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Self-expansion and self-concept clarity: The effect of expanding and rediscovery activities on perceptions of the self and relationships

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Abstract of the Dissertation

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Self-expansion is theorized to be a fundamental motivation for individuals to add to their abilities, perspectives, and identities. Rapidly self-expanding experiences (like falling in love) satisfy this motivation at a fast rate, and are particularly satisfying. However, novel and challenging activities mirror the experience of the rapid expansion, whether they are actually expanding or not, and thus are theorized to be experienced as if they are self-expanding (and thus rewarding). The influence of such activities on one's self-concept clarity (how clearly and confidently defined one's self-concept is) has not been previously examined, which limits our understanding of how diverse experiences affect clarity of our self-conceptualizations. Further, another common kind of life activity, rediscovery activities (activities once experienced as enjoyable but that have not been carried out for a long time) have also not been examined for their effect on self-concept clarity, nor for their role in the self-expansion process. This dissertation reports two experiments designed to advance our understanding by examining how the self-expansion process influences changes in self-concept clarity through actual engagement in or through writing about experiences of expanding, rediscovery, or control activities. Results indicated that after participating in activities, expansion led to significantly less self-concept clarity. After writing about activities with one's romantic relationship partner, rediscovery led to significantly greater self-concept clarity. An additional outcome included higher inclusion of the other in one's self after writing about a rediscovery experience with one's closest other. These results help clarify the effect of expansion and rediscovery experiences on self-concept clarity and deepen our understanding of the self-expansion process.

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Introduction

Self-concept clarity, the extent to which one's self-concept is clearly and confidently defined, is an individual difference central to perceptions of the self (Campbell et al., 1996). It facilitates the processing of self-relevant information, helping one focus on qualities that are true of the self. It guides behavior and goal-attainment by providing a stable self-definition which leads to consistency in actions (Campbell & Lavelle, 1993). Further, it contributes to self-esteem by providing knowledge and emphasis of positive qualities (Campbell, Assanand, & DiPaula, 2003). The knowledge of positive qualities (to the extent it is accurate) allows an individual to place his or her self in situations to maximize these attributes, thus clarity is also relevant to the behavioral manifestation of self-esteem.

Due to the apparent importance of self-concept clarity to such processes, researchers have sought to develop methods of increasing clarity, both to permit experimentally controlled manipulations and for potential practical application. Most of these methods are laboratory based manipulations (e.g., Csank & Conway, 2004) which, accordingly, have minimal ecological validity. The extent to which self-concept clarity may change given real life events has yet to be investigated. Further, mechanisms that may be essential to the operation of clarity, such as components of the self-concept and self-esteem, are yet to be explored in real world settings. Thus, examining clarity in situations where an individual is likely to reflect on, reaffirm, evaluate, and even change the self would be an important platform to study these processes. For these reasons, self-expanding activities would seem to be a particularly valuable context for assessing self-concept clarity change and the mechanisms and limiting and facilitating conditions by which this change occurs.

Activities likely to be experienced as rapidly self-expanding have previously been operationalized as those that contain novelty and challenge, and their effect on the self-concept has been evidenced by an increase in self-concept content and domains, self-esteem, and self-efficacy (Aron, Paris & Aron, 1995) suggesting their benefit to the self. The exploration of different types of activities, such as those that promote rediscovery of the self, are also likely to influence these variables, however past research has not included them within the definition of self-expanding activities (or investigated such activities in any other context).

Using self-expansion as a platform to study self-concept clarity can first help advance the understanding of the extent that, and ways that, clarity may be affected by real world events.

Second, the contrast between expanding and rediscovery activities can help determine how much clarity is driven by experiences that change and create new, previously unknown aspects of the self (i.e., expansion) and those that reaffirm the self, reminding it of already known characteristics (i.e., rediscovery). Third, mechanisms in the self-expansion process, such as changes in self-concept (i.e., content and domain) and self-esteem, can be explored as potential influences on the change in self-concept clarity. Broadly, both factors in the self-expansion process (i.e., expansion and rediscovery) and mechanisms of self-concept clarity change can be examined.

The following sections of this introduction briefly review the relevant literature on self-concept clarity and self-expansion; it will highlight potential differences in expanding and rediscovery activities and how these types of activities, in connection with self-concept clarity, can answer previously unexamined questions about their processes. It will also discuss potential influencing factors in the expansion/clarity relationship. Finally, it will provide an overview of the current set of studies and specific hypotheses to be tested.

Self-Concept Clarity

The self has been a topic of longstanding interest to researchers in psychology, as it is a fundamental entity central to every human endeavor (James, 1890). The study of the self divides into two overarching fields; contents of the self and the structure of the self. Contents of the self refer to perceptions of who one is, including both knowledge (i.e., who and what someone believes one is) and evaluations (i.e., how one feels about one's self-beliefs). Structure of the self refers to the organization of self-beliefs across different domains (Showers, Abramson, & Hogan, 1998) and the processing of self-relevant information (Kihlstrom & Cantor, 1984). One construct representing a structural aspect of the self, self-concept clarity, has been investigated by researchers interested in how clearly and confidently individuals hold their self-beliefs (Campbell et al., 1996).

Self-concept clarity, first defined by Campbell (1990) and operationalized as a 20-item scale by Campbell, Katz, Lavalley, & Trapnell (1991) can be considered how clearly, confidently defined, internally consistent, and temporally stable one's self-concept is. Most often self-concept clarity is measured with the revised 12-item, one factor scale developed by Campbell and colleagues (1996) with higher scores indicating higher clarity. This scale has high internal consistency, with alphas ranging from .85 to .89 across four different samples, and a test-retest

reliability of $r = .75$ across 2 weeks (Campbell et al., 1996). Example items from the scale include, “My beliefs about myself often conflict with one another” (reverse scored) and “In general I have a clear sense of who and what I am.” The 12-item scale has been validated by other measurements of clarity such as consistent decision making on trait ratings. For example, those with high self-concept clarity are less likely to change their self-descriptions over time (Campbell et al., 2003; Campbell et al., 1996). They also exhibit faster reaction times when being asked to decide if previously rated traits are true or not true of them (Campbell et al., 1996). In addition, they are less likely to concurrently endorse mutually exclusive traits, such as careless and careful (Campbell et al., 1996).

In general, it seems as though self-concept clarity is a desirable attribute, as it is connected to many positive outcomes. Most prominently, research has shown a strong relationship with self-esteem (Baumgardner, 1990; Bigler, Neimeyer & Brown, 2001; Campbell et al., 2003; Campbell et al., 1996; Campbell & Lavalley, 1993). Indeed, in a recent meta-analysis the aggregate effect size between the two variables was $r = .59, p < .001$ (Nardone, Moyer & Aron, 2011). In addition to self-esteem, self-concept clarity is associated with several positive benefits for an individual, such as greater psychological adjustment (Bigler et al., 2001). In addition Campbell et al. (1996) found a positive association of self-concept clarity with agreeableness and conscientiousness, and a negative association with depression, anxiety, neuroticism and rumination (Campbell et al., 1996).

Self-concept clarity is also connected to positive methods of coping and handling stressful situations. Individuals high in self-concept clarity are more likely to select active coping styles in times of stress, such as planning and taking action, as opposed to passive coping styles, such as denial (Smith, Wethington, & Zahn, 1996). Self-concept clarity is connected to less frequency of social comparison (Butzer & Kuiper, 2006). In addition, those high in self-concept clarity experience less negative emotion and aggression when undergoing stressful and specifically ego-threatening situations (Stucke & Sporer, 2002).

The connection of self-concept clarity to these benefits may be because of its value as a functional component in many psychological processes. Before turning to these values and the potential importance of clarity, it is necessary to consider self-concept clarity’s relation to accuracy of self-knowledge. Accuracy of self-knowledge is an important facet in an individual’s

global functioning. Specifically, the knowledge of one's strengths and weaknesses facilitates behaving in a strategic manner to maximize one's overall potential (Vogt & Colvin, 2005).

In general, self-concept clarity appears to be associated with greater objective accuracy of self-knowledge. The original theorists, Campbell and colleagues (1996), noted that a clear and consistent perception of one's self does not necessarily indicate an accurate self-concept. Indeed, individuals could be confident that they possess certain qualities and behave in a certain manner, yet that perception may not align with how they actually are. However, theorists argued that clarity and accuracy are most likely positively correlated with one another. (This seems likely because clarity and accuracy may have a cyclical relationship such that the clearer you are in your self-concept, the more you behave in a consistent manner, such characteristics are reinforced through feedback from your environment and this further enhances your clarity). Indeed, recent data support there being a positive association of self-concept clarity and accuracy. In a series of studies by Lewandowski and Nardone (2012), accuracy of self-knowledge, operationalized as self-other agreement on personality traits and greater congruence between predicted and actual performance on tasks, was positively associated with self-concept clarity.

Turning to the functions and value of self-concept clarity, its importance would seem to be in its connection to the processing of self-relevant information, the shaping of behavior, and facilitation of self-esteem. First, self-concept clarity helps individuals process information about their self through the navigation of social cues in their environment. On a daily basis, individuals face positive and negative social cues throughout interactions with others. It is maladaptive to pay attention to all of them, especially if some are negative or not relevant to the self. Those with high self-concept clarity tend to be better at selectively attending to information that reflects positive and relevant aspects of their self because clarity provides individuals with a consistent foundation for what they perceive to be true or not true of them (Campbell et al., 1996; Campbell & Lavalley, 1993). When provided with information from their environment, those with high clarity are better at identifying and accepting information that matches their self-concept. For example, in Campbell et al. (1996) participants with high clarity were faster at deciding if a given trait was true of them.

Second, self-concept clarity is an important mechanism in shaping behavior because it provides a stable definition of the self, giving one confidence in what one's good and bad qualities are (Campbell & Lavalley, 1993). One of the ways this affects behavior is through the

attainment of self-relevant goals. To the extent people are certain and clear of their self, they are more likely to use the self to guide decisions and select environmental situations that provide a good match to their personal goals (Setterlund & Niedenthal, 1993). For example, if one holds clarity and consistency that he or she enjoys working closely with people, perhaps this characteristic will be used to guide a career decision, knowing that being a physician or counselor would be a better match for the self than an engineer or bookkeeper. In Setterlund and Niedenthal (1993) this process was investigated in the context of consumer behavior, specifically one's preference for type of automobile. Individuals with higher clarity were better at matching their personality and life goals with the type of automobile they wanted to drive, as compared with those with low clarity. For example, individuals with high clarity, who identified themselves as adventurous and thrifty, were more likely to select an automobile that matched these descriptions, such as a Chevrolet Pickup. Those with low clarity were significantly less successful in selecting a car that provided a good match.

This function of self-concept clarity can also apply to one's behavior in social interactions. By having a clear conceptualization of the self and greater awareness of positive qualities (Campbell et al., 2003) one may be better able to select situations in which one's positive aspects are exhibited. For example, if one is clear and confident that he or she has a good sense of humor, he or she may choose social situations in which joking and laughter are encouraged. In this way, known aspects of the self can be used to shape behavior and interactions. Although research has not directly supported this point, it is likely that those with higher clarity navigate socially in a manner to provide themselves with ego bolstering.

Because of these two characteristics of self-concept clarity (i.e., selective attention to self-relevant feedback and behavioral manifestation of self-characteristics), it is an important mechanism in facilitating self-esteem. Those with high clarity in their self-concept pay more attention to their competent self-aspects as opposed to those with low clarity (Campbell et al., 2003; Sande, Goethals, & Radloff, 1988). In Campbell et al. (2003) clarity was positively associated with longer descriptions provided of one's positive (as opposed to negative) qualities demonstrating that higher clarity is related to more reflection on ego-boosting qualities. Therefore it is likely that those with higher clarity are reminded more of their positive self-aspects and thus have higher self-esteem. It is not that those with high clarity are inattentive to their negative self-aspects, but they tend to place greater emphasis and importance on their

positive qualities (Campbell & Fehr, 1990; Gurung, Sarason & Sarason, 2001). In Gurung et al. (2001) participants were given a list of potential attributes (both positive and negative) and asked to decide if (a) those attributes were true of them and (b) how important they felt those attributes were to their sense of self. Those with high self-concept clarity were more likely to say that positive qualities were of greater importance than negative qualities.

In addition, those with high clarity will accept positive feedback from others, boosting their self-esteem, more readily than those with low clarity, who are overall unsure of what may be positive about their self (Campbell, 1990; Campbell et al., 1996; Campbell & Lavelle, 1993). For example, in Campbell (1990) when presented with feedback about the self, individuals high in self-concept clarity were more likely to demonstrate signs of cognitive acceptance, such as perceived accuracy of the feedback, compared with those low in clarity. It is also possible that those with higher clarity are more likely to interpret ambiguous situations and feedback as positive over negative, however this has not been explored in research to date.

Regarding the behavioral function of self-concept clarity in facilitating self-esteem, a clear sense of self may allow individuals to select situations that maximize the expression of their positive qualities. Thus those with high clarity may place themselves in situations where they consistently express their positive qualities. Research should explore this possibility as a reason why self-concept clarity is an important component in the self-esteem process.

Given the function of self-concept clarity for the processing of self-information, the shaping of behavior, and the facilitation of self-esteem, it seems important, for advancing both the theoretical understanding and potential application, to examine situations in which it can be enhanced and ways that it may be undermined. Theoretically, this can further our understanding of what the construct is, and practically, it can help us understand the ways in which it operates in everyday life. One potential situation for examining changes in self-concept clarity is through considering real world events in which the self potentially grows, is redefined or reaffirmed; however this type of investigation is strikingly lacking in the literature.

Some prior studies attempted to enhance self-concept clarity through laboratory manipulations. In Csank and Conway (2004), participants engaged in either a trait-based reflection task or in a control condition in which they read a magazine. Participants in the trait-reflection task rated themselves on a list of traits and then responded to a series of six questions about those traits. Some questions included “Why do I think I have this characteristic?” “Why do

I see myself this way?” and “In what ways might people notice this about me?” Significant effects were found such that after completing the reflection task, participants reported higher self-concept clarity. This study demonstrated that focusing on self-characteristics influences clarity. It is important to note is that this significant effect was only found for the women in the sample. Therefore, research should be sensitive to possible gender differences in clarity manipulations.

Other methods include having participants write about self-relevant characteristics and how they relate to behavior (Lewandowski, Nardone, & Raines, 2010; Settlerlund & Neidenthal, 1993). For example, in Lewandowski et al. (2010) participants rated themselves on a list of personality characteristics. They were then divided into two groups representing two types of self-concept clarity manipulations (a clarity condition and a confusion condition). In the self-concept clarity condition, participants were instructed to describe situations in which they behaved in ways that expressed three characteristics previously rated as very true of them. In the self-concept confusion condition, they were asked to describe situations in which they behaved in ways that expressed three characteristics previously rated as not true of them. This method not only significantly increased participants’ self-concept clarity (i.e., in the self-concept clarity condition) it also significantly increased other variables such as perceived satisfaction in their relationships. This study demonstrated that not only does a clarity manipulation affect thoughts about the self, but perceptions of others as well.

There is surprisingly little known about how self-concept clarity may change outside of laboratory manipulations. Indeed, as noted by Wu and Watkins (2009) when discussing the manipulation of self-concept clarity, “It is still unclear how far findings in these experimental conditions can be generalized to natural settings” (p. 95). This information is lacking, although it seems as though this is a process that continually occurs; individuals participate in real world experiences and their perceptions of their self changes.

It is unclear how self-concept clarity operates as the self is exposed to experiences. Scenarios can be suggested in which it may increase or decrease. As self-concept clarity is associated with greater acceptance of self-relevant characteristics (Campbell & Lavalley, 1993), it seems likely that through a real world experience individuals would be reminded of their known characteristics and their sense of clarity would be enhanced. However, this may be contingent on the type of experience. If it is an experience that forces the self to consider new,

previously undiscovered characteristics, clarity may decrease due to the need to integrate information into the self-concept. One domain on which to study these possibilities is self-expansion.

Self-Expansion

Self-expansion can be defined as a primary, evolution-based motivation to increase one's ability to accomplish goals, which is expressed in humans as a drive to add to the self's capabilities, perspectives, and identities (e.g., to enhance potential self-efficacy; Aron & Aron, 1997). A central context for the operation of self-expansion, and one of the contexts that has been most studied to date, is the formation and maintenance of close relationships. Relationships are hypothesized to enhance one's self by "including the other in the self" — experiencing to some extent as one's own the other's perspectives, characteristics, identities, knowledge, and resources (Aron, Aron, Tudor, & Nelson, 1991; for a review see Aron, Mashek, & Aron, 2004).

Because beginning a romantic relationship is often a fast experience, it is hypothesized to involve rapidly including the partner in the self. Thus, rapid self-expansion — like satisfying any motivation at a fast rate, leads to high levels of aroused positive affect. That is, this is an especially exhilarating type of expanding experience. Other types of rapid expansion may include experiences such as getting a promotion, or learning something that provides a dramatic new insight. These types of experiences expand the self by adding to the self's capabilities. Rapid self-expansion through forming a romantic relationship is associated with benefits for the self, including increased self-esteem and self-efficacy (Aron et al., 1995). In addition, forming a romantic relationship has been associated with change in the self-concept, specifically how many characteristics and domains of the self an individual will list when asked the question, "Who are you today?" (Aron et al., 1995).

Other activities that create similar (although perhaps not as intense) feelings of excitement as relationship formation investigated in the literature include activities that individuals complete with a romantic partner that are novel and challenging. Partners doing things together, such as going to a new travel destination or taking a tennis lesson for the first time, mirror to some extent the excitement of rapidly fulfilling the primary self-expansion motivation and are associated with greater closeness and satisfaction in the relationship (Aron, Norman, Aron, McKenna, & Heyman, 2000; Graham, 2008; Reissman, Aron & Bergen, 1993; Tsapelas, Aron, & Orbuch, 2009).

How novel and challenging activities operate within the context of relationships has been well studied (Aron et al., 2000; Graham, 2008; Reissman et al., 1993). Components of self-expanding activities were originally considered to include interest, engagement, success, accomplishment, and reward (Aron et al., 2000). Later, novelty and challenge were isolated as key variables in the expansion process when partners were participating in the activities together (Lewandowski & Aron, 2004).

Less is known about how the expansion process occurs on an individual level, although, researchers have called for more attention to be given to the topic of individual expansion (e.g., Graham, 2008). For example, as self-expansion is a motivation for entering and maintaining close relationships, it is likely that it is also a motivation for other achievements in life. Getting a college degree, travelling to a new place, or developing a hobby are self-expanding activities that one can complete outside of a relationship, which also benefit the self. Indeed, these types of novel and challenging activities most likely increase self-esteem and components of the self-concept (i.e., content and domains) even if one completes them without a romantic partner. Recent work demonstrates that expansion is strongly related to approach motivation (Mattingly, McIntyre & Lewandowski, in press). Like self-expansion, approach motivation is considered to be a fundamental human process; thus, this connection supports the basic idea as the self-expansion model was originally hypothesized (Aron & Aron, 1997) that expansion applies to functions more broadly than just in the relationship context.

Expansion and Rediscovery Activities

In past research, the categorization of self-expanding activities has primarily emphasized novelty and challenge (Lewandowski & Aron, 2004). However, this seems to restrict the self-expansion process, as it is likely that activities can be self-expanding (although not necessarily rapidly) even if they are not particularly novel and challenging. For example, participating in activities that reaffirm or rediscover the self, such as engaging in a familiar hobby, may support individuals drawing on known aspects of the self and enhance competence in those areas. Indeed, it is possible that this is one of the most common types of activities experienced by individuals. People may be more likely, both alone and with a romantic relationship partner, to engage in familiar activities such as taking a favorite exercise class or returning to a travel destination, as opposed to engaging in something purely novel. However, rediscovery activities have not yet been explored as part of the self-expansion process.

Is Rediscovery Expansion?

From the perspective of the self-expansion model, an interesting set of theoretical issues include the extent to which, and the processes through which, rediscovery activities affect the self and one's perception of the self. It seems as though this would be important in understanding the categorization of rediscovery in the expansion process. As expanding activities increase positive evaluations of the self (i.e., esteem) and descriptions of the self (i.e., self-concept content and domain), it would be valuable to examine whether rediscovery activities have a similar effect.

One potential highly relevant difference between rediscovery and novel/challenging experiences may be that there is less risk involved in engaging in a rediscovery activity. One has already had a trial run and knows whether or not the activity is something he or she can efficaciously accomplish and feel positively doing so. However, for a rediscovery activity to fulfill the self-expansion motivation to add to the self, it would seem to need to be an activity that one can learn from by repeating it. For example, if one has taken an art class in the past and knows that competence was exhibited in completing the assignments and enjoyment felt while doing so, returning to this activity may be more likely. For the purposes of self-expansion, taking another art class (as a rediscovery activity) will expose one to new domains of learning. Perhaps a different artistic technique or method will be introduced. Also, another class will build on past assignments and skills, being more advanced than the first class taken.

In contrast, if this person decided to instead take a music class for the first time, this would represent a more purely novel and challenging experience. Since a first music class cannot be taken twice, this is an experience that is expanding because it is completely unknown—more arousing and exciting than something already practiced and experienced. However, it also represents a domain of risk as one has no concrete evidence about whether one will be good at the activity or even enjoy it. It is important to note that in either case (rediscovery or expansion) an individual might not enjoy the experience. One could expand and take one's first music class and dislike it. Similarly, a seasoned musician could rediscover, returning to his or her instrument and decide that playing it was no longer an enjoyable activity. Although both types of activities could be disliked, it seems likely that there is a greater risk of this occurring in an expanding activity.

One potential contrast between rediscovery and expanding activities is their effects on self-content. Previous research supports the idea that self-expansion not only increases one's quantity of self-content, but also domains of self-content (Aron et al., 1995). Perhaps this is because expanding experiences offer an opportunity to add completely new additions to the self-concept. For example, if one goes rock climbing for the first time, possible descriptions such as "rock climber," "adventurous," "willing to try new things," "not afraid of heights," and numerous other things associated with the experience may be added. These new self-descriptions, combined with previously known aspects of the self, may enrich the self-content by adding both more content and more domains.

How rediscovery activities influence the self-concept is an interesting question. In contrast to an expanding activity, a rediscovery activity may not be as influential to the domains of the self-concept as it reminds the self of things already known, not necessarily adding something new. In essence, rediscovery may help increase the quantity of an individual's self-concept, while expansion may have more influence on the diversity of domains of the self-concept. For example, in the case of the artist, in the setting of the art class he or she will be reminded of this identity and all of the characteristics and abilities that go along with it (e.g., an artist, painter, sculptor, observant, creative). These are things that the artist is already aware of, therefore the domains of the self-concept may not increase. However, the rediscovery activity may heighten awareness of the characteristics, and lead him or her to be more specific and thus more numerous in self-descriptions. Thus, it is likely that expanding activities relate to greater breadth of experience, while rediscovery activities contribute more to the depth of experience; breadth of experience relating to greater diversity of domains of the self-concept, depth influencing quantity and richness of the content within existing domains of the self-concept.

Another potential contrast between rediscovery and expanding activities is that when successful, self-expanding activities may create more self-liking or self-esteem than rediscovery activities. This seems possible because of the unknown quality of an expanding activity. At first one is not sure if one will accomplish the activity with competence, so when completed it is an exciting achievement. One can now boast that one has finished and is good at a new, previously unknown domain. This adds a new positive quality to the self, whereas in a rediscovery activity this effect is lessened. For example, in the case of the artist, the artist knows that he or she is a

good artist before completing an additional class (the rediscovery activity), therefore the artist's self-esteem may not be greatly enhanced.

However this association could be argued in the converse manner. It is possible that self-esteem increases more in a rediscovery activity, because as one continually engages in the activity one conquers more advanced components. Therefore, as one observes the depth of accomplishment, one's self-esteem is enhanced. It is also possible that a rediscovery activity, because it is familiar and safe, creates a sense of overall calm positive affect that is then attributed to the self. A purely novel and challenging activity may facilitate more aroused and excited positive emotion that may be less likely to be attributed to the self, but rather to the experience. Therefore, not only self-esteem but differences in affective experiences should be examined in rediscovery and expanding activities. It is also important to note that these changes in self-esteem may be highly influenced by whether or not the activity is successfully engaged in. Unsuccessful participation is likely to lead to less self-esteem in both scenarios (i.e., rediscovery and expansion).

Understanding these similarities and differences in rediscovery and expansion may help illuminate if rediscovery should be considered as an alternate to expansion or part of the expansion process. For purposes of this dissertation, rediscovery activities will be considered as part of the expansion process and a type of expanding activity. Throughout the following sections of this dissertation, self-expanding activities will be referred to in two categories (i.e., rediscovery and expansion). However, it is important to note that this is a categorization that should be further examined empirically.

Connection of Self-Expansion with Self-Concept Clarity

Examining differences in rediscovery and expanding activities will further our understanding of the effects of different types of experiences, specifically whether and how they differentially affect components of the self such as self-concept domains and self-esteem. Further, exploring self-expanding activities (both rediscovery and expansion) would seem to be a particularly valuable context for advancing understanding of self-concept clarity. First, it allows us to examine the process of clarity in real world events, promoting the ecological validity of the mechanisms under examination. Research has manipulated clarity through artificial laboratory situations (e.g., Csank & Conway, 2004; Lewandowski & Nardone, 2011); however, these techniques have all included writing manipulations in which participants' engaged in self-

reflection about relevant/non-relevant characteristics. Even if conducted in a laboratory setting, self-reflection is an ecologically valid method of developing clarity, because individuals engage in introspection throughout their daily lives. However, self-reflection is likely not the only method (or most common method) of developing and bolstering clarity in everyday life. Participating in life activities give individuals a wealth of knowledge about their characteristics, behaviors, preferences, and it seems as though this would influence clarity as well as self-reflection. Self-expanding activities offer the platform to examine this potential method of increasing clarity. It should also be mentioned that engaging in activities is likely a different process from retrospectively reflecting (through writing or introspection) on activity participation. However, in the context of increasing self-concept clarity, these different methods have not been contrasted.

Second, it gives us an understanding of certain processes at work in the changes in self-concept clarity. For example, does clarity increase because the self is doing something familiar and known (i.e., rediscovery), as opposed to new and unknown (i.e., expansion)? Third, the mechanisms of self-concept clarity change can be further examined through the investigation of potential moderator and mediator variables.

Moderators and Mediators

One potential mediator variable in the effect of type of expanding activity on self-concept clarity is change in self-content domains. By examining this variable it can be determined how much self-concept clarity is driven by having experiences that create new self-descriptions (i.e., expansion) and potentially add more content and domains to the self-concept. In contrast, self-concept clarity may be driven by experiences that reaffirm specific characteristics (i.e., rediscovery) and potentially add more content but not domains to the self. For example, perhaps expansion increases both self-concept content and self-concept domains, and this creates a decrease in clarity because of all of the new information that must be integrated into the self. In contrast, rediscovery reaffirms the self of known characteristics, leading to more specific and copious content, however not more self-content domains. This may create higher self-concept clarity because the self is being reminded of previous, certain aspects and not needing to incorporate new ones.

Another possible mediator in the effect of activity type on self-concept clarity is change in self-esteem, especially given the strong association between self-esteem and self-concept

clarity (e.g., Nardone et al., 2011). It is possible that the activity that creates more self-esteem is associated with higher self-concept clarity; individuals feel positively and thus become clearer in their self-concept. Perhaps one of the connections between clarity and esteem is that individuals want to repeat feeling positively, so they integrate and solidify the characteristics involved in the positive experience, giving them higher self-concept clarity. By examining this mediator variable, it can be determined how much self-esteem can explain the relationship between type of activity and self-concept clarity, and if it is a mechanism part of self-concept clarity change.

Given the potential of change in self-esteem operating as a mediator variable, a related variable that would also seem to be a potential mediator is change in global positive affect. As previously mentioned, it is possible that expanding activities, as compared with rediscovery, may create more positive/aroused emotion, due to the novelty and challenge of the experience. In contrast, rediscovery may elicit feelings of positive/calm emotion. In situations in which positive/aroused emotions are elicited, an individual may be less likely to focus on the self, but rather attend to the experience. This could explain differences in change of self-concept clarity. Thus, this arousal-calm dimension of emotion as described by Mayer, Salovey, Gomberg-Kaufman, and Blainey (1991) may explain the relationship between the type of expanding experience and changes in self-concept clarity.

Similar to the emotional experience, it is possible that participants enjoy one type of activity more than the other. As previously noted, self-expanding activities carry more risk than rediscovery activities and their success may hinge on participants' competence in completing them. If the activity is not successful, it is likely that participants did not enjoy it. If participants did not enjoy the activity they may not have engaged the self or reflected on self-characteristics. This may create less change in their self-concept clarity. For this reason, enjoyableness of activity was also examined as a possible mediator of the effect of activity type on self-concept clarity.

Another potential variable at play in the self-concept clarity/self-expansion relationship is an individual difference related to sensitivity in the processing of environmental stimuli, "sensory processing sensitivity" (Aron & Aron, 1997; Aron, Aron & Jagiellowicz, in press). This trait may influence how strongly self-concept clarity and type of activity are related to one another. For example, if individuals are high on sensitivity and awareness of their environment, this characteristic may interfere with them benefiting from purely novel self-expanding activities,

because they experience them as being too overwhelming. Similarly, those high on sensory processing sensitivity may benefit more from rediscovery activities because they are aware of more subtleties in the experience. Indeed, sensory processing sensitivity is connected to greater detection of minor changes in the environment (Jagiellowicz et al., 2011). Therefore the effect of activity type on self-concept clarity may be moderated by sensory processing sensitivity. It is important to note that due to the typically strong relationship of the standard measure of sensory processing sensitivity with neuroticism (e.g., $r = .41$; Aron & Aron, 1997), following standard practice for research with this measure, all analyses involving sensory processing sensitivity will control for neuroticism.

Additional Components

Novel and challenging activities have primarily been examined in the context of close relationships, but there has not been any previous research on rediscovery activities in the context of relationships. For individuals not in a current romantic relationship, rediscovery and expanding activities are most likely carried out with one's closest friend or family member, in addition to being done alone. Rediscovery activities may be beneficial to relationships globally because they remind the dyad of other previous positive times together. In contrast, since they are not as exciting and novel as an expanding activity, they may cause the dyad to feel bored or stuck in their shared activities.

One potential relationship outcome of a rediscovery activity is inclusion of other in the self. Inclusion of other in self can be defined as an overlap of one's cognitive representation of one's own self with one's representation of another person (Aron et al., 1991). It is most often assessed as the selection of one of seven possible combinations of circles, increasing in the degree of overlap starting from two separate circles to two circles that almost completely cover one another (Aron, Aron, & Smollen, 1992). It is possible that rediscovery will bring to mind several instances of sharing that same experience with one's close other and therefore increase a sense of closeness and inclusion. Understanding how type of expanding experience affects inclusion of other in self can illuminate how inclusion is elicited and if it is an outcome of rediscovery as well as expansion.

Further, it is possible that inclusion of other in self is a mediating variable in the association between activity and self-concept clarity. For example, if a rediscovery activity with a close other increases the inclusion of the other, it may decrease self-concept clarity because one

is then incorporating attributes of the other within the self that may not have been previously included. On the other hand, to the extent the other's attributes that are expressed in the rediscovery activity have already included in the self, a rediscovery activity with the other may strengthen those aspects of the self and thus increase self-concept clarity.

Aside from one's perception of cognitive closeness, or inclusion, with a significant-other, another additional variable of interest may be one's perception of clarity of a significant other. Gurung et al. (2001) first introduced a measure to assess this variable, called significant-other concept clarity. The measure had participants respond to the original Campbell et al. (1996) self-concept clarity questionnaire with their partner in mind. For example, participants would be asked to respond to the statement "My beliefs about my partner often conflict with one another." Significant-other concept clarity is positively associated with self-concept clarity ($r = .43$ for women and $.41$ for men). This suggests that having a clear and consistent self-concept is related to having a clear and consistent perception of one's partner's self-concept. It is important to note that this correlation could be reflective of common method variance, however in Gurung et al. (2001), researchers did not include any other assessments of self-clarity.

Significant-other concept clarity is also associated with higher relationship quality, greater perceived closeness, less conflict, and higher inclusion of the other in self (Gurung et al., 2001). Interestingly, significant-other concept clarity remains a significant predictor of all measures of relationship quality, even when entered simultaneously in a regression analysis with self-esteem. This supports there being a unique contribution of this structural self-variable to relationship outcomes. Indeed, it seems likely that this variable would be important for relationship outcomes. It is possible that if you have a clear conceptualization of your partner you are better able to coordinate your behavior, to support him or her and to avoid conflict. How self-expansion affects this variable is an interesting question for understanding how relationships function, and providing another possible positive outcome of self-expansion to relationships.

Overview of studies

To examine the effect of self-expanding activities (expanding and rediscovery) on self-concept clarity, I conducted two experiments. Experiment 1 examined the change in self-concept clarity from before to after being randomly assigned to participate in one of three types of real life experiences outside of the laboratory: self-expansion, rediscovery, or control activities. To examine potential mediators, I also assessed enjoyableness of the activity at post-test, and self-

concept (content and domains) and self-esteem at both pre- and post-test (to assess change in these variables). Experiment 1 was part of a larger study focusing on the benefits of participating in life events after experiencing the loss of a romantic relationship partner (Lewandowski & Radice, 2012), thus participants were all those who had recently experienced romantic relationship dissolution. Experiment 2 tested the same questions, but using a writing prompt as a prime for expanding and rediscovery activities and focusing on activities in the context of ongoing close relationships. In addition to variables examined in Experiment 1, it also assessed (post-prime only) positive affect (both aroused and calm), significant-other concept clarity, and inclusion of other in self, plus examining the potential moderating role of sensory processing sensitivity.

Hypotheses and Research Questions

Hypothesis 1: Compared with participating in or writing about every-day activities, self-concept clarity will be increased by participating in or writing about rediscovery activities and decreased by self-expanding (novel and challenging) activities.

Hypothesis 2: Compared with participating in or writing about every-day activities, self-concept domain will be increased by participating in or writing about expanding activities and decreased by rediscovery activities.

Hypothesis 3: Compared with participating in or writing about every-day activities, self-concept content will be increased by participating in or writing about self-expanding or rediscovery activities.

Hypothesis 4a and b: Levels of emotion experienced will vary by type of activity such that, compared with writing about an every-day activity, (a) those writing about a rediscovery activity will experience significantly more positive/calm emotion and (b) those writing about an expansion activity will experience more positive/aroused emotion.

Hypothesis 5: Sensory processing sensitivity will moderate the effect of type of activity written about on changes in self-concept clarity, such that those high on sensitivity will show a stronger effect.

Research Question 1: Will change in self-concept domains be a mechanism through which type of activity participated in or written about influences self-concept clarity?

Research Question 2a: What is the effect of type of activity participated in or written about on participants' levels of self-esteem?

Research Question 2b: Will change in self-esteem be the mechanism through which type of activity participated in influences self-concept clarity?

Research Question 3a: Will participants rate enjoyableness of their activity differently depending on type of activity participated in?

Research Question 3b: Is enjoyableness of activity a mechanism through which participation in activities influences self-concept clarity?

Research Question 4: Is positive emotion experienced a mechanism through which type of activity written about influences self-concept clarity?

Research Question 5: Will type of activity written about have an effect on significant-other concept clarity with regard to a close other who shared in the activity?

Research Question 6a: Will type of activity written about have an effect on inclusion in the self of a close other who shared in the activity?

Research Question 6b: Is inclusion of other in self a mechanism through which type of activity written about influences self-concept clarity?

Experiment 1 tested hypotheses 1, 2, and 3, and research questions 1, 2a, 2b, 3a, and 3b. Experiment 2 tested hypotheses 1, 2, 3, 4, and 5, and research questions 1, 4, 5, 6a, and 6b.

Experiment 1

Overview of Experiment 1

Participants were assessed, at a pre-test measurement, on self-concept clarity and potential mediators before they were randomly assigned to engage in rediscovery, expansion, or control activities. They later returned for a post-test assessment of the baseline variables.

Methods

Participants

Experiment 1 participants completing both parts of the study were 197 undergraduate students (154 women) from a university in the Northeast U.S. Fewer than 10% of participants who signed up for Part 1 of the study did not return to complete Part 2, and attrition was about equal for each condition. Participants were recruited from a university subject pool, open to all psychology students, with advertisements for the study posted on an online participation system. Mean age was 18.81 ($SD = 1.54$, range = 17–33); 33% were freshmen, 11.6% sophomores, 11.6% juniors, and 5.1% seniors. Of those indicating ethnicity, 80.8% were Caucasian, 6.6% Hispanic/Latino, 5.6% Black/African, 3.5% Eastern/Asian, and 3% indicated Other¹. All

participants had recently experienced romantic relationship dissolution within the past 6 months; Mean length since the break-up was $M = 3.11$ months ($SD = 2.20$). Most break-ups were from exclusively dating relationships (81.3%) followed by casual dating (10.6%), engagements (3%) and married relationships (1.5%).

Measures

Part 1 (*Pre-test*):

Demographics. Participants provided their age, gender, ethnic background, year in school. This demographic questionnaire was created for purposes of the study and is included in Appendix A. Other questionnaires designed for purposes of this study are found in subsequent appendices.

Self-concept clarity. Campbell et al. (1996) originated this 12-item scale, measuring how clearly, confidently defined, internally consistent and temporally stable one's self-concept is. An example item of this measure is, "In general I have a clear sense of who and what I am." Participants responded on a 5-item scale; 1 being "strongly disagree" and 5 being "strongly agree." Internal consistency was strong ($\alpha = .88$).

Self-esteem. This widely used 10-item scale by Rosenberg (1965) assesses participants' overall global evaluation of their selves. An example item is, "On the whole, I am satisfied with my self." Participants responded on a scale ranging from 1 to 4; 1 being "strongly disagree" and 4 being "strongly agree." Internal consistency was strong ($\alpha = .85$).

Spontaneous Self-Concept. Participants were asked to take 3 minutes and answer the question, "Who are you today?" Thirty blank spaces were provided for participants to fill in their responses. This method has been used in prior studies (e.g., Aron et al., 1995) to measure self-concept content and self-content domain. In the present study, participants were not timed during this assessment, however researcher assistants told them to try to take 3 minutes to fill out the questionnaire. Coding of the responses is described below.

Relationships. Participants were asked if the following applied to their selves or their previous partners: "Who do you feel is responsible for making the decision to break-up?" "Who do you feel is to blame for ending the relationship?" Also, the questionnaire asked participants to report how long ago their relationship ended, if they were in current relationships, and if so, how long they had been dating their new partners.

Part 2 (*Post-test*):

Manipulation Check. To assess if participants had completed the activities assigned to them and if these activities were appropriate for their condition, they were asked to list the names of the activities. In addition, they responded on a 7-point scale (1 being not at all, 7 being very much) to the question, “How descriptive are each of the following of the activities you completed?” They were then given the following statements, “Were activities you had never done before” (i.e., expansion), “Were activities you couldn’t do while in your previous relationship” (i.e., rediscovery), and “Were activities you do regularly anyway” (i.e., control).

Enjoyableness of Activity. Participants were asked, “How descriptive is the following for activities you completed? These were activities you found enjoyable?” Participants rated this on a 1-7 scale, 1 being “not at all,” 7 being “very much.”

Spontaneous Self-Concept. Same as in pre-test.

Self-Concept Clarity: Same as in pre-test; post-test $\alpha = .92$.

Self-Esteem: Same as pre-test; post-test $\alpha = .88$.

Coding of Variables

Self-Concept Content

Coding of the spontaneous self-concept was conducted by adding all of the non-redundant descriptors for each participant, in response to “Who are you today?” Two research assistants coded self-concept content for both the pre-test and the post-test. Intra-class correlations for self-concept content were .98 pre-test and .98 post-test (both $p < .001$).

Diversity of Self-Concept Domain

To assess self-concept domain, coding of the spontaneous self-concept was conducted, placing participants’ responses into 20 possible categories derived from Reissman et al. (1993). The amount of categories participants’ descriptions contained represented the number of number of self-content domains included in the self-description². See Table 1 for frequency information regarding the 20 categories for the pre-test and post-test. Two research assistants coded self-content domains. Intra-class correlations were .86 for pre-test and .88 for post-test. Gender differences are shown in Table 3.

Table 1
Frequency of self-concept domains

Category	Pre-Test N (Percent)	Post-Test N (Percent)
1. Anger	18 (2.29%)	7 (.94%)
2. Anxiety/Stress	21 (2.68%)	11 (1.47%)
3. Confusion	4 (.51%)	6 (.80%)
4. Fatigue/Boredom	40 (5.10%)	28 (3.74%)
5. Freedom	0 (0%)	0 (0%)
6. Helping/Humanitarian	67 (8.54%)	62 (8.30%)
7. Happiness	95 (12.10%)	103 (13.77%)
8. Inquiring	22 (2.80%)	27 (3.61%)
9. Longing	38 (4.84%)	24 (3.21%)
10. Love	75 (9.55%)	91 (12.18%)
11. Negative Self-Regard	40 (5.09%)	32 (4.28%)
12. Occupations	52 (6.62%)	61 (8.17%)
13. Peace/Security	25 (3.18%)	28 (3.75%)
14. Positive Self-Regard	83 (10.57%)	89 (11.91%)
15. Roles	106 (13.50%)	97 (12.98%)
16. Sadness	45 (5.73%)	32 (4.28%)
17. Selfishness/Personhood	1 (.13%)	0 (0%)
18. Sexuality	0 (0%)	0 (0%)
19. Wholesomeness/Health	26 (3.31%)	22 (2.94%)
20. Other	30 (3.82%)	27 (3.61%)

N = 197.

Procedure

Participants came into a laboratory for the Part 1 (pre-test) session. A consent form was read aloud, signed, and participants then filled out questionnaires containing demographics and the pre-test measures. After completion, researchers gave participants the option to participate in Part 2 of the study for additional credit. If they accepted, they were given a sheet of possible activities to complete before their next visit to the lab.

Activity Assignment. Participants were randomly assigned to one of three conditions (rediscovery, expansion, or control) in which they were given a list of activities and asked to select four from the list and complete them before their next lab session. They could complete activities on their own or with others. Activities included, “attending lectures, debates,” “bicycling for pleasure,” “hiking,” “visiting museum, gallery or zoo,” “visiting friends” and

“watching television.” These activities were previously used in Reissman et al. (1993). See Appendix B for the list of these activities.

The rediscovery condition gave participants the following instructions: “Please select four activities from this list that you have enjoyed doing in the past but your previous relationship prevented you from doing (i.e., things you would have liked to do, but couldn’t).” As all participants had recently experienced a romantic relationship break-up, defining rediscovery activities in this manner ensured that participants would complete activities that they had done before, but not recently. Further, this ensured that those in the rediscovery condition would not complete control condition activities that were defined as activities the participant would do regularly. In the expansion condition, participants were given the following instructions: “Please select four activities from this list that you have never done before AND that you find challenging and/or exciting.” The control condition instructions read as follows: “Please select four activities from this list that you have done on a regular basis the past month.”

In all conditions, after being assigned their activities, participants were given 2 weeks to complete them and return to the lab. (If participants did not want to complete Part 2 of the study, they were debriefed and thanked for their participation.) Examples of rediscovery activities that participants listed after completing the assignment were, “Went to the driving range and hit two buckets of balls” and “Had a refreshing workout; got rid of stress and had time to think while I was running.” Examples of expanding activities that participants listed were, “Went to the Whitney Museum in NYC” and “Climbed the rocks at the beach on the jetties.” Control activities included, “I took a nap in my room,” and “My two roommates and I just talked and joked around.”

At their Part 2 lab session, participants first completed measures of spontaneous self-concept, self-concept clarity, and self-esteem, then indicated the activities they participated in, how enjoyable they perceived these activities to be, and a manipulation check.

Results Experiment 1

Data Preparation

All variables were normally distributed. Missing cases included the following: one missing case for a pre-test self-esteem item, one missing case for a post-test self-esteem item, and two missing cases in ratings of enjoyableness of an activity. Missing cases were filled with a mean number for the scale, adjusting for reversed items by using the mean score of all items

keyed in the direction of the missing value. In addition, one participant did not respond to any items for the pre-test self-concept clarity scale, thus he was excluded from the self-concept clarity analyses. All items were within the proper scale ranges except for enjoyableness of activity that had one value above the scale range and represented the only outlier. It was adjusted for by substituting it with the highest value of the scale.

Means, standard deviations, and correlations among the major study variables are shown in Table 2. All main variables were correlated with questions about their relationships, and break-up impact emerged as the only significant association; thus it is represented in this table. For correlations including additional relationship variables, please see Appendix C.

Table 2

Means (and standard deviations) and correlations for main variables of interest and break-up impact

Variable	1	2	3	4	5	6	7	8	9	10
Mean	3.20	3.18	18.28	7.52	3.30	3.33	17.28	6.34	6.66	2.40
<i>SD</i>	(.48)	(.79)	(8.59)	(2.81)	(.49)	(.85)	(9.24)	(2.60)	(.92)	(1.99)
1. Pre-test Self-Esteem	—	.63***	-.12†	-.08	.76***	.62***	.03	-.01	.12†	.22**
2. Pre-test Self-Concept Clarity		—	-.04	.02	.59***	.83***	.06	.05	.06	.19**
3. Pre-test Self-Concept Content			—	.37***	-.02	-.02	.72***	.52***	-.12†	-.10
4. Pre-test Self-Concept Domain				—	-.06	-.04	.37***	.44***	-.11	-.08
5. Post-test Self-Esteem					—	.67***	.02	.08	.13†	.21**
6. Post-test Self-Concept Clarity						—	.07	.01	.07	.16*
7. Post-test Self-Concept Content							—	.43***	-.16**	-.16**
8. Post-test Self-Concept Domain								—	-.06	-.13†
9. Enjoyableness of Activity									—	.04
10. Break-up Impact										—

N = 196 -197. Higher scores indicate a greater magnitude of each variable.

†*p* < .10; **p* < .05; ***p* < .01; ****p* < .001

All major variables were examined for gender differences (see Table 3). For analysis of gender differences in additional variables, see Appendix D.

Table 3
Means (and standard deviations) by gender and gender differences between main variables of interest

Variable	Mean (<i>SD</i>) Females	Mean (<i>SD</i>) Males	<i>t</i>	Effect Size
1. Pre-test Self-Esteem	3.17 (.47)	3.29 (.50)	1.41	.10
2. Pre-test Self-Concept Clarity	3.12 (.77)	3.40 (.83)	2.07*	.15
3. Pre-test Self-Concept Content	19.50 (8.78)	13.95 (8.30)	3.70***	.26
4. Pre-test Self-Concept Domain	7.92 (2.62)	6.12 (3.04)	3.84***	.26
5. Post-test Self-Esteem	3.28 (.50)	3.37 (.47)	.99	.07
6. Post-test Self-Concept Clarity	3.29 (.84)	3.49 (.89)	1.37	.09
7. Post-test Self-Concept Content	18.51 (9.23)	12.93 (8.02)	3.60***	.25
8. Post-test Self-Concept Domain	6.73 (2.53)	4.93 (2.39)	4.17***	.28
9. Enjoyableness of Activity	6.27 (.86)	6.02 (1.15)	1.53	.11

N = 196 -197. Higher scores indicate a greater magnitude of each variable.

p* < .05; **p* < .001

Manipulation Check

Expansion condition participants had higher reports of doing something new, $F(2, 191) = 75.23, p < .001$; rediscovery participants, of doing something they previously had not been able to do for a while, $F(2, 191) = 12.52, p < .001$; and control participants, of doing something that

they do regularly $F(2, 192) = 65.86, p < .001$. See Table 4 for manipulation check means by condition.

Table 4

Manipulation check means (and standard deviations) for each experimental condition

Variable	Expanding	Rediscovery	Control	Total
1. New Activities, Never Done	4.98 (1.93)	2.08 (1.65)	1.56 (1.37)	2.75 (2.19)
2. Activities not done in a while	2.91 (2.00)	4.22 (1.66)	2.81 (1.79)	3.33 (1.91)
3. Activities done regularly	2.45 (1.57)	3.89 (1.49)	5.50 (1.43)	4.05 (1.92)

$N = 194 -195$.

Main Analyses

Hypothesis 1: Compared with participating in or writing about every-day activities, self-concept clarity will be increased by participating in or writing about rediscovery activities and decreased by self-expanding (novel and challenging) activities.

Results Hypothesis 1: I conducted an analysis of covariance (ANCOVA) in which the dependent variable was post-test self-concept clarity, the independent variable was experimental condition, along with a cross factor of gender, and a covariate of pre-test self-concept clarity³. Pre-test and post-test means of self-concept clarity for each experimental condition are shown in Table 5.

Table 5

Pre-test and post-test means (standard deviations) for each experimental condition with adjusted means controlling for gender and pre-test self-concept clarity

Variable	Expanding Activity	Rediscovery Activity	No-Activity Control	Total Sample
1. Pre-test Self-Concept Clarity	3.12 (.83)	3.30 (.72)	3.12 (.81)	3.18 (.78)
2. Post-test Self-Concept Clarity	3.20 (.92)	3.46 (.79)	3.31 (.85)	3.33 (.85)
3. Adjusted Means	3.22 (.78)	3.39 (.67)	3.33 (.83)	3.36 (.87)

$N = 196 -197$.

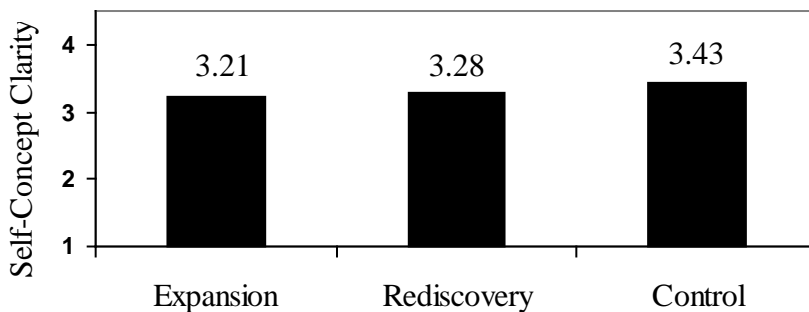
The overall ANCOVA was not significant, $F(2, 193) = 1.19, p = .31$, effect size (partial eta squared) = .01⁴. A series of contrast analyses were conducted comparing each condition to

the control. Rediscovery was not significantly different from control ($p = .74$; effect size = .002), nor was expansion ($p = .19$, effect size = .02). Additionally, the difference between the rediscovery and expansion conditions was not significant ($p = .30$, effect size = .01).

Additional exploratory analyses. I conducted additional ANCOVAs to further explore the basic idea of this hypothesis. The first I tried was identical to the above, except for including post-test residual self-esteem scores as an additional covariate; $F(2, 190) = 1.84$, $p = .16$, effect size = .02. Contrast analyses yielded one significant difference; those in the expansion condition had significantly lower self-concept clarity than those in the control ($p < .05$). Another analysis also included break-up impact (which was significantly correlated with pre- and post-test measures of both self-concept clarity and self-esteem) as an additional covariate in this analysis⁵. This analysis approached significance, $F(2, 189) = 2.77$, $p = .06$, effect size = .03 with the same one contrast being significant—expansion had significantly less self-concept clarity than the control ($p < .05$). Adjusted means for the experimental groups from this analysis are shown in Figure 1.

Figure 1

Adjusted post-test self-concept clarity means for the experimental groups controlling for pre-test self-concept clarity, gender, residual self-esteem scores, and break-up impact



Hypothesis 2: Compared with participating in or writing about every-day activities, self-concept domain will be increased by participating in or writing about expanding activities and decreased by rediscovery activities.

Results: The index of change in self-concept domains was calculated⁶ and an ANOVA was conducted in which index of change was the dependent variable and condition was the independent variable. The ANOVA yielded a non-significant difference among the three conditions, $F(2, 194) = 2.14$, $p = .12$, effect size = .08. Planned contrasts yielded no significant

difference between rediscovery and control ($p = .48$, effect size = .04) or expansion and control ($p = .82$, effect size = .003). Nor was there a significant difference between rediscovery and expansion ($p = .42$, effect size = .30) Descriptives are shown in Table 6.

Table 6

Means (and standard deviations) for index of self-concept domain change by condition

Group	N	Mean Index of Self-Concept Domain Change
Rediscovery	68	.22 (.07)
Expansion	58	.19 (.05)
Control	71	.18 (.04)

$N = 197$.

Hypothesis 3: Compared with participating in or writing about every-day activities, self-concept content will be increased by participating in or writing about self-expanding or rediscovery activities.

Results: An index of self-concept content change was calculated⁷. Next, an ANOVA yielded a significant difference between conditions $F(2, 194) = 4.76$, $p < .01$, effect size = .28. The contrast analysis revealed a significant difference between the rediscovery and control condition ($p < .01$, effect size = .15) and the expansion and control conditions ($p < .01$, effect size = .18). There was no significant difference between rediscovery and expansion ($p = .10$). See Table 7 for descriptives and differences between groups.

Table 7

Means (and standard deviations) for index of self-concept content change by condition

Group	N	Mean Index of Self-Concept Content Change
Rediscovery	68	.36 (.09) _a
Expansion	58	.32 (.12) _a
Control	71	.28 (.05) _b

$N = 197$. Means with different subscripts are significantly different at the $p < .01$ level.

Research Questions

Research Question 1: Will change in self-concept domains be a mechanism through which condition influences self-concept clarity?

Results: The overall effect for condition on self-concept clarity was not significant (as tested in the ANCOVA for Hypothesis 1). However the contrast between the expansion and control condition was significant, with expansion having lower post-test clarity, when gender, pre-test self-concept clarity, and residual self-esteem scores were accounted for. This ANCOVA and the contrasts were repeated but without pre-test self-concept clarity accounted for and with self-concept domain change as the dependent variable. The overall effect of condition was not significant, $F(2, 190) = .32, p = .72$, effect size = .01, nor were any of the contrast analyses. Thus, standard conditions for mediation were not met, and further analyses not conducted.

Research Question 2a: What is the effect of type of activity participated in or written about on participants' levels of self-esteem?

Results: An ANCOVA was conducted in which the dependent variable was post-test self-esteem, the independent variable was experimental condition, and the covariates were pre-test self-esteem and pre-test self-concept clarity. Pre-test, post-test, and adjusted self-esteem means for each experimental condition are shown in Table 8. The ANCOVA yielded a non-significant difference among the three conditions, $F(2, 192) = 1.26, p = .23$, effect size = .03⁸. Adjusted means for the three experimental groups are shown in Figure 4. Neither planned contrast was significant: Participants in the rediscovery condition, did not show significantly different levels of self-esteem (adjusted for pre-test self-esteem) than those in the control ($p = .19$) or expansion condition ($p = .89$). In addition, those in the expansion did not show significantly different levels of self-esteem than those in the control ($p = .16$).

Table 8
Pre-test, post-test, and adjusted means (and standard deviations) by experimental condition

Variable	Expanding Activity	Rediscovery Activity	No-Activity Control	Total Sample
1. Pre-test Self-Esteem	3.13 (.50)	3.25 (.47)	3.19 (.47)	3.20 (.48)
2. Post-test Self-Esteem	3.28 (.47)	3.38 (.45)	3.24 (.54)	3.30 (.49)
3. Adjusted Means	3.32 (.52)	3.33 (.51)	3.24 (.61)	3.29 (.53)

$N = 196 - 197$.

Research Question 2b: Will change in self-esteem be the mechanism through which type of activity participated in influences self-concept clarity?

Results. Condition was not a significant predictor for post-test residual self-concept clarity scores (see ANCOVA result for Hypothesis 1 above), however due to the significant contrast analysis (i.e., expansion versus control) when in the analysis with additional covariates, the next mediation step was tested for this contrast using this analysis but this time with self-esteem as the dependent variable (and without the covariate of pre-test self-concept clarity). The overall analysis was not significant, $F(2, 193) = 1.54, p = .22$, effect size = .02, nor were any of the contrasts. Thus, standard conditions for mediation were not met and further analysis not conducted.

Research Question 3a: Will participants rate enjoyableness of their activity differently depending on type of activity participated in?

Results: There was a significant difference between conditions on how enjoyable the activity was assessed $F(2, 193) = 10.40, p < .001$. Post hoc comparisons (Tukey HSD) indicated a significant difference between the rediscovery condition and the expansion condition ($p < .001$) with rediscovery having the higher mean. In addition, the control condition had significantly higher rated enjoyableness than expansion ($p < .01$). There were no significant differences between the control and rediscovery conditions. Means and standard deviations are shown in Table 9.

Table 9
Means (and standard deviations) for enjoyableness of activity by condition

	Enjoyableness of Activity	N
Rediscovery	6.44 (.68) _a	68
Expansion	5.77 (1.23) _b	57
Control	6.27 (.73) _a	70

$N = 195$. Means with different subscripts are significantly different at the $p < .01$ level.

Research Question 3b: Is enjoyableness of activity a mechanism through which participation in activities influence self-concept clarity?

Results: As noted, the effect of the hypothesized cause (condition) on the hypothesized effect (post-test residual self-concept clarity) was not significant in the basic analysis for Hypothesis 1); however as also noted above, the contrast between the expansion and control condition was significant when additional covariates were included. Thus, this analysis was

repeated, this time without pre-test self-concept clarity accounted for and with enjoyableness as the dependent variable. The overall analysis was significant, $F(2, 192) = 10.41, p < .001$, effect size = .10. Contrast analysis yielded one significant difference—those in the rediscovery had significantly higher enjoyableness than those in the expansion ($p < .001$, effect size = .15). However, the parallel contrast that was significant in Hypothesis 1 (expansion versus control) with the additional covariates was not significant for predicting the present hypothesized mediator ($p = .64$). Thus the second standard condition for mediation was not met and further analysis not conducted.

Additional Exploratory Analyses

Success of the Activity

An attempt was made to code for success of activity participation by creating a command in STATA (Data Analysis and Statistical Software) to search for key terms throughout participants' activity descriptions that may indicate how successful they were at completing the activities⁹. Coding did not reveal an accurate assessment of success, as the most frequently used key terms were more indicative of enjoying the activity than being successful at it. It was also evident while coding that there were no clear indications of activity failures so a comparison between those who succeeded or failed could not be made.

Extreme Group Analysis

This analysis sought to explore if those with the highest clarity (at pre-test) were better selectors of activities, as high clarity may make individuals more certain and aware of things they would enjoy doing. To assess this, differences in the highest 1/3 of self-concept clarity scorers were compared with the middle and lowest 1/3 on rated enjoyableness of activity by conducting an ANOVA with contrasts of each level of clarity compared with the other. No significant differences on enjoyableness of activity was found for the highest 1/3 versus the middle ($p = .65$) or the highest 1/3 versus the lowest ($p = .59$). The same analysis was replicated with pre-test self-esteem being divided into thirds, and no significant differences were found when comparing the highest 1/3 of self-esteem scorers to the middle ($p = .32$) or the highest to the lowest ($p = .28$).

Discussion Experiment 1

Experiment 1 did not find direct support for the main hypothesis that compared with ordinary (control) activities, rediscovery experiences would lead to higher, and self-expansion

experiences to lower, self-concept clarity. However an exploratory analysis otherwise parallel to the basic test revealed that the expansion condition had significantly lower post-activity clarity than the control when other relevant factors (change in self-esteem and break-up impact) were controlled for. The next hypothesis, that change in the self-concept domains included in one's spontaneous self-concept would be the highest in the expansion condition and lowest in rediscovery, was not supported, either in a direct test or in various exploratory analyses. My third main hypothesis was supported: Amount of change in the direct content of the spontaneous self-concept was significantly greater in the rediscovery and expansion conditions, as compared with the control.

Examination of the research questions indicated that change in self-esteem did not significantly differ by condition, nor did it act as a mediator in the condition/clarity relationship (indeed, this mediation was not tested because the parallel effects of condition on clarity and self-esteem were both not significant). Enjoyableness of activity was rated as highest in the rediscovery condition, and significantly higher than the expansion condition. However, again, because of the lack of an overall effect for condition on clarity, enjoyableness was not examined as a potential mediator of such an effect. Exploratory analyses indicated that coding the success of the activities could not be accurately completed with the current data. Also, that there were no significant extreme group relationships between self-concept clarity and self-esteem and the enjoyableness of the activities.

Experiment 2

Overview of Experiment 2

Experiment 2 tested the same basic process as Experiment 1 (differences between rediscovery, expansion, and control activities on self-concept clarity) however it used writing prompts as a priming manipulation for the different activity types. Also, participants wrote about an activity they had completed with their closest other (i.e., best friend, family member, or romantic relationship partner), furthering Experiment 1 by examining how rediscovery and expansion may operate in the context of a close relationship. Experiment 2 also examined the role of changes in self-concept content and domains in this new context, plus going beyond Experiment 1 to examine the effect of condition on emotional response to the activity and on significant-other concept clarity, as well as on inclusion of other in self with regard to the close other with whom they carried out the activity. Potential mediating mechanisms tested for in the

hypothesized activity effect on self-concept clarity included emotions and inclusion of other in self. Further, sensory processing sensitivity was examined as a potential moderator, affecting the strength of the effects of different activity types on clarity.

Methods

Participants

Participants were 93 undergraduate students (63 women) from a university in the Northeast U.S. Participants were recruited in an upper level psychology class of approximately 200 students. Everyone was asked to participate with the possibility of winning a \$25 gift certificate by being placed in a raffle after participation. Participants were approached at the end of their class session and asked if they would like to participate in the study. If so, they remained in the class, and all others were excused. Mean age was 20.24 ($SD = 2.08$) range = 18-33; 20.4% were freshmen, 31.2% were sophomores, 31.2% were juniors and 17.2% seniors. Of those indicating ethnicity, 34.4% were Caucasian, 30.1% Eastern/Asian, 17.2% Hispanic/Latino, 10.8% Black/African, and 7.5% indicated Other¹⁰. The majority of the sample (55.9%) were in a romantic relationship; 94.2% of these dating exclusively with 5.8 dating casually. The mean relationship length in months was $M = 79.74$ ($SD = 52.08$). Most participants (52.7%) listed their romantic relationship partner to be their closest other, followed by 31.2% listing a friend, 11.8% a family member, and 4.3% said Other. Of those who indicated Other, all listed an ex-romantic relationship partner as their closest other.

Measures

Demographic Questionnaire: Participants reported age, gender, ethnic background, year in school, current romantic relationship status, whom they considered their closest other to be (friend, family member, romantic relationship partner, or other), and their satisfaction in that relationship. See Appendix E for this measure.

Self-concept clarity. Same as Experiment 1; Experiment 2 $\alpha = .89$.

Self-esteem. Same as Experiment 1; Experiment 2 $\alpha = .85$.

Spontaneous Self-Concept. Same as Experiment 1.

Sensory Processing Sensitivity (SPS). This 27-item scale, created by Aron and Aron (1997) assesses an individual's sensitivity to processing information in their social environment. Example items include, "I find it unpleasant to have a lot going on at once." For purposes of this study, I selected nine items off of this scale based on a factor analysis for items that highly

endorse core sensitivity. Participants responded on a 1 to 7 scale; 1 being “not at all” and 7 being “extremely.” Internal consistency, $\alpha = .83$.

Emotion. Participants’ levels of both positive/calm emotion and positive/aroused emotion were assessed by items taken from Mayer and colleagues (1991). Three items measured participants’ state level of aroused affect (active, lively, peppy) and three items measured their state calm positive affect (content, calm, happy). Participants were asked to “Look at each adjective and respond according to the way you personally feel” on a scale of ranging from 1 to 4; 1 being “definitely do not feel” and 4 being “definitely feel.” Internal consistency for the aroused affect, $\alpha = .80$; calm positive affect, $\alpha = .87$.

Personality. This ten-item personality questionnaire, developed by Gosling, Rentfrow, and Swan (2003) assessed participants on openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. Internal consistency for each of the subscales was low, ranging from $\alpha = .25$ to $\alpha = .57$, however this is to be expected as each subscale only had two items.

Self-Other Concept Clarity (SOCC). This scale asked individuals about their clarity regarding their romantic relationship partner. For purposes of this current study, participants responded to each item thinking of their closest other, inserting in the parenthesis either a best friend, romantic relationship partner, or family member. For example, “In general, I have a clear sense of who and what my () is.” Participants responded on a 5-item scale; 1 being “strongly disagree” and 5 being “strongly agree.” Internal consistency, $\alpha = .87$.

Inclusion of Other in the Self (IOS). Participants reported their current inclusion of self with their closest other (i.e., a best friend, romantic relationship partner or family member). This was assessed using the measure of seven circles by Aron et al. (1992). These circles represent the “self” and the “close other” and increase in the degree of overlap starting from two separate circles to two circles which almost completely covering one another. For this measure, Aron et al. (1992) reported alternate-form reliability of $r = .95$ and test-reliability over 2 weeks of $r = .85$.

Coding of Variables

Self-Concept Content

This coding method was identical to Experiment 1. Gender differences in self-concept content are shown in Table 13. Two research assistants coded self-concept content, intra-class correlations were $.89$, $p < .01$.

Self-Concept Domain

The coding method was identical to the method in Experiment 1 with participants' responses placed into 20 possible categories. The amount of unique categories was added for each participant to represent a quantitative marker of number of self-concept domains¹¹. There were three categories (selfishness/personhood, sexuality, and freedom) that were not mentioned in participants' responses. See Table 11 for frequency information regarding the 20 categories. Two research assistants coded self-content domains, intra-class correlation = .84, $p < .01$. Gender differences in self-content domain are shown in Table 13.

Table 11
Frequency of self-concept domains

Category	<i>N</i>	Percent
1. Anger	2	.4%
2. Anxiety/Stress	9	2.12%
3. Confusion	2	.4%
4. Fatigue/Boredom	22	5.18%
5. Freedom	0	0%
6. Helping/Humanitarian	23	5.41%
7. Happiness	66	15.53%
8. Inquiring	11	2.59%
9. Longing	9	2.12%
10. Love	45	10.59%
11. Negative Self-Regard	22	5.18%
12. Occupations	18	4.24%
13. Peace/Security	13	3.06%
14. Positive Self-Regard	46	10.82%
15. Roles	78	18.35%
16. Sadness	28	6.59%
17. Selfishness/Personhood	0	0%
18. Sexuality	0	0%
19. Wholesomeness/Health	13	3.06%
20. Other	18	4.24%

$N = 93$.

Procedure

A consent form was distributed and read aloud to the participants followed by the survey packet. Order of measures in the survey packet were counter-balanced, however the self-expansion writing manipulation was completed before measures of self-concept clarity, self-esteem, spontaneous self-concept, emotion, significant-other concept clarity, and inclusion of

other in self. At the back of the survey packet a separate sheet of paper was provided with a space for participants to place their email address. It was perforated as to allow them to tear it and hand it in separately from their survey packet. After participants finished their surveys, they returned their signed consent form, survey packet and email address sheet. I randomly selected a raffle winner through a random number generator, after I entered the email addresses into an Excel database.

Writing Manipulation. This writing prompt (see Appendix F) designed for the purposes of this study, placed participants in one of three conditions (rediscovery, self-expansion, or a control) and asked them to write about how they experienced these types of activities with their closest other. After each writing prompt, five lines of writing space were provided for participants to respond. The directions were as follows:

Rediscovery of self condition. Recall a time where you and () did something together a second time that you had enjoyed doing the first time. Write that activity here _____ . Describe what the two of you are doing in this activity. How did you feel while you are doing this activity?

Self-expansion condition. Recall a time where you and () did something new together that you had never done before and was fun and exciting and even difficult to do at first. Write that activity here _____. Describe what the two of you are doing in this activity. How did you feel while you are doing this activity?

Control condition. Write about things that you normally do on a day to day basis with the person closest to you.

Results Experiment 2

Data Preparation

All variables appeared to be normally distributed and there were no outliers. There were two cases of missing items in positive calm emotion, two in the HSP questionnaire, three in the self-concept clarity measure, and four in significant-other concept clarity. Missing items were filled with a mean number for the scale, adjusting for reversed items by using the mean score of all items keyed in the direction of the missing value. All items were within the proper scale ranges. See Table 12 for descriptive statistics and correlation coefficients.

Table 12
Descriptive Statistics and correlations between main variables of interest

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mean	3.12	3.10	3.79	4.41	2.83	3.25	4.80	5.59	4.45	5.22	4.84	4.33	6.33	12.22	6.52
SD	(.46)	(.78)	(.75)	(.93)	(.65)	(.70)	(1.80)	(.98)	(1.15)	(1.01)	(1.07)	(1.41)	(1.85)	(5.48)	(1.89)
1. SE	—	.36***	.32**	.01	.13	.31**	.27**	.11	-.25*	.35**	.12	-.13	.40**	.10	.09
2. SCC		—	.32**	.31**	.02	.53***	.14	-.29**	.19†	.32**	.08	.10	.31*	.02	.05
3. SOCC			—	.24*	-.12	.30**	.68***	.05	.10	.12	.13	-.32	.44***	.01	.03
4. SPS				—	.01	-.11	.08	.15	.38***	-.11	.29**	-.47***	.08	.11	.10
5. PAA					—	.30**	.02	.13	-.12	.18†	.23*	.04	.02	.08	.09
6. PCA						—	.23*	-.30**	.31**	.28**	.17	-.13	.23*	.10	.11
7. IOS							—	.07	.01	.09	.07	-.28*	.38**	.01	.02
8. Openness								—	.14	.08	.17†	.11	.10	.12	.11
9. Neuroticism									—	.07	.03	.11	-.25*	.09	.07
10. Conscientiousness										—	.36***	.21*	.04	.13	.12
11. Agreeableness											—	-.14	.26*	.10	.07
12. Extraversion												—	-.31*	.06	.05
13. Relationship Satisfaction													—	.01	.02
14. Self-Concept Content														—	.42***

15. Self-Concept Domain

—

$N = 93$; in all correlations with item 13, $N = 62$. Higher scores indicate a greater magnitude of each variable;

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Note: SE = self-esteem; SCC = self-concept clarity; SOCC = significant-other concept clarity; SPS = sensory processing sensitivity;

PAA = positive aroused affect; PCA = positive calm affect; IOS = inclusion of other in self

Table 13 provides descriptive statistics by gender and tests of gender differences.

Table 13

Means (and standard deviations) by gender, and t-values and effect sizes for gender differences

Variable	Females Mean (SD)	Males Mean (SD)	<i>t</i>	Effect Size
1. Self-esteem	3.10 (.48)	3.18 (.43)	.78	.08
2. Self-Concept Clarity	2.95 (.84)	3.43 (.52)	2.83**	.28
3. Significant Other Concept Clarity	3.84 (.73)	3.71 (.78)	.78	.08
4. Sensory Processing Sensitivity	4.58 (.92)	4.04 (.85)	2.74**	.27
5. Positive Aroused Affect	2.95 (.52)	2.61 (.81)	2.41*	.25
6. Positive Calm Affect	3.24 (.78)	3.35 (.57)	.70	.07
7. Inclusion of Other in Self	4.89 (1.76)	4.60 (1.90)	.72	.08
8. Openness to Experience	5.63 (.99)	5.50 (.96)	.62	.06
9. Neuroticism	4.42 (1.16)	4.51 (1.13)	.37	.04
10. Conscientiousness	5.25 (1.08)	5.17 (.85)	.35	.04
11. Agreeableness	4.93 (1.12)	4.67 (.93)	1.11	.12
12. Extraversion	4.15 (1.52)	4.72 (1.06)	1.83†	.19
13. Relationship Satisfaction	6.07 (2.06)	7.00 (.86)	1.80***	.23
14. Self-Concept Content	14.87 (7.43)	9.20 (4.50)	1.25*	.13
15. Self-Concept Domain	8.89 (3.25)	5.45 (2.78)	1.89	.19

N = 93, except for item 13 where *N* = 62. Higher scores indicate a great magnitude of each variable. All time shown in weeks.

†*p* < .10; **p* < .05; ** *p* < .01; ****p* < .001

Main Analyses

Hypothesis 1: Compared with participating in or writing about every-day activities, self-concept clarity will be increased by participating in or writing about rediscovery activities and decreased by self-expanding (novel and challenging) activities.

Results Hypothesis 1. An ANOVA was conducted with self-concept clarity as the dependent variable and writing prompt condition as the independent variable and a cross-factor

of gender. The ANCOVA yielded a near significant difference among the three conditions, $F(2, 88) = 1.45, p = .09$, effect size = .13. Means are shown in Table 14. Planned contrasts however comparing each condition to the control did not approach significance (rediscovery vs. control, $p = .84$, effect size = .001; expansion vs. control, $p = .32$, effect size = .01). However, the additional exploratory contrasts indicated (rediscovery vs. expansion) was significant ($p < .05$, effect size = .17). I also conducted an additional analysis including self-esteem as a covariate. This overall analysis was not significant, $F(2, 87) = .63, p = .53$, effect size = .01; nor were any contrasts.

Table 14
Self-concept clarity after writing activity by condition

Group	N	Mean Self-Concept Clarity
Rediscovery	31	3.24 (.76) _a
Expansion	33	2.94 (.64) _b
Control	29	3.19 (.79) _{ab}

$N = 93$. Means with different subscripts are significantly different at the $p < .05$ level.

As approximately half of the sample were writing about their experiences with their romantic relationship partners, it is possible that writing about their romantic partners may have differentially affected their levels of self-concept clarity. Thus, an identical ANOVA was run (the original version, without self-esteem as a covariate) but only including those who were writing about their romantic partners as their closest other¹². The overall analysis was significant $F(2, 45) = 7.68, p < .001$, effect size = .26. In examining contrasts, the difference between expansion and control was not significant ($p = .21$, effect size = .04); however, the difference between rediscovery and control was significant ($p < .05$, effect size = .15). In addition, as in the analysis for the entire sample, the difference between the rediscovery and expansion condition was significant ($p < .001$, effect size = .21) with rediscovery having significantly higher self-concept clarity. Means are shown in Table 15.

Table 15

Self-concept clarity after the writing activity by condition including only those writing about an activity with a romantic relationship partner

Group	N	Mean Self-Concept Clarity
Rediscovery	15	3.55 (.56) _a
Expansion	17	2.89 (.58) _b
Control	16	2.95 (.62) _b

$N = 48$. Means with different subscripts are significantly different at the $p < .05$ level.

The analysis of this subsample was replicated with self-esteem added as a covariate and it remained significant $F(2, 45) = 6.98, p < .001$, effect size = .24), along with significant contrasts for rediscovery versus expansion ($p < .001$, effect size = .19) and versus control ($p < .05$, effect size = .13).

Hypothesis 2: Compared with participating in or writing about every-day activities, self-concept domain will be increased by participating in or writing about expanding activities and decreased by rediscovery activities.

An ANOVA yielded a non-significant difference across conditions, $F(2, 90) = 1.89, p = .19$, effect size = .12)¹³. Contrast analyses yielded no significant difference between the rediscovery and control condition ($p = .58$, effect size = .01), the expansion and control condition ($p = .24$, effect size = .04), or the rediscovery and expansion condition ($p = .13$, effect size = .07). Means are shown in Table 16.

Table 16

Self-concept domain after the activity writing by condition

Group	N	Mean Self-Concept Domain
Rediscovery	31	6.27 (.79)
Expansion	33	6.31 (.68)
Control	29	6.29 (.82)

$N = 93$.

This analysis was replicated with self-esteem added as a covariate and, again, neither the overall analysis ($F[2, 90] = 1.20, p = .27$, effect size = .08) nor any of the contrasts reached or approached significance.

Hypothesis 3: Compared with participating in or writing about every-day activities, self-concept content will be increased by participating in or writing about self-expanding and rediscovery activities.

An ANOVA yielded a non-significant difference between conditions $F(2, 91) = 1.89, p = .56$, effect size = .03. Contrast analyses revealed no significant difference between rediscovery and control ($p = .13$, effect size = .06), expansion and control ($p = .72$, effect size = .01), or rediscovery and expansion ($p = .11$, effect size = .07)¹⁴. See Table 17 for descriptives by condition.

Table 17
Self-concept content after writing manipulation by condition

Group	N	Mean Self-Concept Content
Rediscovery	31	11.27 (3.58)
Expansion	33	10.53 (3.89)
Control	29	10.67 (4.56)

$N = 93$.

Hypothesis 4a and b: Levels of emotion experienced will vary by condition such that those in the rediscovery writing condition will experience significantly more positive/calm emotion and those in the expansion writing condition will experience more positive/aroused emotion.

A 2X3 mixed model ANOVA was conducted with the independent variables of emotion having two within-subject levels (aroused and calm) and condition having three between subject levels (rediscovery, expansion, and control). The main effect of condition was not significant, $F(2, 90) = .30, p = .73$, effect size = .001. However the within-subject effect for emotion was significant, $F(1, 90) = 20.97, p < .001$, effect size = .19; and the interaction was significant, $F(2, 90) = 3.80, p < .01$, effect size = .08. Patterns of this interaction were examined first by running within group t -tests of each type of emotion by condition. In the rediscovery condition, participants had significantly higher positive/calm emotion than positive/aroused emotion $t(30) = 4.47, p < .001$, effect size = .38. In the expansion condition, no significant differences were found between types of emotion, $t(28) = 1.61, p = .12$, effect size = .09, nor in the control $t(32) = 1.60, p = .12$, effect size = .08. Descriptive statistics are shown in Table 18.

Table 18

Means (and standard deviations) for emotions within conditions

Group	Positive/Calm	Positive/Aroused
Rediscovery	3.52 (.57) _a	2.71 (.85) _b
Expansion	3.15 (.92) _{ab}	2.90 (.65) _{ab}
Control	3.15 (.86) _{ab}	2.91 (.51) _{ab}

$N = 93$. Means with different subscripts are significantly different at the $p < .001$ level.

Simple effect analyses across conditions were also examined, first with a one way ANOVA of positive/aroused emotion by condition. The ANOVA was not significant, $F(2, 90) = .93, p = .40$, effect size = .01. The second simple effects analysis was a one way ANOVA of positive/calm emotion by condition. The ANOVA was nearing significance, $F(2, 90) = 2.71, p = .07$, effect size = .04. As this analysis was nearing significance, post hoc Tukey HSD analyses were explored with no significant difference between rediscovery and expansion ($p = .11$), rediscovery and control ($p = .13$), or expansion and control ($p = .86$).

Hypothesis 5: Sensory processing sensitivity will moderate the effect of type of activity written about on changes in self-concept clarity, such that those high on sensitivity will show a stronger effect.

A 2X3 between-subjects ANCOVA was conducted with self-concept clarity as the dependent variable, sensory processing sensitivity entered as a two level categorical independent variable (split high and low at the midpoint of the scale), and writing prompt condition entered as a 3 level independent variable (rediscovery, expansion, control). Following standard practice for this variable, I included neuroticism as a covariate. The main effect for condition was not significant, $F(2, 86) = 2.10, p = .13$, effect size = .05. The main effect for sensory processing sensitivity was significant, $F(1, 86) = 3.78, p < .05$, effect size = .04. The interaction between condition and sensory processing sensitivity was not significant, $F(2, 86) = .17, p = .84$, effect size = .01. See Table 19 for descriptions of these results¹⁵.

Table 19

Self-concept clarity adjusted means (and standard deviations) by condition and high-low sensory processing sensitivity adjusting for neuroticism

Condition	Sensory Processing Sensitivity		Overall Mean
	Low	High	
Rediscovery	3.43 (.56)	3.10 (.89)	3.28 (.73)
Expansion	3.16 (.97)	2.68 (.78)	2.87 (.88)
Control	3.40 (.53)	2.91 (.72)	3.18 (.67)
Overall Mean	3.34 (.69)	2.87 (.80)	

$N = 93$.

Research Questions

Research Question 1: Will self-concept domains be a mechanism through which condition influences self-concept clarity?

Research Question 1, Analysis: In the overall sample, condition was not a significant predictor for self-concept clarity scores, however an exploratory contrast revealed a significant difference between the rediscovery and expansion condition. Additionally, there was a significant effect in the subsample who were writing about their romantic relationship partners. However, condition was not a significant predictor for self-concept domain or any contrasts, for either the overall sample or for the sub-set of sample writing about their romantic partners (see Hypothesis 2). Thus, the second standard condition for mediation was not met and further steps testing for mediation were not conducted.

Research Question 4: Is positive emotion experienced a mechanism through which condition influences self-concept clarity?

Research Question 4, Analysis: Again, the second standard step for mediation was not met: condition was not a significant predictor of either of the possible positive emotion mediators in the overall sample: Positive/aroused emotion, $F(2, 91) = -.89, p = .22$, effect size = .05; positive/calm emotion, $F(2, 91) = .51, p = .37$, effect size = .02; nor were any of the contrast analyses significant. Similarly, in the subset of the sample writing about their romantic relationship partners, condition was not a significant predictor of positive/aroused emotion, $F(2, 45) = -1.07, p = .18$, effect size = .07; or positive/calm emotion, $F(2, 45) = .87, p = .24$, effect size = .04; nor were any of the contrast analyses significant.

Research Question 5: Will the self-expansion writing manipulation have an effect on significant-other concept clarity?

Research Question 5, Analysis: An ANOVA was conducted in which significant other-concept clarity was the dependent variable and writing prompt condition was the independent variable. The ANOVA yielded a non-significant difference between the three conditions, $F(2, 90) = .30, p = .74$, effect size = .03. Given that the difference wasn't nearing significance, follow-up contrasts were not conducted¹⁶.

Research Question 6a: Will the self-expansion writing manipulation have an effect on inclusion of other in self?

Research Question 6a, Analysis: A one-way between subjects ANOVA¹⁷ yielded a significant difference between conditions on including other in the self, $F(2, 90) = 3.39, p < .05$, effect size = .39. Means and standard deviations are shown in Table 20, with means also displayed in Figure 2. Post hoc comparison (Tukey HSD) revealed one significant difference between the rediscovery and expansion conditions ($p < .05$, effect size = .28) with the rediscovery condition having significantly higher IOS ($M = 5.40$) than the expansion condition ($M = 4.24$)¹⁸.

Table 20
Inclusion of other in self by condition

	Inclusion of Other in Self	<i>N</i>
Rediscovery	5.40 (1.80) _a	31
Expansion	4.24 (1.85) _b	33
Control	4.79 (1.59) _{ab}	29

$N = 93$. Means with different subscripts are significantly different at the $p < .05$ level.

Research Question 6b: Is inclusion of other in self a mechanism through which type of activity written about influences self-concept clarity?

Research Question 6b, Analysis: As noted in Hypothesis 1, writing condition was not a significant predictor for self-concept clarity in the entire sample, however the contrast between rediscovery and expansion was significant. Additionally, in the subset of the sample writing about their romantic relationship partners, condition was a significant predictor for self-concept clarity. Despite this, conditions for mediation could not be tested in an ANCOVA because when condition and inclusion of other in self were entered in an ANOVA predicting self-concept

clarity, the interaction between the mediator and condition was significant, $F(2, 91) = 3.48, p < .05$, effect size = .07. Thus, homogeneity of regression was not met.

Discussion Experiment 2

Experiment 2 found partial support for the main hypothesis that writing about rediscovery activities would lead to higher self-concept clarity. In the entire sample, self-concept clarity was significantly greater after writing about rediscovery activities than after writing about expansion activities. Also, considering only those writing about experiences with their romantic relationship partner, self-concept clarity was significantly greater after writing about rediscovery activities as compared with either expansion activities or to control activities. However, even in this subsample, self-concept clarity was not significantly lower in the expansion condition as compared with the control. I did not find any support for the hypothesis that self-concept domain would be higher in the expansion condition versus rediscovery and control. Additionally, I did not find any support for the hypothesis that self-concept content would be highest in the rediscovery and expansion conditions versus control. Additional hypotheses that were not supported included that positive/aroused emotions would be highest in the expansion condition and positive/calm emotions in the rediscovery condition, and that emotion would mediate the condition/clarity relationship. However, there was an interaction between emotion and condition suggesting that those in the rediscovery condition experienced more positive/calm emotion than positive/aroused emotion. There were no significant differences in emotions experienced across conditions. Also, sensory processing sensitivity did not moderate the association between condition and self-concept clarity, although there were overall differences, showing for the first time a relation between this variable and self-concept clarity.

Analyses based on the research questions did not support mediation for the condition to clarity effect. (This was mainly because even for the contrast in which the basic effect was significant, and even for the subsample in which some of the hypothesized effects were significant, the standard second step of mediation, the effect of condition on the mediator, was not significant). Nor did significant-other concept clarity show significant differences by condition. Inclusion of other in self was significantly higher in the rediscovery condition than the expansion condition, but it did not mediate the condition/clarity relationship.

General Discussion

The effect of expanding, rediscovery, and control activities on the self and relationships was investigated in two experiments. Specifically, I examined how these activities affect self-concept clarity and how mechanisms of change in cognitions and evaluations of the self, as well as traits and emotions, may play a role in such effects. Further, the effect of rediscovery and expanding activities was examined for two relationship variables, significant-other concept clarity and inclusion of other in the self.

Main Hypotheses and Research Questions

It was hypothesized that, compared with a control condition, self-concept clarity would increase after participants engaged in or wrote about a rediscovery activity, and decrease after participants engaged in or wrote about an expansion activity. Results for Experiment 1 found that self-concept clarity did not significantly increase in the rediscovery activity condition compared with the control, nor did self-expansion significantly decrease compared with the control. The analysis for this main hypothesis became nearly significant when the change in self-esteem and break-up impact were also controlled for, although even here the effect size was small (partial $\eta^2 = .03$). Nevertheless, there was one significant contrast, with the control having a greater increase in self-concept clarity than self-expansion. Indeed, the overall pattern in Experiment 1 was for the control to have the greatest increase in clarity, followed by the rediscovery condition, and lastly the expansion condition.

This is consistent with one of the hypothesized relationships—that a self-expanding experience would undermine self-concept clarity; however, it does not support that rediscovery enhances clarity. The significant effect found was that in the expansion condition, individuals had a significantly smaller increase in self-concept clarity compared with the controls. Indeed, across all conditions self-concept clarity increased, yet it increased the least in expansion. These data seem to suggest that it is possible that self-concept clarity is just as likely to increase in the control condition as the rediscovery condition; however, it is not as likely to increase in the expansion condition. This may be demonstrating a pattern of undermining self-concept clarity after expansion.

The results for Experiment 2 were somewhat different from what was found in Experiment 1. In Experiment 2, a writing prompt was used to have participants recall experiences of expanding, rediscovery, or everyday activities that they participated in with their closest other. The hypothesized effect of self-concept clarity being significantly greater after the

rediscovery activity was found through an exploratory paired contrast between the rediscovery and expansion conditions, for the entire sample. For the subset of the sample writing about experiences with a romantic relationship partner, self-concept clarity was significantly greater in the rediscovery condition, versus the expansion and also versus the control. These data support that when individuals engage (in this case retrospectively, through writing) in a rediscovery experience, their sense of clarity increases and when they engage in writing about expansion, their sense of clarity decreases. Thus, there appears to be something about the rediscovery experience that makes one more confident and clear in one's self-definition.

It should be noted that this finding of self-concept clarity being greater after the rediscovery activity in Experiment 2 was only significant if self-esteem was not included as a covariate. This suggests that the increase of self-concept clarity may actually be due to its shared variance with self-esteem (which, as noted, was not accounted for in the basic analysis). When self-esteem was accounted for, this analysis was no longer significant. Given the strong relationship between self-esteem and self-concept clarity (e.g., Nardone et al., 2011), this is not surprising; however, it raises the question of what unique characteristic of clarity will influence outcomes outside of its relationship to self-esteem? Also, this appears to conflict with the results in Experiment 1 in which the effects of type of activity on clarity were actually stronger when controlling for self-esteem, an issue I will address at a later point in this discussion.

In addition regarding Experiment 2, when I examined just the subsample of individuals writing about experiences with their romantic partners, self-concept clarity was significantly greater for those in the rediscovery condition as compared with the expansion and to the control conditions, which partially supports my hypothesis. Self-concept clarity was not significantly less in the expansion condition as opposed to the control, which suggests that clarity was influenced more by writing about rediscovery than by writing about expansion.

The difference in findings between experiments is interesting because it points to components of relationships as being important in the expansion/clarity process. For individuals who had recently lost a romantic partner (Experiment 1), their clarity did not increase significantly in the rediscovery condition. For individuals who were virtually experiencing rediscovery (through writing) with their current romantic relationship partner, their clarity increased in rediscovery condition, as compared with expansion and control conditions. Why would rediscovery increase clarity more than expansion and control only for those experiencing

it with romantic relationship partners? It is possible that, within this sample of young adults, experiences with romantic relationship partners are more vividly remembered than experiences with other relationship partners (e.g., friends and family members). And when these are rediscovery activities, these are most likely experiences that have been repeated multiple times. The combination of vivid and frequent experiences may have more bearing on the self and when recalled, remind and solidify the self of known identities, characteristics, likes and dislikes, etc.

Another question is why was there was a significant effect for rediscovery in Experiment 2 and not Experiment 1. The difference between engaging in an activity and writing about one may be part of this. The process of writing about an activity (regardless of what condition it was) could be a form of rediscovery, in that participants relive the experience by communicating about it on paper. For those in the rediscovery writing condition, the effects of rediscovering an experience are in a sense doubled and may explain why this condition saw the increase in clarity.

It was also hypothesized that self-concept domain would be increased in the expansion activity (or writing condition) as compared with the control, and that self-concept domain would be decreased by the rediscovery condition. However, in both experiments, there were no significant differences between pairs of conditions on self-concept domain. This contrasts with findings from Aron et al. (1995) finding increases in self-concept domain after the self-expanding experience of falling in love.

There are a number of possible reasons why self-concept domain did not increase after the activity and writing self-expansion manipulations. In the case of Experiment 1, it may be that if participants were measured directly after their experiences, there may have been different results. Perhaps domain increases are most easily observable directly after the experience. In this case, there could have been up to 2 weeks lag time since the experience occurred—although there were also 2 weeks in the Aron et al. 1995 study. On the other hand, falling in love is likely a much more intense experience than the one participants carried out in Experiment 1. In the case of Experiment 2, it may be that the writing prompt was not a strong enough manipulation to elicit changes; although it did have effects on some variables, the effect may not have been strong enough to yield significant results for a variable tentatively as hard to change as self-concept domains, particularly since in Experiment 2 self-concept domain was measured only post-test (providing less power to distinguish differences between conditions).

Another hypothesis was that self-concept content would significantly increase in the rediscovery condition versus the expansion and control. In Experiment 1 this hypothesis was supported; however it was not supported in Experiment 2 where no significant differences in self-concept content were found between conditions (and the trend was for rediscovery to have the highest content, followed by the control, and then expansion). It is possible that the effect was not found in Experiment 2 for similar reasons to self-concept domain—the writing manipulation may not have been a strong enough catalyst to lead to more written descriptions of the self. However, the findings from Experiment 1 suggest that participating in rediscovery activities influences the content of the self, leading to more descriptions.

Experiment 1 also found that self-esteem was not significantly affected by activity condition. Interestingly self-esteem did not significantly increase in any of the experimental conditions. As self-esteem has previously shown an increase after periods of intense expansion (e.g., Aron et al., 1995), this finding was contrary to such established research. As mentioned previously, it may be that the falling in love experience is simply much more intense than the activities and writing manipulation investigated in the current work. It may also be that the change in self-esteem in Aron et al. (1995) resulted from acquiring a socially desirable outcome (i.e., being in love with someone) rather than from expansion. This may explain why self-esteem increased in that prior study, and why we did not find any significant increase in self-esteem in the current work. Further research on expansion should clarify which specific components of the expansion process lead to higher self-esteem.

On the other hand, as noted earlier, self-esteem did seem to matter in Experiment 1 in that when change in self-esteem was controlled for, the effects on self-concept clarity were stronger. This suggests that change in self-esteem was somehow undermining the effect of change in self-concept clarity. When self-esteem change was controlled, condition had stronger effects on self-concept clarity. Perhaps condition of activity was truly affecting the portion of self-concept clarity that does not share variance with self-esteem. The manipulation may have been targeting the portion of clarity that is accurate, and not clarity that is related to inflated self-views brought about by self-esteem. On the other hand, when self-esteem was controlled for in Experiment 2, the effect of condition on clarity actually decreased. Why the difference between experiments? One possibility is that in Study 2 self-esteem was measured just once so that it may be stable levels of self-esteem that interfere with effects of activities on self-concept clarity. Or perhaps it

has to do with the special situation of recalling (vs. actually doing the activities as in Experiment 1). For example, in the Experiment 2 writing task, individuals were reflecting on a past situation that they engaged in and known qualities about their selves were being reported. Their reported self-esteem may be reflective of those known qualities and would likely be highly correlated with their clarity. It is also possible that in writing, individuals are more likely to recall good experiences with activities (especially in rediscovery because these are activities that they have returned to) and this increases their self-esteem because they are reminded of something positive and increases their clarity because they are writing about known characteristics.

Another variable that was examined was enjoyableness of the experience, and this was assessed in Experiment 1. Participants rated the rediscovery activities as the most enjoyable, followed by the control activities, and finally the expansion activities. There was no specific hypothesis posited for this analysis, however it seems likely that rediscovery activities are rated as the most enjoyable for several reasons. First, participants may approach these activities with the knowledge and memory of a prior good experience with the activity. This may make it more enjoyable the second time, because participants have the expectation of it being a good experience. Second, participants may assess the enjoyableness of the activity cumulatively, thinking of how much they enjoyed the first time they did the activity in addition to how much they enjoyed it when they rediscovered it. In the case of an expansion activity, you cannot cumulatively rate the enjoyableness; rather, it is assessed by the single time point of your experience. Another important point to mention is that the Experiment 1 sample (all participants who had recently undergone a relationship break-up) may have rated the rediscovery activities as more enjoyable because participating in these activities reminded them of who they are individually and who they were before their ex-partner. Rediscovery may have been more enjoyable to them, because it reinforced their known sense of self, which after a break-up may have been a much needed and almost therapeutic process. Yet another reason why rediscovery may have been rated as most enjoyable is that it is less risky than completing an expansion activity. Expanding activities, while challenging and rewarding, may not have positive outcomes and may not be liked by the individual. One is pretty confident a rediscovery activity will be enjoyable or not because one can reference the first time he or she engaged in it. There is no such assurance when embarking on an expansion activity.

Experiment 2 examined how positive/calm and positive/aroused emotions may differ by conditions, and no significant differences were found, except for a two way interaction. Within the rediscovery condition, participants reported significantly higher positive/calm emotion. Simple effects analysis revealed a near significant difference with positive/calm emotion being highest in the rediscovery condition as well. It is not surprising that there was no significant effect for positive/aroused emotion, given that the manipulation in this study was a writing prompt. Perhaps in the case of actually completing an activity, positive/aroused emotion would be more likely to change.

There were also no significant differences in significant-other concept clarity between conditions, which suggest that writing about an expanding or rediscovery event shared with a partner (compared with writing about something mundane with the partner) do not necessitate that clarity for one's significant other will change as well. It may be that when giving an assessment of one's own clarity, one brings to mind one's qualities, characteristics, behaviors, but when giving an assessment of a close other's self-concept, that information is not as readily available. This could explain why there were no significant differences in significant-other concept clarity across conditions. However, this result may be somewhat surprising given the differential effects of the three kinds of activities on inclusion of other in the self, to which we turn next.

Interestingly, although clarity in the self-concept did not differ between conditions in the overall sample, inclusion of, or a sense of closeness with, one's closest other did. Inclusion of other in self was significantly higher in the rediscovery condition, as compared with the expansion condition (indeed the significant interaction of condition and inclusion of other in self predicting self-concept clarity prevented it from being able to be analyzed as a mediator variable). There is a well-documented relationship between couples' engagement in expansion and increases in inclusion of other in self (e.g., Aron et al., 2000; Tsapelas et al., 2009). It would be interesting to investigate why, in this case, those in the rediscovery condition reported higher inclusion than in the expansion condition. It is possible that when writing about participating in a rediscovery activity with a close other, one considers every past engagement in this activity, which could be quite numerous depending on the length of the relationship. In contrast, an expansion activity is most likely one that has been engaged in once. Thus, when writing about rediscovery, it may bring to mind more numerous experiences with one's close other than

expansion, and this may increase a sense of closeness and inclusion. This may explain the effect here of higher inclusion being reported in the rediscovery as opposed to the expansion condition.

Moderators and Mediators

Our main hypothesis was not supported directly in Experiment 1 (although with additional covariates there were some significant effects consistent with the hypothesis, Our hypothesis was partially supported in Experiment 2 (those in the rediscovery condition had significantly higher self-concept clarity as compared with those in the expansion and control) but this was only for the subset of the sample writing about experiences with their romantic partner. Significant differences were also found for the overall sample between the rediscovery and expansion condition, with rediscovery having higher clarity. The question then becomes, what mechanisms or influencing variables are accounting for these findings? A proposed mechanism to explain lack of clarity after expansion was change in self-concept domain, hypothesizing that when an individual expands, he or she includes a more diverse range of categories of content of the self-concept, this becomes confusing and contributes to less clarity. However, neither experiment supported the proposed mediation. At the same time, it should be noted that in both of these analyses, conditions for mediation were not met because either condition was not a significant predictor for clarity (Experiment 1) or self-concept domain (Experiment 2). Change in self-concept domain from before to after the manipulation, rather than simply self-concept domain measured after the manipulation, is more likely to play a role in change in clarity or even clarity measured only after the manipulation. If pre-manipulation clarity had been measured in Experiment 2, it would have been interesting to see (since the main effect of condition was significant in this study) if change in domains did contribute to less/more clarity.

To further explore what may be driving the change in clarity, another possible explanation was change in self-esteem. As mentioned earlier, the change in self-esteem seemed to undermine the effect on clarity in Experiment 1, and trait level self-esteem seemed to facilitate the effect on clarity in Experiment 2.

As positive evaluations of the self (i.e., self-esteem) influenced the results, another related investigation was that of the influence of positive emotions. In the case of Experiment 2, emotion experienced did not mediate the association between condition and clarity. Also, conditions for mediation were not met with inclusion of other in self or enjoyableness of activity as potential mediators.

A final relevant hypothesized process was a moderation by sensory processing sensitivity, or how attentive one is to aspects of his or her environment, with all analyses, following standard practice, controlling for neuroticism (by including it as a covariate). Sensory processing sensitivity was not a significant moderator. However results were trending such that if one was low on sensitivity, one reported the highest self-concept clarity if one was in the control condition. If one was high on sensitivity, one reported the highest self-concept clarity if one was in the rediscovery condition. This may suggest that those who were highly sensitive attended more to the information they were writing and the writing prompt affected them in the direction that we were hypothesizing (i.e., rediscovery is connected to higher self-concept clarity). However, these results were not significant. Although it was not a primary focus of the study, a novel and potentially very important finding relevant to understanding both self-concept clarity and sensory processing sensitivity was the significant negative relationship between these two variables.

Strengths

Strengths of the current work include conducting two experiments to answer questions about the expansion process and the effects of life activities on self-concept clarity. Much prior research has focused on correlational studies, especially in the context of self-concept clarity; thus this research offers experimental results to add to the current state of knowledge in both fields of study. Further, this research combines two areas of work (the self-expansion process and clarity of the self-concept) that have not previously been connected.

This work also sought a novel method (i.e., having participants select and participate in activities on their own) of having participants complete expanding, as well as rediscovery activities. Although a potential issue with this method is that participants may not demonstrate high compliance, approximately 90% of participants who agreed to do so did report that they had carried them out, and did indeed engage in the types of activities that they were assigned, further supporting the feasibility of this study design.

Another strength was the attempt to prime self-expansion using a writing prompt. Manipulating self-expansion can be laborious, because participants must either be given an expanding laboratory task or followed before and after expanding activities in the real world. Although interesting expanding activities in laboratories have been conducted (e.g. Lewandowski & Aron, 2004), activities done in a lab may inherently be less expanding than

those accomplished in the real world, for a variety of reasons (e.g., participants may more quickly habituate to their surroundings, outcomes of the activities may be considered less important). In contrast, real world experiences are less controllable and more difficult to measure and to replicate. Having a usable prime for self-expansion gives researchers another method of studying the processes at work in expansion.

Limitations

One limitation to the current work is that the success of the expanding and rediscovery activities could not be determined with the data we collected. A coding scheme was attempted; however, it was evident that participants were, in the majority of cases, describing what they did rather than providing an evaluation of it. This would have been an interesting variable to include in analyses because it would capture how participants think about the activity and about their performance. It is possible that success of the activity would influence how individuals incorporate aspects of that activity in their self-concept. If an activity was evaluated as successful, they may be more likely to include characteristics displayed during that activity in their sense of self.

Also, Experiment 1 could not definitively determine if participants had completed the activities or not. The manipulation check asked participants if they followed directions and completed their selected activities. It is possible that some participants falsely reported their activity completion. However, participants were given the chance to respond that they did not complete the activities. In addition, these data only included those who returned for the part 2 assessment. Although attrition was very low in this experiment (less than 10% of the sample) those who did not return for part 2 most likely left the study because they did not participate in their activities.

Another limitation, in Experiment 1, was that time since the assigned experiences was not measured. It is possible that a stronger effect would have been seen on self-concept clarity if it was measured in the post-test assessment closer to completing the activity. The instructions to participants after the pre-test were that they could complete their activities at any time over the next 2 weeks and then return for the post-test. Fortunately, this freedom may have increased our compliance, but unfortunately it may have resulted with participants completing their activities closer to the pre-test than the post-test, resulting in them having less of an affect by the time of the post-test measurement. Further, if a variable was included that accounted for time since the

activity, it could have been used as a covariate. Similarly, in retrospect, it would have been useful if in Experiment 2 participants had been asked how long ago the activities they were writing about occurred. If they were writing about recent activities, this may have been responsible for the stronger results in Study 2 because the experiences may have been more vivid if they were recent.

Another specific limitation of Experiment 2 was that there was no baseline assessment of self-concept clarity or self-esteem. Although this made the questionnaire faster for participants to complete, not having this information prevented me from being able to include pre-test levels as covariates in the analyses. It is possible that our results would have been different if these variables were accounted for.

It should also be mentioned that both experiments are limited by characteristics of the sample, as participants were all undergraduate students and the majority of them were female (although there were no gender interactions). Including only undergraduates restricts our knowledge of how these variables and processes take place at other ages and limits the generalizability of these results. Unequal gender distributions of study samples is a common limitation when psychology student participation pools are used to recruit subjects, as there are larger amounts of female than male psychology students. A more equal gender distribution would have benefited these experiments, especially in examining gender differences on variables. Further, results from these experiments cannot be generalized across social economic status or other cultural contexts. Results may especially differ in collectivist cultures where the self is defined in relation to a group of close others.

Another issue is that it is possible that the two studies were underpowered. That is, in many cases I found trends or even near significant patterns of results that might have reached significance with a larger sample size.

Finally, it is important to treat many of the key results that were significant cautiously since they were found in exploratory analyses (such as including not originally predicted covariates or investigating particular subsamples that had not been specifically planned in advance). Nevertheless, many of these exploratory results were quite strong and also reasonable in light of previous research and theory, so they at the very least should be taken as potentially important directions for further study.

Future Directions

In addition to possibilities for future research already mentioned, there are further points of interest that may yield great information about these topics if explored empirically. Future research should continue to investigate the contribution of rediscovery activities to the self and relationships. For the self, such activities seem already to be beneficial in increasing clarity, and perhaps other outcomes, such as self-efficacy, may also be influenced by rediscovery. For relationships, it seems likely that rediscovery activities are not only very common but also promote the quality of the relationship. Anecdotally, couples often talk of eating at a favorite restaurant or vacationing at a familiar destination. These activities could be placed in the category of rediscovery, as they are likely not to happen so frequently that they are mundane, but are still shared, enjoyed, and promote positive emotions within the relationship. As rediscovery activities have not been investigated in connection to relationship quality (other than closeness in the present Experiment 2) it would be interesting to focus on how and when such activities are most beneficial.

In addition to examining the contribution of rediscovery activities to relationship quality, future research on self-expansion should investigate expanding activities outside the domain of leisure activities. Prior research on expanding activities has largely confined itself to activities that take place during leisure time. It is likely that other activities such as completing house work, collaborating on work projects, or childrearing often present novelty, challenge, shared cooperation, and may very well be expanding. It would be an interesting line of work to investigate if expanding activities can take place across activity contexts, and which facets of different expanding experiences result in relationship quality. For example, couples doing something new during leisure time, such as going skiing for the first time, may increase relationship quality because the experience promotes positive affect. In contrast, couples doing something new during house work, such as painting a room for the first time, might increase relationship quality because it promotes efficacy.

It would also be interesting to examine the different motivational components underlying expansion and rediscovery. Recent work on expansion shows that it is strongly related to approach motivation and not significantly related to avoidance motivation (Mattingly et al., in press). Thus, those who engage in expansion are motivated by wanting to approach or move towards something positive, however moving away from something negative does not appear to catalyze the expansion process. This seems to fit into the idea that expansion promotes the

addition of new qualities, abilities, and identities to the self. One would be motivated to approach these new outcomes and thus engage in expansion to reach these goals. There may be a different motivational composite for rediscovery activities. It is also likely that rediscovery is motivated by approach goals; however avoidance goals may also play a role, especially if it is an activity that one builds skill in when repeated multiple times. For example, a pianist may be motivated to rediscover playing the piano, because the pianist wants to approach the positive feeling of doing something he or she enjoys, and also avoid the inevitable lack of skill if the activity is not engaged in consistently.

These different motivations may explain some of the effects of the different activities, including how enjoyable they are perceived to be and how they influence the sense of self. It would seem likely that rediscovery activities (if motivated by both approach and avoidance) would have a stronger impact on the self because the individual participating in them is balancing the person he or she is when engaging in the activity and fallout of the person he or she is without the engagement in the activity. In expansion, one does not have this contrast and this may explain why rediscovery activities may be more influential on the self.

One of the themes mentioned throughout the paper is that expansion activities may differ from rediscovery activities in that they carry more risk in participation, because they are novel and never completed before (which may be one reason why participants reported enjoying the rediscovery activities more). However, one interesting facet to consider is that although expansion activities do carry greater risk, they may also be evaluated differently than rediscovery activities. The pressure to perform well in expansion activities may be less than rediscovery because an individual doesn't have a bearing for how to perform given past experience. In a rediscovery activity one knows how one performed the last time one completed the activity, and may feel greater pressure to do as well or better than the past activity engagement. Thus, while one may be more nervous to complete an expansion activity, there may be less fallout if he or she does not perform well.

One final recommendation for future research is to examine the effects of rediscovery and expansion on aspects of the self that are weighed in importance. The current studies did not ask participants how important each of their self-characteristics were to them. Self-theories (e. g., Epstein, 1973) inform us that individuals place their self-characteristics in a hierarchy in which some characteristics are essential, or major to the self, and then others are secondary, or tertiary

to the self. Also, individuals hold a greater quantity of tertiary aspects of the self than major aspects. It is possible that expansion creates confusion in the major aspects of the self (which are fewer) and rediscovery creates confusion in more tertiary aspects of the self (which are more numerous). This pattern may explain the loss of clarity in the expansion conditions; it is not simply the change in the breadth or depth of the self-concept that influences clarity, rather it is change in the more central aspects of the self that creates clarity or confusion.

Conclusion

The current set of studies sought to examine how two different types of experiences, expansion and rediscovery, affected self-concept clarity. Results generally supported the idea that expanding activities are related to a decrease in clarity and rediscovery to an increase in clarity. These findings lay the foundation for further work to examine additional ways that expanding and rediscovery experiences can affect the self, different contextual domains in which they may occur, how different types of motivation influences their engagement and evaluation, and how expanding and rediscovery activities contribute to the quality of close relationships.

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¹ Additional information on the ethnic background of those who indicated “Other” was not collected.

² The Other category was examined for potential, additional categories that may appear within the participants’ responses. No additional category emerged as commonly and frequently mentioned.

³ In all analyses of covariance throughout the dissertation I first examined the assumption of homogeneity of regression by testing the interaction of the independent variable with the covariate. In all cases, this interaction did not approach significance unless stated.

⁴ All effect sizes for *F*-tests were calculated with partial eta squared, $\eta^2 = SS_{\text{between}} / SS_{\text{total}} + SS_{\text{error}}$.

⁵ An additional analysis was conducted adding enjoyableness of activity as a covariate, however condition still remained non-significant $F(2, 187) = .65, p = .52$. Additionally, the contrast between rediscovery and expansion condition was not significant ($p = .32$), the contrast between the rediscovery and control was not significant ($p = .81$), nor was the contrast between the expansion and control condition ($p = .75$).

⁶ The change in self-concept domains was calculated as the amount of new categories in the post-test not in the pre-test, plus amount of pre-test categories which are not in the post-test, minus the amount of same categories and divided by their sum.

⁷ The first step was determining the number of non-redundant pre-test self-concept contents and non-redundant post-test self-concept contents. These two numbers were added together and subtracted by the number of same items in each list and divided by their sum. This number represented the change in self-concept content from pre-test to post-test.

⁸ This analysis was also replicated without self-concept clarity included as a covariate, and it was also non-significant, $F(2, 193) = 1.95, p = .19$, effect size = .04. None of the contrasts comparing pairs of conditions were significant; rediscovery versus control ($p = .13$) expansion versus control ($p = .14$) and rediscovery versus expansion ($p = .97$).

⁹ I examined participants’ responses and the key terms “good,” “tried,” “fun” and “unable” were isolated as frequent descriptions of how they experienced their activities. The words “good and fun” were considered to indicate that a participant was successful, while “tried” and “unable” were considered to indicate an unsuccessful activity. Some examples of how these terms were used are, “went to church, it was *good* to attend and listen to the sermon” or “my friends took me to a club and *tried* to teach me how to dance to Spanish music” or “went to comedy club—it was *fun* and entertaining, I laughed a lot” and finally “because of the weather being cold, I was *unable* to go surfing but spent a few hours watching it.”

Another frequently used term to describe participation in activities was “went.” However, while this word was frequently used, it was not often connected to an assessment of how the

activity transpired, but rather as an account of the activity. For example one participant said, “*went* for a bike ride around town.” For purposes of analyzing the success of the activity, “*went*” was not considered a descriptive term, however the frequency of it was tallied to determine how many participants actually provided the information regarding activity success.

A tally was generated for each time one of the key terms was mentioned. If the same term was mentioned more than once in any activity description, it was only counted once. In addition, if either “good,” “tried,” or “unable” were mentioned along with “went,” then “went” was not tallied in attempts to isolate the more descriptive term. In addition, all terms indicating success (i.e., “good” and fun”) were examined to insure they were not used in a negative connotation such as, “I went to play basketball, and it was *not a good* experience.” There were no such cases in participants’ descriptions. Further, all terms indicating an unsuccessful activity (i.e., “tried” and “unable”) were examined to insure they were not used in a positive connotation. There were no such cases in participant descriptions.

Out of 197 responses of all the activity descriptions, the term “good” was mentioned 14 times, “fun” was mentioned 24 times, “tried” was mentioned three times, “unable” was mentioned once and “went” (alone, without any of the other terms) was mentioned 85 times. In some cases, two terms were mentioned in the same description; “good” and “fun” were mentioned together seven times, “tried” and “fun” were mentioned together three times and “unable and fun” were mentioned together once. Out of the 197 total descriptions, 59 participants did not have any of the selected words. See Table 10 for frequencies of the key term analysis.

Next, key terms were either categorized as successful descriptors (i.e., if a participant mentioned “good,” “fun,” or both of these terms) unsuccessful descriptors (i.e., if a participant mentioned “tried” or “unable” or neutral descriptors (if a participant mentioned “went”). In addition, combinations of successful and unsuccessful descriptors (e.g., “unable” and “fun”) were counted as successful key terms.

Table 10
Frequency of key terms in activity descriptions

Term	N
1. Good	14
2. Fun	24
3. Tried	3
4. Unable	1
5. Went	85
6. Successful	49
7. Unsuccessful	4
8. Neutral	85

$N = 138$.

Due to a small amount of unsuccessful terms, comparisons could not be made. However for exploratory purposes, differences between successful ($N = 49$) and unsuccessful ($N = 85$) terms on aspects of the self and enjoyableness of activities were examined. Post-test residual

scores for self-concept clarity and self-esteem were considered the outcome variables, along with rated enjoyableness of the activity. There were no significant differences on self-concept clarity $t(132) = -.84, p = .40$; self-esteem $t(132) = .04, p = .97$; enjoyableness of activity, $t(132) = -.24, p = .81$; or across experimental conditions, $F(2, 135) = .02, p = .87$. These analyses are limited to what could be gleaned from participants' activity descriptions. Future investigation into this topic should specifically ask participants to describe how and why they feel their activity was a success or failure.

¹⁰Of those who indicated Other, four wrote that they were Egyptian, one said Indian, two said South Asian, and one Kaohmiri.

¹¹The Other category was examined for potential, additional categories that may appear within the participants' responses. No additional category emerged as common and frequently mentioned.

¹²It is important to note that although we had 62 participants in a current romantic relationship, only 48 wrote about their current romantic relationship partners as their closest other.

¹³An additional analysis examined only participants who were writing about their romantic relationship partners as their closest other. This ANOVA was also non-significant, $F(2, 45) = .89, p = .56$, effect size = .03 and no significant contrasts were found.

¹⁴An additional analysis examined only those writing about their romantic relationship partners as their closest other. This ANOVA was also non-significant $F(2, 45) = .83, p = .69$, effect size = .02 and no significant contrasts were found.

¹⁵This analysis was replicated for only those writing about experiences with their romantic relationship partners and while the main effects for condition and sensory processing sensitivity were significant, the interaction was not $F(2, 43) = .52, p = .70$, effect size = .01.

¹⁶An additional analyses examined only those writing about their romantic relationship partner as their closest other. This analysis was also not significant, $F(2, 43) = .67, p = .65$, effect size = .05.

¹⁷Prior to conducting the ANOVA, differences between closest other types (i.e., friend, family member or romantic relationship partner) were examined. As approximately half of the sample (52%) considered their closest other to be their romantic relationship partner, they were compared to those who considered friends or family members to be their closest others. A t -test was conducted with inclusion of other in self as the dependent variable. Results indicated a non-significant difference in IOS, $t(91) = .48, p = .63$, effect size = .05. Those who were writing about their partner did not have significantly higher IOS ($M = 4.88, SD = 1.95$) than those who were writing about a friend or family member ($M = 4.70, SD = 1.63$).

¹⁸ This analysis was replicated with only those writing about their romantic relationship partner, and it was not significant, $F(2, 45) = 2.07$, $p = .13$, effect size = .09. Post hoc comparison (Tukey HSD) revealed no significant differences between conditions.

Appendix A

Demographics experiment 1

- 1.) Gender: Male Female 2.) Date of Birth: _____ Age: _____
- 3.) What is the highest grade you have completed in school?
_____ eighth grade or less _____ some high school _____ high school diploma or equivalent
_____ vocational training certificate
_____ some college (Circle one: Freshman Sophomore Junior Senior)
_____ college degree (bachelor's) _____ master's degree _____ Ph. D. or professional degree
- 4.) Which of the following best describes your race or ethnic background (please check one of the following)?
- _____ Eastern or of Asian ancestry _____ Black or of African ancestry
_____ Hispanic, Latino, or of Spanish ancestry _____ White or of European ancestry
_____ Other (please specify)_____
- 5) Have you experienced the break-up of a romantic relationship in the past 6 months? (please check one)
- _____ Yes (please list the initials of the person with whom you broke-up _____)
_____ No

Appendix B

List of activities in experiment 1

1. Activities involving children (play, musicals, sports, playing informally, etc.)
2. Attending athletic events as spectator
3. Attending church
4. Attending craft or adult ed. classes, fraternal organization meetings, community social events, church suppers, family or club reunions, other socials outside the home
5. Attending lectures, debates
6. Attending movie theater or drive-in theater
7. Attending musical concerts, plays or other drama
8. Attending organized camps
9. Attending parties
10. Attending race tracks
11. Art modeling, painting, photography
12. Bicycling for pleasure
13. Bingo
14. Bowling
15. Boxing, wrestling, judo
16. Canoeing, rowing, sailing
17. Camping
18. Caring for pets
19. Casual conversation
20. Collecting (stamps, coins, etc.)
21. Constructing models, woodwork, metalwork

Appendix C

Correlations between main variables of interest and additional relationship variables

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Pre-test Self-Esteem	—									
2. Pre-test Self-Concept Clarity		.63***	.76***	.62***	.12	.22**	-.003	-.01	-.02	-.02
3. Post-test Self-Esteem			—	.67***	.13	.21**	-.05	.01	-.02	-.03
4. Post-test Self-Concept Clarity				—	.07	.16*	.01	-.05	-.01	-.12†
6. Break-up Impact					—	.04	.05	.01	.12	.05
7. Length of Prior relationship						—	-.15*	.05	.08	.05
8. Time since Relationship ended							—	.21*	.36***	-.15*
9. Time since knowing would break-up								—	.14	-.05
10. Length of Current Relationship									—	.07

N = 196 -197. Higher scores indicate a greater magnitude of each variable.

†*p* < .10; **p* < .05; ***p* < .01; ****p* < .001

Appendix D

Means (and standard deviations) and t-values for relationship variables

Variable	Females Mean (SD)	Males Mean (SD)	<i>t</i>	Effect Size
1. Break-up Impact	3.29 (.47)	2.17 (.50)	1.50†	.09
2. Length of Prior Relationship	91.33 (77.38)	73.79 (73.75)	1.33	.09
3. Time since relationship ended	12.13 (8.89)	13.51 (8.45)	.91	.07
4. Time since knowing Break-up	7.89 (17.32)	3.23 (4.04)	1.75†	.12
5. Length of Current Relationship	7.2 (.79)	9.6 (1.68)	.28	.02

N = 196-197. Higher scores indicate a great magnitude of each variable. All time shown in weeks.

†*p* < .10; **p* < .05

Note: There was also not a significant difference between men and women on current relationship status, (*p* = .56) tested with Mann-Whitney, rank-sum assessment.

Appendix E

Demographics experiment 2

Gender: Male Female

Your age: _____

Your ethnicity (optional) {please check all that apply}

Eastern or of Asian ancestry Black or of African ancestry

Hispanic, Latino, or of Spanish ancestry

White or European ancestry Other (please specify _____)

Your Highest Level of Education Completed: CHECK ONE

Freshman Sophomore Junior Senior

Who is the person you would consider the closest to you? Select one.

friend boyfriend/girlfriend family member

other (please describe) _____

Are you currently in a romantic relationship? Yes No

How would you describe your relationship?

married dating exclusively engaged dating casually

How long have you been involved in this relationship?

__ years __ months __ weeks (*e.g. 1 years 3 months 2 weeks OR 0 years 0 months 3 weeks*)

Please use the following scale to indicate how you feel.

0	1	2	3	4	5	6	7	8
Do Not Agree				Agree				Agree
At All			Somewhat					Completely

____ I feel satisfied with our relationship.

Appendix F

Writing manipulation

Control

INSTRUCTIONS: Think about the **person** whom **you would consider the closest to you** (this can be a **best friend, boyfriend/girlfriend, or family member**). Write their initials **HERE** (). Fill out the following writing activity **with this person in mind**.

Write about things that **you normally do** on a day to day basis **with the person closest** to you.

Expansion

INSTRUCTIONS: Think about the **person** whom **you would consider the closest to you** (this can be a **best friend, boyfriend/girlfriend, or family member**). Write their initials **HERE** (). Fill out the following writing activity **with this person in mind**.

Recall a time where **you and () did something new together that you had never done before** and was **fun and exciting and even difficult to do at first**. Write that activity **HERE** _____

Describe what the two of you are doing in this activity. How did you feel while you are doing this activity?

Rediscovery

INSTRUCTIONS: Think about the **person** whom **you would consider the closest to you** (this can be a **best friend, boyfriend/girlfriend, or family member**). Write their initials **HERE** (). Fill out the following writing activity **with this person in mind**.

Recall a time where **you and () did something together A SECOND TIME** that you had enjoyed doing the first time. Write that activity **HERE** _____.” Describe what the two of you are doing in this activity. How did you feel while you are doing this activity?