion/memory conformity effect, although there is no consensus yet on which factors of personal relationships (intimacy, friendship, likability) are most relevant to the effect.

What makes my study a bit different is that I am looking at individual characteristics of the participant. Are some individuals more or less susceptible to the suggestions of others? That is, regardless of who one is remembering with, and/or the relationship between partners, are there some individuals who enter the experiment more or less predisposed to incorporate others' suggestions?

The role of individual differences in social contagion is potentially important, as ample evidence suggests that differences in individual memory performance influence the magnitude of the effect. For example, participants are less likely to incorporate

misleading information when they are allowed to re-study the stimuli (McNabb & Meade, 2014), and when they are given an initial test with feedback on the information (Huff, Davis, & Meade, 2013). Participants are more likely to incorporate others' suggestions when the misleading information is presented multiple times (Huff et al., 2013; Meade & Roediger, 2002) and also when they feel that their partner has a better memory than they do (Allan, Midjord, & Martin, 2012; Hart & Meade, in prep). These studies demonstrate that social contagion and memory conformity effects may be sensitive to variations in individuals' memory performance.

Of interest to the current experiments is whether more traditional individual differences (as defined in terms of personal characteristics) also influence the magnitude of social contagion effects. Previous research suggests that individual differences in personal characteristics can influence social contagion/memory conformity, but again the literature is mixed and additional research is necessary. Thorley (2013) examined if levels of memory conformity could be predicted by the degree of participant suggestibility. Individual suggestibility was assessed by participants reading a short narrative and then responding to 15 leading questions and 5 non leading questions. Memory conformity was assessed by a joint old/new recognition test. Participants who answered more of the misleading questions on the suggestibility task had higher levels of memory conformity. These findings suggest that individuals who are suggestible to leading questions are also susceptible to memory conformity, which could have serious consequences for the individual in regards to eyewitness testimony. Wright, London, and Waechter (2010) were interested in if memory conformity might be affected by social

anxiety in an adolescent population. Their rationale for looking at adolescents in particular was that adolescents are frequently asked to testify in court and this group is particularly susceptible to peer influences. Additionally, adolescence is the most common age of onset for social anxiety disorder. Such social anxiety could lead adolescents to conform more frequently to normative influences. Participants in the study were first given the Social Anxiety Scale for Adolescents. Next, participants engaged in a face recognition test in which subjects took turns saying if a face was from the studied material or new. They found that individuals who were rated as being socially avoidant were less likely to be influenced by the memory reports of others. Individuals who were high on social anxiety, however, were more likely to conform to the memory of their partner. This research demonstrates that individual factors can play a significant role in memory conformity. Finally, Tainaka, Miyoshi, and Mori(2014) examined if individuals with lower levels of self-esteem would perform differently on a memory conformity task than individuals that have higher levels of self-esteem. Participants were divided into three groups based on their reported self-esteem. Participants then watched a video clip in pairs, but the screen made it so they were viewing two different versions of the clip. They were tested both before and after discussing the clip together such that memory conformity effects could be observed. Individuals who were in the low self-esteem condition tended to conform more to their partner's memory than individuals in the high self-esteem condition. This suggests that individual differences in personality characteristics can indeed have an effect on how likely we are to conform to our partner's memory.

However, there is also evidence that not all individual differences influence the magnitude of social contagion effects. Most notably, Davis and Meade (2013) examined the effects of participant and confederate age on the social contagion of memory paradigm. They found that participant age had no effect on social contagion such that young and older adults were equally likely to incorporate suggestions from other people and both younger and older adults discounted older adult confederate's memory. Likewise Gabbert, Memon, and Allan (2003) demonstrated that young and older adults were equally likely to demonstrate memory conformity effects. These studies emphasize that not all individual difference variables influence the magnitude of social false memory effects.

Petterson and Paterson (2012) examined the effects of participant independence and interdependent views of themselves and how this might affect later memory conformity. These self views were thought to be a result of an individual's culture. Participants were instructed to complete a self-construal scale in order to assess levels of independence and interdependence. They found that participants who scored higher on independence were less likely to recall the presented misinformation, however given the mixed findings within this study and within in the broader social memory literature, it is important to further examine how individual differences might affect participants' memory. Our study addresses one factor, true self, and how individual difference in sense of true self might impact recalling false information and memory change in groups.

True self is a feeling of knowing who you truly believe that you are inside. This view of yourself is relatively unchanging (Johnson, Robinson, & Michell, 2004). In Vess,

Schlegel, Hicks, and Arndt (2013), feeling of true self was assessed in terms of personal negative shortcomings. Three components were examined using the Final Authenticity Scale from Wood et al. (2008): authentic living, acceptance of external influence, and self-alienation. Acceptance of external influence is a subjective measure of how likely an individual is to conform to the influence of another person. Self alienation is a reverse measure of how well an individual knows their true self, also known as true self knowledge. Authenticity is feeling as though you can express your true self in front of others rather than hiding your true self. Feelings of authentic living, or expressing one's true self, lead to increased shame free guilt and reduced guilt free shame. Additionally, Landau et al. (2010) found that individuals primed with intrinsic self concept conformed less to other people's opinions and were less concerned with satisfying external self-esteem issues. These studies demonstrate that a sense of true self reduces our need to be accepted by others and lets us express who we believe we actually are inside.

True self is directly relevant to memory. Baldwin, Biernat, and Landau (2015) instructed participants to think about a memory from their past for a few moments and then to describe the memory in an essay. After writing about the memory, participants reported information regarding their true self concept. Baldwin et al. found that state nostalgia was positively correlated with current self authenticity and negatively correlated with extrinsic self focus. These findings suggest that recollecting past memories about ourselves can increase how true to our intrinsic self we believe that we are and, more relevant to the current study, provides a direct link between memory and sense of true self. Likewise, Lokes, Guilbault, Philippe, and Houle (2014) examined the themes

present in autobiographical memories. Specifically, they asked participants to describe either an intrinsic or extrinsic memory (intrinsic memory focused on better understanding one's self, finding meaning in life, or helping an individual or group; extrinsic memory focused on receiving social recognition, winning a prize, being recognized as physically attractive, or making a good impression). They found that intrinsic memory groups tended to describe memories that were more significant and more rehearsed than individuals in the extrinsic group. They also found that intrinsic memories were also associated with well-being and adjustment. Again, this study suggests that true self is relevant to memory, although neither has examined the influence of true self in predicting susceptibility to socially suggested false information, as in the current experiments.

A sense of true self is also relevant to understanding how individuals interact with and respond to others. Plasencia, Taylor, and Alden (2015) looked at how increasing the participant's sense of true self in individuals with social anxiety disorder might increase the social functioning of these individuals. They found that increased sense of self authenticity lead participants to have more positive perceptions of their partner's responses on a safety behaviors task. Further, Bargh, McKenna, and Fitzsimons (2002) explored how the anonymity afforded by the internet might affect expression and perception of true self relative to face-to-face interactions. Before they interacted with the other participant, individuals wrote down traits corresponding to their actual self and true self. On a subsequent me/not me task, participants in the internet interaction condition were quicker to respond to words corresponding to their true self. In Experiment 3, they investigated whether being able to disclose information about your true self would

increase partner likability. Participants provided true self characteristics they would like for a romantic partner and characteristics they would like for an ideal close friend.

Individuals in the internet communication condition were more likely to project these ideal characteristics on their partner than individuals in the face to face condition, but only those for an ideal friend. These findings indicate that not only does internet communication increase the accessibility of true self information, but it also allows us to project these kinds of qualities onto others, potentially facilitating feelings of closeness.

Most relevant to the current study, true self is also relevant to how likely participants are to consider others' responses when performing a task. Arndt et al. (2002) examined intrinsic self and how it related to conformity on a rating task. Participants were primed with an essay prompt designed to elicit thoughts about their intrinsic self, achievement self, or a neutral self. Afterwards, they engaged in a painting rating task in which they were instructed to rate a group of paintings using a booklet that had the scores of a previous participant visible on the other page. They found that participants in the intrinsic self condition were less likely to conform to the decisions of others on a rating task as compared to those in the achievement or neutral prompt conditions. This study is especially relevant to the current experiment because it suggests that individuals who are high on intrinsic self may be less likely to consider other's responses on a task.

Of interest is whether these findings are also applicable to a memory task. That is, will individuals who are high on measures of true self be less likely to be influenced by others on a social memory task (as they were less likely to be influenced by others on a conformity task (cf. Arndt et al., 2002)? On the one hand, both conformity and social

memory tasks involve considering information from others. Given previous research that true self influences how people interact with others (Arndt et al., 2002; Bargh et al., 2002; Plasencia et al., 2016) and consider other's responses when completing a task (Arndt et al., 2002), it is possible that these differences will translate to social memory tasks as well. On the other hand, it is also possible that in fact the differences obtained on measures of true self on other tasks will not generalize to a social memory task. Social contagion focuses mostly on memory change rather than (or in addition to) individuals conforming under social pressure to one person's memory or the other's. In addition, previous research on individual difference predictors of social false memory is mixed suggesting that memory change is not cleanly predicted by individual differences. Given the diversity of evidence in the literature, it is important to examine if these findings translate to our paradigm and, if so, to what degree.

In this experiment, I examined if true self would affect the magnitude of social contagion that individuals would incorporate into their own memory. I had participants engage in the same essay writing task present in Arndt et al. (2002) in order to manipulate their sense of self before running them through the social contagion procedure. Based on research done in both the memory conformity and true self literature, I predict the following: Participants that have higher levels of true self would show reduced social contagion because they will rely more on their own memory as opposed to the memory of another person. This was measured through both an individual recall and recognition test. Additionally, I predict that participants with higher levels of true self will produce reduced 'know' responses for the error that they do incorporate.

These know judgment are indicative of the participant having a sense of familiarity but being unable to recollect back to when they originally saw the item in the scene. They will be measured during the individual recall task using R/K judgments. Finally, I included several post experimental questionnaires in order to better understand the influence of our self manipulation. I also predict to find differences on the intrinsic, meaning in life, and mindfulness questionnaires due to our self manipulation. I also believe that there will be differences in how individuals in both conditions rate their own memory as well as their partner's memory on a metamemory questionnaire. Participants in the intrinsic condition will have higher confidence in their own memory and will tend to rely less on their partner's memory for the task. Finally, I predict that participants in the intrinsic condition will score higher on the confidence in general memory scale as well as noting that their own memory for the scenes was better than that of the confederate.

EXPERIMENT 1

MethodParticipants

Sixty-four students were recruited through the Montana State University SONA system. Participants were given course credit for participation in this study for an intro-level psychology course. Participants who did not complete the experiments or followed instructions improperly were replaced. A total of 4 subjects were replaced this way, leaving 60 participants in the experiment.

Design

The design is a 2 x 2 mixed factorial design with intrinsic versus neutral self as the between-subjects factor and contagion versus control as the within-subjects factor. My primary dependent variables were false recall, correct recall, remember/know judgments, false and veridical recognition, and subjective reports on the final questionnaires.

Materials

I used the intrinsic and the neutral self prompts from the Arndt et al. (2002) study as my method of inducing a sense of intrinsic or neutral self. In the intrinsic condition, participants were asked to recall one unchanging inner quality that made them feel good about themselves and a time when that quality was on display. Participants in the neutral condition were asked to recall an incredibly ordinary, originally boring in Arndt et al.

(2002), event in their lives that made them feel neither good nor bad about themselves (see Appendix A).

Contagion materials for recall and recognition were similar to materials used in Meade and Roediger (2002) and Huff, Weinsheimer, and Bodner (2016). Participants were presented with six common household scenes comprised of schematically consistent items (see Appendix A). Each of these 6 scenes had 2 schema congruent items missing. These items constituted my contagion and control items. Contagion items were defined as false items presented by the confederate during the initial group recall. Control items were the same items as the contagion items but were considered as control items when the confederate does not recall those items in the initial group recall. Using control items allowed us to establish a baseline for how often a participant recalled an item that was not in the scene naturally. The recognition test was a 36 item test with 12 of those items being contagion/control items, 6 filler items, and 18 correct items.

I used a battery of questionnaires to assess differences in our two groups. The Final Authenticity Scale (Wood et al., 2008) was used to evaluate any differences in intrinsic self between our two self conditions. A meaning in life questionnaire (Steger et al., 2006) was used to determine if there were any difference in meaning in life between our two groups. A mindfulness questionnaire was used to evaluate differences in mindfulness between our two groups since previous research has shown some correlation between sense of intrinsic self and mindfulness. Finally, a confidence in memory and a metamemory scale assessed any difference in how participants in our experiment differed

on their perceptions of their own memory (Feldman, 2007). Additional materials included a filler task consisting of a series of multiplication math problems (see Appendix A).

Procedure

Participants were assigned one of two essay prompts (intrinsic or neutral) from the Arndt et al. (2002) article in order to manipulate their sense of self. Participants were instructed to write on this essay for 3 minutes. Next, participants were told to study images from 6 ordinary household scenes and that their memory for the scenes would be tested later. Participants were exposed to each of the 6 scenes for 15 seconds. After participants had looked at the scenes, a filler task was administered for 4 minutes which consisted of multiplication problems. Next, the participant and confederate took turns recalling items from the 6 scenes. Both recalled 6 items for each scene, or 12 items total. For 3 of the scenes, 2 contagion items per scene were suggested by the confederate. These were items that were not present in the scene but instead were recalled by the confederate to see if they would transfer to the participant's memory. For the other 3 scenes these contagion items were not suggested and served as control items. This served as a baseline for our contagion items such that we could tell how likely participants were to generate these items by chance from their own memory versus when the confederate suggested them.

After the group recall, the participant and confederate were separated for an individual recall task. Participants were given two minutes per scene to recall items from each of the 6 scenes. Additionally, they were asked to make a remember/know judgment on each of the items they wrote down (Gardiner, 1985). Specifically, participants were

told to write R for remember if they could recall some detail about the item such as color, location, or details about the object. Participants were instructed to write K for know if they had no recollective details of the item but still had a sense of familiarity that the item was present.

Next a recognition/source monitoring test was administered so that participants could attribute the source of each item. Specifically, if they remembered an item from the scene they checked the 'scene' column. If they remembered that the other participant said an item they checked the 'other subject' column. They could have checks in multiple columns if they remembered the item from the scene and that the other subject recalled the item. If they did not remember a word from anywhere in the experiment then they checked the 'neither' column. Participants had as much time as they needed to complete the source monitoring recognition test.

The final part of the experiment consisted of a battery of questionnaires consisting of the mindfulness and meaning in life questionnaires, the confidence in memory and metamemory scales, and a measure of self-esteem. Participants were given as much time as necessary to complete the questionnaires.

Results

False Recall

False recall results are presented in Table 1. The mean proportion of contagion and control items falsely recalled was analyzed using a 2: Contagion (contagion or control) x 2: Self (intrinsic or neutral) mixed factorial ANOVA. I found a main effect of

Contagion, $F(1, 58) = 46.78$, $MSE = .03$, $p < .05$. This means that participants were more likely to recall a contagion/control item when it was suggested by the confederate than when it was not suggested by the confederate. I found no main effect of Self, $F(1, 58) = 1.39$, $MSE = .05$, $p > .05$ and no interaction between Contagion and Self, $F(1, 58) = .91$, $MSE = .03$, $p > .05$. Contrary to my original hypothesis, participants in the self-condition did not differ in the magnitude of social contagion that they exhibited.

Table 1: Mean Proportion of Contagion and Control Items Falsely Recalled and the Mean Proportion of Remember and Know Judgments as a Function of Intrinsic or Neutral Self (N=60). Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral
Contagion	.58 (.17)	.59 (.20)
Remember	.23 (.23)	.26 (.19)
Know	.32 (.22)	.34 (.24)
Control	.33 (.19)	.41 (.23)
Remember	.14 (.18)	.14 (.20)
Know	.18 (.17)	.27 (.23)

Remember Judgments

Remember judgments were analyzed separately to determine if metacognitive judgments for falsely recalled items varied as a function of Contagion and Self. The remember responses are also presented in Table 1. Remember and know responses sum to the proportion recalled with any differences due to rounding error. I found a main effect of Contagion in regards to remember judgments, $F(1, 58) = 10.69$, $MSE = .03$, $p <$

.05. Participants were significantly more likely to report a remember judgment for contagion items compared to control items. I found no effect of Self, $F(1, 58) = .05$, $MSE = .03$, $p > .05$ and no significant interaction, $F(1, 58) = .20$, $MSE = .03$, $p > .05$. Participants in the intrinsic and neutral conditions were equally likely to report remember responses for the contagion/control items.

Know Judgments

I found a similar pattern for the know judgments. A main effect of Contagion, $F(1, 58) = 10.61$, $MSE = .03$, $p < .05$, was observed. Participants were more likely to say they knew a contagion item from the scene as compared to a control item. There was no main effect of Self on know judgments, $F(1, 58) = 1.23$, $MSE = .06$, $p > .05$ and no significant interaction between Contagion and Self $F(1, 58) = 1.06$, $MSE = .03$, $p > .05$. Participants in the intrinsic and neutral condition were equally likely to report know judgments for the contagion/control items.

Correct Recall

Correct recall was measured by computing the proportion of correct items recalled by the participant, as seen in Table 2. An independent samples t-test was conducted to examine any differences between participants in the intrinsic self group and the neutral self group. There were no significant differences between my groups, meaning that both groups recalled similar proportions of correct items, $t(58) = .78$, $p > .05$.

Table 2: Mean Proportion of Correct Recall as a Function of Intrinsic and Neutral Self (N=60). Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral
Correct Recall	.32 (.06)	.31 (.07)

Extralist Intrusions

Extralist intrusions are defined as items that were not present in the scenes but were also not recalled by the confederate in the group recall task. I examined extralist intrusions because even though the intrinsic and neutral groups did not differ in false recall of contagion/control items or correct recall, it was still possible that one group was more likely to produce extra items not presented in the scenes. Extralist intrusions were analyzed using an independent samples t-test, $t(58) = -1.06, p > .05$. Individuals recalled similar numbers of extralist intrusions across self conditions. This implies that participants both groups were equally likely to guess items not in the scenes.

Table 3: Mean Number of Extralist Intrusions per List as a Function of Intrinsic and Neutral Self (N=60). Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral
Extralist	7.53 (.06)	8.97 (.07)

False Recognition

False recognition data are presented in Table 4. False recognition was defined as responding ‘scene’ or ‘scene’ and ‘other subject’ (both) responses on the source monitoring test. Both of these responses indicate that the participant recognized the item as having occurred in the scenes even though it did not. The proportion of contagion and control items falsely recognized was analyzed by a separate 2 X 2 mixed factorial ANOVA. I found a significant social contagion effect, $F(1, 58) = 4.463$, $MSE = .033$, $p < .05$. There was no effect of Self on the recognition test $F(1, 58) = 2.034$, $MSE = .072$, $p > .05$ and no interaction $F(1, 58) = .157$, $MSE = .033$, $p > .05$. Individuals were more likely to falsely recognize items suggested by the confederate than those same items not suggested by the confederate, and more importantly, the magnitude of this effect did not differ across intrinsic and neutral self conditions.

Table 4: Mean Proportion of Contagion and Control Items Falsely Recognized as a Function of Intrinsic or Neutral Self (N = 60). Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral
Contagion	.78 (.22)	.70 (.27)
Control	.70 (.21)	.64 (.20)

Correct Recognition

Correct recognition was measured using items that were correctly recognized from the scenes. This was defined as responding ‘scene’ or ‘scene’ and ‘other subject’

(both) responses on the source monitoring test. Both of these responses indicate that the participant correctly recognized the item as having occurred in the scenes. I analyzed correct recognition using an independent samples t-test, $t(58) = 2.32, p = .02$. Individuals in the intrinsic condition ($M = .68$) were more likely to correctly recognize items from the scenes than participants in the neutral condition ($M = .57$).

Questionnaires

Data from the questionnaires are presented in Tables 5, 6, and 7. For the Final Authenticity Scale, I broke the results into 3 subscales from Wood et al. (2008): self-alienation, external self, and authenticity. In the Final Authenticity Scale, meaning in life, confidence in memory, and mindfulness questionnaires there were no significant differences in scores between the intrinsic and neutral conditions, all t 's $< 1.18, p$'s $> .24$. A marginal difference on the locally developed metamemory questionnaire was found concerning how the participant rated the confederate's memory, $t(58) = 1.84, p = .071$. Specifically, participants were asked 'How accurate would you rate your partner's memory for the word lists presented in today's experiment?' The intrinsic group had a marginally higher average score ($M = 3.80$) than the neutral group ($M = 3.53$) indicating that participants in the intrinsic condition tended to rate their partner's memory higher. This finding was interesting, yet should be treated with caution since it was both marginal and in the opposite direction to which we had initially predicted.

Table 5: Mean Subscores on the Final Authenticity Scale as a Function of Intrinsic or Neutral Self (N = 60). The Scales Ranged from 1 – 7. Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral
Authentic	5.68 (.83)	5.55 (1.38)
External	3.33 (1.07)	3.16 (1.39)
Alienation	2.62 (1.27)	2.23 (1.24)

Table 6: Mean Scores on Final Questionnaires as a Function of Intrinsic or Neutral Self (N=60). The Meaning in Life Scale Ranged from 1 – 7; The Confidence in Memory Scale Ranged from 1 - 5; The Mindfulness Scale Ranged from 1 – 4; The Self Esteem Scale Ranged from 1 – 5. Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral
Meaning in Life	4.45 (1.20)	4.59 (.66)
Confidence in Memory	2.49 (.74)	2.46 (.73)
Mindfulness	2.66 (.49)	2.78 (.72)
Self Esteem	3.70 (.88)	3.67 (1.06)

Table 7: Mean Scores of the Metamemory Questionnaire as a Function of Intrinsic and Neutral Self (N=60). The Scale Ranged from 1 – 5. Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral
Personal	2.93 (.78)	2.97 (1.10)
Remember Ability		
Partner Remember	3.63 (.76)	3.53 (.68)
Ability		
Confidence in	3.40 (.77)	3.47 (1.04)
Remembering		
Ability		
Confidence in	3.60 (.89)	3.47 (.68)
Partner		
Remembering		
Ability		
Rate for Memory	2.95 (.77)	3.00 (.98)
Today		
Rate for Partner	3.80 (.55)	3.53 (.57)
Memory Today		
Confidence in	3.60 (.89)	3.47 (.68)
Partner		
Remembering		
Ability		

Table 7 Continued

Rate for Memory	2.95 (.77)	3.00 (.98)
Today		
Rate for Partner	3.80 (.55)	3.53 (.57)
Memory Today		
Memory Accuracy	3.38 (.89)	3.37 (.81)
Partner Memory	3.73 (.64)	3.57 (.63)
Accuracy		
Helpfulness of	3.73 (1.36)	3.83 (1.02)
Partner		
Help of	4.1 (.84)	3.97 (1.13)
Remembering with		
Others		

Finding no differences on the final questionnaires between the intrinsic and neutral self conditions is unexpected and is possibly due to the fact that participants in both groups were relatively high on the measure of true self (on the alienation subscale of the Final Authenticity Scale, participants in the Intrinsic condition reported an average score of 2.62 and participants in the Neutral condition reported an average score of 2.23). These means are relatively low across conditions considering that this is a 7 point scale. This scale is reverse coded such that low scores indicate high levels of true self. One

possibility is that my manipulation did not move participants off of their relatively high starting point. I address this issue formally in Experiment 2. However, I also further explore this possibility here briefly via post hoc correlation analyses; it is possible that in spite of no group differences in intrinsic self ratings, individual variations within each group might be related to the magnitude of the social contagion effect. To test this possibility, we correlated the social contagion effect by taking the contagion – control difference score and correlating it with participants' scores on the intrinsic self alienation subscale. I found no significant correlations for either recall, $r(58) = -.15, p > .05$, or recognition, $r(58) = .23, p > .05$.

Discussion

While there was a significant effect of contagion on recall and recognition, intrinsic self did not influence the magnitude of this effect. Participants in both the intrinsic and neutral condition were equally likely to incorporate errors on both recall and recognition tests. There were no significant differences from our final questionnaires such that participants in both the intrinsic and neutral conditions rated themselves similarly across all of our questionnaires. This is to say that participants in the intrinsic and neutral condition rated themselves similarly on feelings of intrinsic self, meaning in life, confidence in memory, and mindfulness.

The lack of differences between the intrinsic and neutral groups was surprising and contradictory to my hypotheses. This lack of a difference could be due to several explanations. The first possible explanation for the lack of differences in contagion could be due to social contagion itself. This effect is quite strong and could have overpowered

any memory differences between our two groups. Secondly, there might be no difference between our two groups due to the possibility that MSU students are naturally high in a sense of intrinsic self and this is causing our groups to look similar regardless of the essay. Finally, it could be that the effect of the intrinsic self manipulation is not lasting long enough to show up on the final questionnaires. There is a large amount of time in between the initial essay and the final questionnaires, at least 26 minutes conservatively, which could cause any differences between our two groups to vanish.

EXPERIMENT 2

The purpose of Experiment 2 was to re-examine the effect of sense of self on social contagion with stronger tests of the issues outlined above that may have contributed to the null effects in Experiment 1 (the strength of the social contagion effect, the generally high sense of intrinsic self in our population, and the duration of the self manipulation). Toward that end, Experiment 2 included both high expectancy and low expectancy contagion/control items (only high expectancy items were included in Experiment 1). High expectancy items are items that participants strongly associate and expect to be in a given scene. Low expectancy items are items that participants associate with a given scene but not quite as strongly as high expectancy items. High and low expectancy items were determined by pilot data (Huff et al., 2016) in which participants were given the name of a room (e.g., kitchen) and asked to list items they would expect to find in the room. Items listed by many participants were designated as high expectancy items and items listed by a few participants were designated as low expectancy items. Low expectancy items should be more readily noticed by participants in both conditions as compared to high expectancy items, and since they are less schematically consistent, they may allow participants in the intrinsic condition to better differentiate between true items and items suggested by the confederates. In this case, participants in the intrinsic condition should demonstrate lower levels of social contagion for the low expectancy items only. Experiment 2 also included an additional self manipulation: the achievement self condition, also from Arndt et al. (2002). The achievement condition should reduce the sense of intrinsic self relative to the intrinsic and neutral conditions. Because

participants in Experiment 1 reported high levels of true self in both the intrinsic and neutral conditions, the achievement condition should offer a stronger comparison of any effects of true self on false memory. Participants in the achievement condition should show the highest levels of social contagion. Finally, Experiment 2 also included a manipulation check that measured true self knowledge before the group recall in order to determine if the intrinsic self manipulation was still effective during the group recall task.

Method

Participants

One hundred seventeen students were recruited through the Montana State University SONA system. Participants were given course credit for participation in this study for an intro-level psychology course. Participants who did not complete the experiments or followed instructions improperly were replaced. A total of 9 subjects were replaced this way, leaving 108 participants in the experiment.

Design

Our design is a 3 x 2 x 2 mixed factorial design with Self (intrinsic versus neutral versus achievement) as our between-subjects factor and Contagion (contagion versus control) and Expectancy (low expectancy versus high expectancy) as our within-subjects factors. Our dependent variables are false recall, correct recall, remember/know judgments, false and veridical recognition, and subjective reports on the final questionnaires.

Materials

Three essays were used from Arndt et al. (2002) in order to manipulate the participant's sense of intrinsic self. In addition to the intrinsic and neutral essays that were used in Experiment 1, I also used the achievement self prompt. In this prompt, participants were asked to think about one of their achievements or accomplishments and how that reflects their competence and success as a person (see Appendix B). A manipulation check was employed between the filler task and the collaborative recall task in order to check the participants' sense of true self immediately prior to the collaborative recall (see Appendix B). This manipulation check was a four question survey from Wood et al. (2008) that was scored on a seven point scale with one being strongly disagree and 7 being strongly agree. The same social contagion scenes from Experiment 1 were used. However, the contagion/control items used in Experiment 2 were different in that instead of two high expectancy items being presented in three of the six scenes; one high and low expectancy item were presented in three of the six scenes. The subsequent recognition test remained mostly the same with the 36 items included. However, the recognition test used in Experiment 2 included both high and low expectancy contagion/control items (in contrast to the recognition test in Experiment 1 that included only high expectancy items). The same post experimental questionnaires from Experiment 1 were also employed.

Procedure

Similar to Experiment 1, participants and the confederates signed in and filled out consent forms. Participants were then told to read and write on an essay topic for the next

3 minutes. These essay topics from Arndt et al. (2002) primed participants for feeling a certain way about who they are as an individual. After this, the participants saw common household scenes presented one at a time. Participants were told to pay attention to these scenes because their memory would be tested later. After viewing these household scenes, participants were given a 4 minute filler task consisting of multiplication problems in order to prevent rehearsal. Next, participants were given a short questionnaire derived from the Final Authenticity Scale (Wood et al., 2008) in order to check that our intrinsic self manipulation was still in effect. They were asked to state how much they agreed with the questions on a scale of 1-7 and were given as much time as necessary to complete the task. Next, participants participated in a collaborative recall where they each recalled 6 items from each of the previously presented scenes. The confederate introduced one high and one low expectancy contagion items for three of the six scenes. After the collaborative recall, the confederate was moved to a separate room and the participant completed an individual recall test in order to determine the participant's memory for the scenes. They were also asked to make a remember/know judgment for each item recalled to specify if they remembered specific recollective details of the item or if the item was familiar. Next, participants completed a recognition test that consisted of 36 items, just like in Experiment 1. Finally, participants filled out a battery of questionnaires, the same as in Experiment 1. Participants were then properly debriefed and awarded course credit for their time.

Results

False Recall

The mean proportion of false recall is presented in Table 8. Using a 3: Self (intrinsic or neutral or achievement) x 2: Contagion (contagion or control) x 2: Expectancy (high or low expectancy) mixed factorial ANOVA, we found a main effect of Contagion, $F(2, 108) = 66.85, MSE = .39, p < .05$. This means that the contagion/control items were more likely to be recalled when the confederate presented them than when the confederate did not suggest them. I also found a main effect of Expectancy, $F(2, 108) = 207.58, MSE = .66, p < .05$. High expectancy items were significantly more likely to be recalled than low expectancy items. I did not find a main effect of Self, $F(2, 108) = .196, MSE = .01, p > .05$, nor any interactions, F 's $< 1.3, p$'s $> .05$. The magnitude of the social contagion effect for high and low expectancy items was not influenced by participants' sense of self.

Table 8: Mean Proportion of High and Low Contagion and Control Items Falsely Recalled as a Function of Intrinsic, Neutral, and Achievement Self (N=108). Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral	Achievement
Contagion	.38 (.03)	.39 (.03)	.35 (.03)
High	.58 (.27)	.54 (.32)	.52 (.29)
Low	.18 (.22)	.25 (.29)	.19 (.26)
Control	.20 (.03)	.17 (.03)	.19 (.03)
High	.39 (.33)	.32 (.23)	.36 (.30)
Low	.01 (.06)	.01 (.06)	.02 (.08)

Remember Judgments

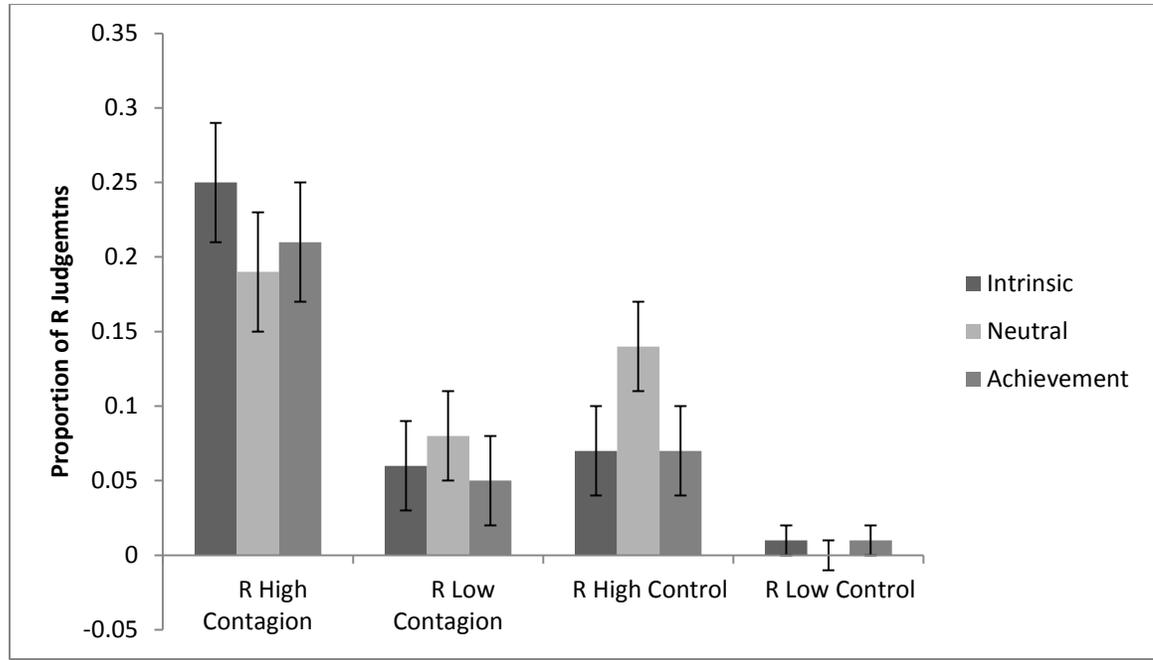
The mean proportion of remember judgments are reported in Table 9. I ran a 3 X 2 X 2 mixed model ANOVA in order to test remember judgments. There was a significant main effect of Contagion on remember judgments, $F(2, 108) = 33.39$, $MSE = .24$, $p < .05$. This means that participants were more likely to report remember judgments for contagion items as compared to control items. There was a significant effect of Expectancy on remember judgments, $F(2, 108) = 68.07$, $MSE = .39$, $p < .05$. When the item was a high expectancy item, participants were more likely to respond with a remember response than when it was a low expectancy item. There was no main effect of Self, $F(2, 108) = .29$, $MSE = .75$, $p > .05$. These main effects were qualified by a significant interaction between Contagion and Expectancy, $F(2, 108) = 6.34$, $MSE = .06$, $p < .01$ and a significant three way interaction between Contagion, Expectancy, and Self, $F(2, 108) = 3.21$, $MSE = .06$, $p < .04$. Follow up tests on the three-way interaction

revealed that for high expectancy items participants in the Intrinsic and the Achievement conditions were more likely to report remember responses for contagion items than control items, $t(35) = 4.32, p = .00$, for the intrinsic condition and $t(35) = 3.42, p = .00$ for the achievement condition. However, participants in the Neutral condition were equally likely to report remembering high expectancy contagion and control items, $t(35) = 1.10, p > .05$. The pattern of remember responses for low expectancy items was slightly different. For low expectancy items, participants in the Intrinsic, $t(35) = 2.37, p = .02$, and Neutral, $t(35) = 2.49, p = .02$, conditions were more likely to report remembering contagion items than control items. However, participants in the Achievement condition were equally likely to report remembering low expectancy contagion and control items, $t(35) = 1.67, p > .05$. This suggests that patterns of social contagion effects differed across groups for the high and low expectancy items (see Figure 1). All other interactions were not significant, $F's < 1.0, p's > .05$.

Table 9: Mean Proportion of High and Low Contagion and Control Items for Remember and Know Judgements as a Function of Intrinsic, Neutral, and Achievement Self (N=108) Standard Deviations are Presented in Parentheses.

		Intrinsi	Neutra	Achievement
	c		l	
Contagion High		.58	.54	.52 (.29)
	(.27)		(.32)	
R High		.25	.19	.21 (.21)
	(.24)		(.28)	
K High		.33	.34	.29 (.24)
	(.25)		(.3)	
Contagion Low		.18	.25	.19 (.26)
	(.22)		(.29)	
R Low		.06	.08	.05 (.12)
	(.13)		(.2)	
K Low		.12	.17	.14 (.22)
	(.18)		(.23)	
Control High		.39	.32	.36 (.3)
	(.33)		(.23)	
R High		.07	.14	.07 (.14)
	(.13)		(.22)	
K High		.32	.19	.27 (.31)
	(.29)		(.23)	
Control Low		.01	.01	.02 (.08)
	(.06)		(.06)	
R Low		.01	0 (0)	.01 (.06)
	(.06)			
K Low		0 (0)	.01	.01 (.06)
			(.06)	

Figure 1: Mean Proportion of Remember Judgments as a Function of Intrinsic, Neutral, and Achievement Self and High and Low Expectancy (N=108). Error Bars Represent Standard Error.



Know Judgments

In regards to know judgments (also presented in Table 9), I found a main effect of Contagion, $F(2, 108) = 27.40$, $MSE = .21$, $p < .05$. This means that participants were more likely to make know judgments for contagion items than for control items. I also found a main effect of Expectancy, $F(2, 108) = 92.20$, $MSE = .47$, $p < .05$. When the item was a high expectancy item, participants were more likely to respond with a know response than when it was a low expectancy item. There was no main effect of Self, $F(2, 108) = .27$, $MSE = .01$, $p > .05$ nor any interactions between Self and Contagion or Self and Expectancy, F 's < 2.5 , p 's $> .05$. There was also a marginal interaction between Contagion and Expectancy, $F(2, 108) = 3.64$, $MSE = .03$, $p = .059$. Follow up t-tests,

revealed that, for low expectancy items, participants were more likely to report know responses for contagion items relative to control items, $t(107) = 6.75, p < .00$. However, for high expectancy items, the difference in know responses for contagion and control items was only marginal, $t(107) = 1.88, p = .06$. My three way interaction was not significant, $F(2, 108) = .91, MSE = .02, p > .05$.

Correct Recall

Correct recall was measured by computing the proportion of correct items recalled by the participant. There were no significant differences for correct recall ($F(2, 108) = .83, p > .05$) between the three groups. Participants in the intrinsic, neutral, and achievement conditions recalled roughly the same proportion of correct items (see Table 10).

Table 10: Mean Proportion of Correct Recall as a Function of Intrinsic, Neutral, and Achievement Self (N=108). Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral	Achievement
Correct Recall	.34 (.05)	.33 (.07)	.32 (.06)

Extralist Intrusions

Extralist intrusions are defined as items that were not present in the scenes but were also not recalled by the confederate in the group recall task. Extralist intrusions were analyzed using an one-way ANOVA, $F(2, 108) = .66, p > .05$. There was no significant difference in guessing incorrect items between the three groups.

Table 11: Mean Extralist Intrusions as a Function of Intrinsic, Neutral, and Achievement Self (N=108). Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral	Achievement
Extralist	11.56 (4.39)	10.19 (5.59)	11.22 (5.60)

False Recognition

Findings for false recognition can be found in Table 12. False recognition was measured by looking at the false items the confederate had presented in group recall that were later falsely recognized by the participant as being in the scene or if they remember it from the scene and they remembered the other person saying it (Meade and Roediger, 2002). In regards to false recognition, I found a main effect of Contagion, $F(2, 108) = 53.2$, $MSE = .34$, $p < .05$. Participants were more likely to falsely recognize an item from the scene when the confederate had previously recalled it. There was also a main effect of Expectancy, $F(2, 108) = 154.13$, $MSE = .60$, $p < .05$. High expectancy items were more likely to be falsely recognized than low expectancy items. Importantly, there was also a main effect of Self, $F(2, 108) = 3.26$, $MSE = .06$, $p < .05$. Participants recognized more false items depending on what self condition they were in. The neutral group falsely recognized fewer words on average than did the achievement group, $t(70) = -2.40$, $p = .02$. For intrinsic and achievement self conditions there was no difference in false recognition between our self conditions, $t(70) = -.77$, $p > .05$. Likewise there was no difference between intrinsic and neutral self conditions for false recognition, $t(70) = 1.67$, $p > .05$. I did not find a significant interaction between Contagion and Self, $F(2, 108) = .72$, $MSE = .01$, $p > .05$. There was also no interaction between Expectancy and Self, F

(2, 108) = .1, $MSE = .01$, $p > .05$. I did find a significant interaction between Contagion and Expectancy, $F(2, 108) = 36.09$, $MSE = .26$, $p < .05$. Follow up t-test showed that high expectancy contagion items were more likely to be falsely recognized than high expectancy control items, $t(107) = 2.06$, $p = .04$. Likewise, a similar pattern was found for low expectancy contagion and control items, $t(107) = 8.63$, $p < .00$. My three-way interaction was not significant, $F(2, 108) = .31$, $MSE = .01$, $p > .05$.

Table 12: Mean Proportion of High and Low Expectancy Contagion and Control Items Falsely Recognized as a Function of Intrinsic, Neutral, or Achievement Self (N=108). Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral	Achievement
Contagion			
High	.75 (.30)	.65 (.34)	.80 (.29)
Low	.61 (.37)	.46 (.41)	.67 (.38)
Control			
High	.69 (.28)	.61 (.32)	.70 (.30)
Low	.24 (.28)	.19 (.26)	.28 (.26)

Correct Recognition

I ran a one-way ANOVA to test correct recognition. Correct recognition was defined as the proportion of items correctly recognized from the original six scenes. There were no significant difference in correct recognition between our self groups, $F(2, 108) = .66$, $p > .05$. The groups recognized a similar proportion of correct items regardless of self manipulation.

Manipulation Check

The results of my manipulation check can be seen in Table 13. The manipulation check was not significant, $F(2, 108) = 2.06, p > .05$. Participants did not differ in views of true self knowledge based on the essay prompts they were given. One possible explanation for this finding is that participants in all conditions were relatively high on measures of true self knowledge. Further, this finding is especially interesting given that we did find self differences on the memory tasks specifically in regards to remember judgments and false recognition. As I discussed in Experiment 1, it is possible that even though our manipulation failed (e.g., participants were no higher or lower on measures of true self after writing about intrinsic or achievement), there are still possible variations in self that might influence the data. As in Experiment 1, I ran correlations to see if there was an effect of contagion for individuals who reported high levels of true self regardless of my manipulation. There was a negative correlation for false recall high expectancy contagion/control items and self, $r(108) = -.23, p = .02$. This means that participants who had lower scores on the true self manipulation check (which indicate higher sense of true self) were more influenced by contagion for high expectancy contagion items. Contrary to our predictions, this analysis suggests that higher levels of true self were associated with higher levels of social contagion. This interpretation should be treated with caution however since this analysis was performed post-hoc. There was no significant correlation for low expectancy recall, $r(108) = -.03, p > .05$, high expectancy recognition, $r(108) = -.05, p > .05$, or low expectancy contagion, $r(108) = -.06, p > .05$.

Table 13: Mean Scores on the Manipulation Check and Subscales of the Final Authenticity Scale (N=108). The Scale Ranged from 1 – 7. Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral	Achievement
Manipulation Check	2.26 (1.14)	1.78 (.69)	2.18 (1.33)
Authentic Self	5.77 (.70)	5.91 (.81)	5.88 (1.01)
External Self	3.5 (1.12)	3.39 (1.25)	3.62 (1.29)
Self-Alienation	2.22 (1.15)	1.70 (.73)	2.10 (1.40)

Final Questionnaires

I broke the Final Authenticity Scale (Wood et al., 2008) into three subscales. My groups were not different from each other on the Authentic, $F(2, 108) = .26, p > .05$, Extrinsic, $F(2, 108) = .317, p > .05$, or Self-Alienation Subscales, $F(2, 108) = 2.09, p > .05$. The participants were also not different from each other in regards to Meaning in Life, $F(2, 108) = .55, p > .05$, Confidence in Memory, $F(2, 108) = .514, p > .05$, or Mindfulness, $F(2, 108) = .89, p > .05$. There were no significant differences in the questions in our metamemory questionnaire, all F 's < 1.83 , all p 's $> .165$.

Table 14: Mean Scores from Meaning in Life, Confidence in Memory, Mindfulness, and Self-Esteem (N=108). The Meaning in Life Scale Ranged from 1 – 7; The Confidence in Memory Scale Ranged from 1 - 5; The Mindfulness Scale Ranged from 1 – 4; The Self Esteem Scale Ranged from 1 – 5. Standard Deviations are Presented in Parentheses. Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral	Achievement
Meaning in Life	4.75 (.87)	4.85 (.92)	4.65 (.60)
Confidence in Memory	2.37 (.70)	2.52 (.73)	2.52 (.73)
Mindfulness	2.76 (.40)	2.69 (.39)	2.82 (.43)
Self-Esteem	3.67 (.63)	3.78 (.76)	3.75 (1.00)

Table 15: Mean Scores from the Metamemory Questionnaire (N=108). The Scale Ranged from 1 – 5. Standard Deviations are Presented in Parentheses.

	Intrinsic	Neutral	Achievement
Personal Remember Ability	3.00 (.83)	3.03 (.94)	2.97 (.65)
Partner Remember Ability	3.42 (.73)	3.64 (.87)	3.56 (.88)

Table 15 Continued

Confidence in Remembering Ability	3.56 (.84)	3.56 (.91)	3.44 (.91)
Confidence in Partner Remembering Ability	3.33 (.86)	3.25 (1.00)	3.39 (.96)
Rate for Memory Today	3.00 (.72)	3.11 (.78)	3.00 (.89)
Rate for Partner Memory Today	3.78 (.72)	3.75 (.65)	3.64 (.83)
Memory Accuracy	3.47 (.84)	3.36 (.96)	3.25 (.84)
Partner Memory Accuracy	3.61 (.73)	3.67 (.76)	3.67 (.72)
Helpfulness of Partner	3.83 (.88)	4.11 (.89)	4.22 (.90)
Help of Remembering with Others	4.28 (.70)	4.42 (.81)	4.53 (.77)

Discussion

In regards to recall, I found that our self conditions did not influence the magnitude of the contagion effect. I did find an effect of expectancy, meaning that in general high expectancy items were more likely to be recalled than low expectancy items. Participants were more likely to say they remembered or knew an item was present when it was a high expectancy item. In regards to recognition, participants were also more likely to falsely recognize a high expectancy contagion item than a low expectancy contagion item. Similar to recall, there were no differences for correct recognition. Importantly, I did not find a significant difference between our groups for either the manipulation check or any of the final questionnaires. This was the same result I found in Experiment 1. To follow up, I correlated our manipulation check to contagion in recall. I found a significant negative correlation between the social contagion effect for high expectancy items on recall and true self, implying that higher levels of true self may be correlated to higher levels of social contagion. However this finding should be treated with caution because it was performed post-hoc.

This lack of a difference in the manipulation check was counter to my hypothesis for Experiment 2. Because there was no difference between our self groups and scores on both the manipulation check and the self alienation subscale, it appears that this population may be inherently high on sense of true self. Adding the third self condition did help to drive apart some of the differences in memory, but did not separate the groups on the manipulation check like we initially thought it would.

General Discussion

Both of these studies successfully replicated the social contagion findings in previous research in regards to false memory (Meade & Roediger, 2002; Numbers et al., 2014; Roediger et al., 2001). In both studies, participants incorporated false suggestions from the confederate's memory into their own memory. Additionally, in Experiment 2 I replicated previous research regarding social contagion and high and low expectancy items (Roediger et al., 2001; Meade and Roediger, 2002; Huff et al., 2016). I found that on both recall and recognition, high expectancy contagion items were recalled and recognized more frequently than their low expectancy counterparts.

What made both of our studies distinct from previous research in social contagion was my focus on the potential role of individual characteristics, specifically true self, in influencing the magnitude of social contagion effects. The results from our studies yielded several interesting findings in regards to true self. Across both experiments, the intrinsic and neutral self manipulation did not influence the magnitude of the social contagion effect on recall. Participants were equally likely to incorporate these memory errors on the recall test regardless of which self condition they were assigned. This finding was surprising because previous literature on the true self demonstrated that participants high on true self are less likely to be influenced by other's responses (Arndt et al., 2002). However, previous literature on individual differences in social memory paradigms is mixed with several studies indicating that social memory effects are not predicted by individual differences (e.g., Davis & Meade, 2013). Thus, my findings are

broadly consistent with the broader literatures on individual differences in social memory paradigms.

Also important are the novel findings regarding remember/know judgments on the recall test. In Experiment 1 there were no differences between the neutral and intrinsic groups in regards to either remember or know judgments. However, in Experiment 2, I found different patterns of social contagion effects across the self conditions for high vs. low expectancy items. These discrepancies between my experiments can be attributable to changes between the studies. Adding high and low expectancy contagion items also helped to drive apart differences in remember judgments between Experiment 1 and 2, especially since I found differences between intrinsic and neutral conditions for low expectancy items. In Experiment 1, only high expectancy items were present for contagion and as such there were no differences between remember judgments and sense of self in Experiment 1.

The experiments also measured social contagion on recognition performance. Here I found different effects across experiments. In Experiment 1 there was no difference between our two self conditions in regards to false recognition. In Experiment 2 however, participants in the neutral condition falsely recognized fewer items on average as compared to the achievement group. As mentioned previously with remember judgments, adding high and low expectancy items as well as the achievement self condition can help to account for the differences between Experiment 1 and 2. By including low expectancy items I reduced the likelihood that an item would be falsely recognized because of participants expecting an item from being in a specific scene. By

adding the achievement condition, I was better able to tease apart the recognition between the self conditions.

Additionally, across both experiments, I found no significant difference in any of my final questionnaires, meaning that participants rated themselves similarly on measures of confidence, self-esteem, alienation, regardless of our manipulation. This was surprising considering that the essay prompts should have manipulated participants' sense of self. There was also a marginal difference in regards to confidence in partner memory in Experiment 1. This result did not replicate in Experiment 2 and, as such, I am also able to conclude that these groups do not differ in regards to metamemory.

When considering the results of the experiments reported here, it is especially important to discuss the manipulation check in Experiment 2. I had included the manipulation check in Experiment 2 to verify that the essay prompts had in fact changed participants' sense of self and that the change was present/evident immediately prior to the memory task. No differences in true self occurred on our manipulation check. The essay prompts used in the current study have effectively manipulated sense of self in other research (e.g., Arndt et al., 2002) and so I speculate that the failed manipulation in the current experiment was due to the population at MSU. Across both experiments, the participants tended to be high on sense of true self. It is quite possible that my sample might be naturally high on true self and, as such, they might be less affected by attempts to manipulate their sense of true self. This would be one possible explanation for why there were no differences in either our manipulation check for Experiment 2 or for the Intrinsic questionnaire in either experiment.

An additional explanation for the differences in results between our study and the Arndt et al. (2002) study is the differences between our paradigms. In the Arndt et al. (2002) study participants engaged in a normative influence/conformity task in which there was no inherently right or wrong answer in regards to whether or not the artwork was visually appealing. In my study, as well as in other social contagion studies, the effects of normative influence are present to a degree, although not nearly as much as is present in purely conformity research. This reduced normative influence in my study likely minimized any effects of true self on social contagion, especially since the evidence presented in Arndt et al. (2002) points to true self influencing conformity rather than memory change.

Nonetheless, the failed manipulation check in Experiment 2 presents challenges in interpreting the results of that experiment. As outlined above, we found differences in Remember judgements and false recognition. Specifically, in Experiment 2 we found different patterns of remember judgments across the self conditions for high vs. low expectancy items: for high expectancy items, there were differences in the remember judgments between contagion and control items for the intrinsic and achievement groups, but for low expectancy items, there were differences in remember judgments between contagion and control items for the intrinsic and neutral groups. Additionally, participants in the neutral condition falsely recognized fewer items on average as compared to the achievement group. However, with the failed manipulation check, these results may not be cleanly tied to my manipulation. To account for this, I did a correlation between the manipulation check and the levels of contagion that individuals

recalled. Higher levels of true self were correlated with higher levels of social contagion. Since this analysis was not part of our initial prediction, it should be interpreted with caution. My correlational analysis suggests that there may be preexisting differences in individual levels of true self that may be stronger than what can be manipulated with this measure. This correlation provides preliminary evidence that true self may be related to differences in performance on a social memory task, but additional research is needed to follow up this correlation.

Although my results were null, true self did have potential to describe memory differences through the source monitoring framework (Johnson et al., 1993). According to this framework, characteristics of an item are encoded along with the item which helps us in attributing it to an internal or external source. Each individual establishes a criterion for which to determine if the information came from a specific source using these characteristics. In this experiment I used either high expectancy items, Experiment 1, or high and low expectancy items, Experiment 2. These items were plausible for the scene and, as such, they could be attributed to either their own memory for being in the scene or to the other persons memory if they remembered hearing them say it. True self could have potentially affected both the criterion and the information encoded alongside the item. In regards to criterion, I initially thought that individuals high on true self would have a higher criterion for accepting information from external sources due to a focus on themselves and their own characteristics. In addition, it could also affect the encoding of the information from the confederate by remembering fewer of characteristics present when they recalled the item and thus making it seem less distinct. Future research is

necessary to further examine how/if individual differences in true self influence source monitoring mechanisms.

There are several implications for the findings present in this study. First, this study adds to a growing body of literature concerning social contagion and individual differences. Though it initially appeared as though individual views of true self might affect the magnitude of the contagion effect, this was not the case. Although in similar paradigms this may affect conformity (Plasencia et al., 2016), the effects of conformity do not contribute as much to a memory change paradigm like social contagion. Second, this study demonstrates that it can be difficult to change an individual's view of their true self, even temporarily. This supports previous definitions of true self (Johnson et al., 2004; Vess et al., 2014) as being a constant and immutable aspect of individuals. Future research on memory and true self should therefore closely examine how high or otherwise their population is on true self before attempting to experimentally manipulate it. Alternatively, future research might measure naturally occurring trait differences in true self (rather than try to manipulate it). Finally, this study shows that the effects of social contagion are robust in a variety of conditions. Contagion was found across a variety of self and expectancy conditions in both studies. This effect is difficult for individuals to reduce, even when they have been asked to focus on themselves and their own personal internal characteristics and accomplishments.

In conclusion, this study contributed valuable information about the relationship between true self and social contagion. While it seems that true self does not contribute an undue influence to this paradigm, there could very well be other individual

characteristics that better control for and manipulate the magnitude of the social contagion effect, so future research should focus on better determining how we can be affected or reduce false memory on the individual level.

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APPENDICES

APPENDIX A

EXPERIMENT 1

Essay Prompt Intrinsic

In the space below please write about one quality that reveals who you are as a person. Think of one unchanging, inner quality that clearly makes you feel good about yourself (e.g., values, hobbies, or core personality characteristics). Describe a time when you displayed this personal quality and how this quality reflects your true self.

Essay Prompt Neutral

In the space below, please write about something you did recently that was extremely ordinary. Think of something you did that made you feel neither good or bad about yourself but was just ordinary and monotonous (e.g., filing papers, watching television, or sitting through an ordinary lecture). Describe what you did and why this task was dull.

CONFEDERATE SCRIPTS

Condition 1

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Wrench (Hammer) Nails(Dust Mask) Washers (Saw) Screwdriver (Tool Belt)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Razor (Lotion) Towel (Hair Dryer) Deodorant (Mouthwash) Toothbrush (Washcloth)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Magnets (Toaster) Knives (Sponge) Kettle (stove) Blender (Frying Pan)
<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo (Alarm Clock) Bed (Slippers) Night Stand (Teddy Bear) Photo Frame (Dresser)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Skateboard (Helmet) Rubix Cube (Pants) Umbrella (Hangers) Dust Pan (Mittens)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Hole Punch(CD Disks) Headphones(Apple) Plant(Scissors) Wallet(Water Bottle)

Condition 2

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Wrench (Hammer) Nails(Dust Mask) Washers (Saw) Screwdriver (Tool Belt)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Razor (Lotion) Towel (Hair Dryer) Deodorant (Mouthwash) Toothbrush (Washcloth)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Corkscrew(Microwave) Magnets (Toaster) Kettle (stove) Dish Soap(Bread)
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<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo (Alarm Clock) Bed (Slippers) Night Stand (Teddy Bear) Photo Frame (Dresser)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Skateboard (Helmet) Rubix Cube (Pants) Umbrella (Hangers) Dust Pan (Mittens)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Headphones(Apple) Papers(Computer Mouse) Plant(Scissors) Pens(Keyboard)
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Condition 3

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Wrench (Hammer) Nails(Dust Mask) Washers (Saw) Screwdriver (Tool Belt)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Robe(Loofa) Razor (Lotion) Deodorant (Mouthwash) Hairspray(Pill Bottle)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Corkscrew(Microwave) Magnets (Toaster) Kettle (stove) Dish Soap(Bread)
<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo (Alarm Clock) Bed (Slippers) Night Stand (Teddy Bear) Photo Frame (Dresser)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Rubix Cube (Pants) Belt(Mop) Umbrella (Hangers) Shoes(Shoe Rack)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Headphones(Apple) Papers(Computer Mouse) Plant(Scissors) Pens(Keyboard)

Condition 4

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Crowbar(Hard Hat) Wrench (Hammer) Washers (Saw) Level(Pliers)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Robe(Loofa) Razor (Lotion) Deodorant (Mouthwash) Hairspray(Pill Bottle)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Corkscrew(Microwave) Magnets (Toaster) Kettle (stove) Dish Soap(Bread)
<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo(Alarm Clock) Lamp(Sheets) Bed (Poster) Pillow(Quilt)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Rubix Cube (Pants) Belt(Mop) Umbrella (Hangers) Shoes(Shoe Rack)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Headphones(Apple) Papers(Computer Mouse) Plant(Scissors) Pens(Keyboard)

Condition 5

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Crowbar(Hard Hat) Wrench (Hammer) Washers (Saw) Level(Pliers)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Robe(Loofa) Razor (Lotion) Deodorant (Mouthwash) Hairspray(Pill Bottle)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Magnets (Toaster) Knives(Sponges) Kettle (stove) Blender(Frying Pan)
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<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo(Alarm Clock) Lamp(Sheets) Bed (Poster) Pillow(Quilt)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Rubix Cube (Pants) Belt(Mop) Umbrella (Hangers) Shoes(Shoe Rack)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Hole Punch(CD Disks) Headphones(Apple) Plant(Scissors) Wallet(Water Bottle)
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Condition 6

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Crowbar(Hard Hat) Wrench (Hammer) Washers (Saw) Level(Pliers)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Razor (Lotion) Towel(Hair Dryer) Deodorant (Mouthwash) Toothbrush(Washcloth)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Magnets (Toaster) Knives(Sponges) Kettle (stove) Blender(Frying Pan)
<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo(Alarm Clock) Lamp(Sheets) Bed (Poster) Pillow(Quilt)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Skateboard(Helmet) Rubix Cube (Pants) Umbrella (Hangers) Dust Pan(Mittens)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Hole Punch(CD Disks) Headphones(Apple) Plant(Scissors) Wallet(Water Bottle)

Intrinsic Questionnaire

Enter the number in the space provided that most accurately describes how you feel about yourself. Please answer as truthfully as possible, and respond based on how you feel in general, most of the time.

1 2 3 4 5 6 7

Not at all true of me

Very true of me

- _____1. I think is better to be yourself, than to be popular.
- _____2. I don't know how I really feel inside.
- _____3. I am strongly influenced by the opinions of others.
- _____4. I usually do what other people tell me to do.
- _____5. I always feel the need to do what others expect me to do.
- _____6. Other people influence me greatly.
- _____7. I feel as if I don't know myself very well.
- _____8. I always stand by what I believe in.
- _____9. I am true to myself in most situations.
- _____10. I feel out of touch with the 'real me'.
- _____11. I live in accordance with my values and beliefs.
- _____12. I feel alienated from myself.

Meaning in Life Questionnaire

Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

Absolutely	Mostly	Somewhat	Can't Say	Somewhat	Mostly	Absolutely
Untrue	Untrue	Untrue	True or False	True	True	True
1	2	3	4	5	6	7

1. _____ I understand my life's meaning.
2. _____ I am looking for something that makes my life feel meaningful.
3. _____ I am always looking to find my life's purpose.
4. _____ My life has a clear sense of purpose.
5. _____ I have a good sense of what makes my life meaningful.
6. _____ I have discovered a satisfying life purpose.
7. _____ I am always searching for something that makes my life feel significant.
8. _____ I am seeking a purpose or mission for my life.
9. _____ My life has no clear purpose.
10. _____ I am searching for meaning in my life.

Confidence in General Memory

1. I have little confidence in my memory generally. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

2. I have doubts about my memory. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

3. I have a poor memory. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

4. I am never certain about my memory. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

5. I never do well at memory tests. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

6. I often feel that my memory misleads me. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

7. I have little confidence in my memory for actions. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

8. I often doubt my memory for having completed tasks. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

9. I have little confidence in my ability to remember how I performed on particular tasks. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

10. I have little confidence in my ability to remember what I did in particular situations. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

11. My memory can mislead me at times. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

12. I have little confidence in my memory for words and names. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

13. I often doubt my memory for having done things properly. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

14. I try so hard to remember things, that I end up forgetting everything. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

15. I have difficulty knowing if I have actually done something, or imagined it. (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

Metamemory Questionnaire

1. How confident were you in your own ability to remember the word lists presented in today's experiment? (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

2. How confident were you in your partner's ability to remember the word lists presented in today's experiment? (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

3. More generally, how confident are you in your own ability to remember? (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

4. More generally, how confident are you in your partner's ability to remember? (1-Not Very Confident to 5-Very Confident)

1 2 3 4 5

5. How accurate would you rate your own memory for the word lists presented in today's experiment? (1-Not Very Accurate to 5-Very Accurate)

1 2 3 4 5

6. How accurate would you rate your partner's memory for the word lists presented in today's experiment? (1-Not Very Accurate to 5-Very Accurate)

1 2 3 4 5

7. More generally, how accurate do you think your own memory is? (1-Not Very Accurate to 5-Very Accurate)

1 2 3 4 5

8. More generally, how accurate do you think your partner's memory is? (1-Not Very Accurate to 5-Very Accurate)

1 2 3 4 5

9. How helpful was it to work with your partner to remember word lists in today's experiment? (1-Very Unhelpful to 5-Very Helpful)

1 2 3 4 5

10. More generally, how helpful is it to remember with someone else? (1-Very Unhelpful to 5-Very Helpful)

1 2 3 4 5

Mindfulness

1. It is easy for me to concentrate on what I am doing.
2. I am preoccupied by the future.
3. I can tolerate emotional pain.
4. I can accept things I cannot change.
5. I can usually describe how I feel at the moment in considerable detail.
6. I am easily distracted.
7. I am preoccupied by the past.
8. It's easy for me to keep track of my thoughts and feelings.
9. I try to notice my thoughts without judging them.
10. I am able to accept the thoughts and feelings I have.
11. I am able to focus on the present moment.
12. I am able to pay close attention to one thing for a long period of time.

Response scale: 1 =*Rarely/Not at all*, 2 =*Sometimes*, 3 =*Often*, or 4 =*Almost always*.

APPENDIX B

EXPERIMENT 2

Essay Prompt Achievement

In the space below please write about one of your accomplishments or achievements. Think of something you have accomplished that clearly makes you feel good about yourself (e.g., getting the best grade in a difficult class or winning a special award). Describe what you achieved and how this accomplishment reflects your competence and success as a person.

Confederate Instructions

Condition 1

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Wrench (Hammer) Nails(Dust Mask) Washers (Saw) Hot glue gun(rubber band)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Razor (Lotion) Towel (Hair Dryer) Deodorant (Mouthwash) Nail Clippers(plunger)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Magnets (Toaster) Knives (Sponge) Kettle (stove) Napkins(blender)
<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo (Alarm Clock) Bed (Slippers) Night Stand (Teddy Bear) Photo Frame (Dresser)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Skateboard (Helmet) Rubix Cube (Pants) Umbrella (Hangers) Dust Pan (Mittens)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Hole Punch(CD Disks) Headphones(Apple) Plant(Scissors) Wallet(Water Bottle)

Condition 2

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Wrench (Hammer) Nails(Dust Mask) Washers (Saw) Hot glue gun(rubber band)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Razor (Lotion) Towel (Hair Dryer) Deodorant (Mouthwash) Nail Clippers(plunger)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Corkscrew(Microwave) Magnets (Toaster) Kettle (stove) Dish Soap(Bread)
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<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo (Alarm Clock) Bed (Slippers) Night Stand (Teddy Bear) Photo Frame (Dresser)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Skateboard (Helmet) Rubix Cube (Pants) Umbrella (Hangers) Dust Pan (Mittens)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Headphones(Apple) Papers(Computer Mouse) Plant(Scissors) Mouse Pad(camera)
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Condition 3

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Wrench (Hammer) Nails(Dust Mask) Washers (Saw) Hot glue gun(rubber band)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Robe(Loofa) Razor (Lotion) Deodorant (Mouthwash) Hairspray(Pill Bottle)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Corkscrew(Microwave) Magnets (Toaster) Kettle (stove) Dish Soap(Bread)
<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo (Alarm Clock) Bed (Slippers) Night Stand (Teddy Bear) Photo Frame (Dresser)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Rubix Cube (Pants) Belt(Mop) Umbrella (Hangers) Ski Goggles(garment bag)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Headphones(Apple) Papers(Computer Mouse) Plant(Scissors) Mouse Pad(camera)

Condition 4

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Crowbar(Hard Hat) Wrench (Hammer) Washers (Saw) Level(Pliers)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Robe(Loofa) Razor (Lotion) Deodorant (Mouthwash) Hairspray(Pill Bottle)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Corkscrew(Microwave) Magnets (Toaster) Kettle (stove) Dish Soap(Bread)
<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo(Alarm Clock) Lamp(Sheets) Bed (Poster) Quilt(movies)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Rubix Cube (Pants) Belt(Mop) Umbrella (Hangers) Ski goggles(garment bag)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Headphones(Apple) Papers(Computer Mouse) Plant(Scissors) Mouse Pad(camera)

Condition 5

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Crowbar(Hard Hat) Wrench (Hammer) Washers (Saw) Level(Pliers)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Robe(Loofa) Razor (Lotion) Deodorant (Mouthwash) Hairspray(Pill Bottle)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Magnets (Toaster) Knives(Sponges) Kettle (stove) Napkins(blender)
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<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo(Alarm Clock) Lamp(Sheets) Bed (Poster) Quilt(movies)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Rubix Cube (Pants) Belt(Mop) Umbrella (Hangers) Ski goggles(garment bag)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Hole Punch(CD Disks) Headphones(Apple) Plant(Scissors) Wallet(Water Bottle)
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Condition 6

<u>Toolbox</u> Bolts(flashlight) Extension cord (tool box) Crowbar(Hard Hat) Wrench (Hammer) Washers (Saw) Level(Pliers)	<u>Bathroom</u> Shampoo (Tissues) Toothpaste (sink) Razor (Lotion) Towel(Hair Dryer) Deodorant (Mouthwash) Nail Clippers(plunger)	<u>Kitchen</u> Coffee maker (Bananas) Bowls (Cookbooks) Magnets (Toaster) Knives(Sponges) Kettle (stove) Napkins(blender)
<u>Bedroom</u> Curtains (nail polish) Necklace (Poster) Yo-Yo(Alarm Clock) Lamp(Sheets) Bed (Poster) Quilt(movies)	<u>Closet</u> Backpack (Broom) Dog Leash (Hat) Skateboard(Helmet) Rubix Cube (Pants) Umbrella (Hangers) Dust Pan(Mittens)	<u>Desk</u> Books (Chair) Laptop(Paper Clips) Hole Punch(CD Disks) Headphones(Apple) Plant(Scissors) Wallet(Water Bottle)

Manipulation Check

Enter the number in the space provided that most accurately describes how you feel about yourself. Please answer as truthfully as possible, and respond based on how you feel currently.

1 2 3 4 5 6 7

Not at all true of me

Very true of me

___1. I don't know how I really feel inside.

___2. I feel as if I don't know myself very well.

___3. I feel out of touch with the 'real me'.

___4. I feel alienated from myself.

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