A Language of Love: The effect of social primes on written narratives

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Abstract

Considerable work has been done in the fields of social and developmental psychology addressing the role of close relationships in influencing behaviors, thoughts, and emotions. Additionally, there is a growing psychological literature regarding the health benefits of expressing oneself through language, and how individuals differ in communication styles and narrative construction. This study aims to bridge these two emerging fields of empirical investigation. To date, no lines of research have been explored to assess the explicit influence of close relationships on how individuals express themselves using language. In the present study, participants were primed to think about a real life experience with a close other, or a casual acquaintance (as a control). They were then asked to perform a stream-of-consciousness writing exercise, describing their thoughts and feelings about their transition to college. The written texts were subjected to a word-count computer analysis program that searches for patterns of language belonging to various linguistic, psychological, and sociological categories. In participants' written responses, the prevalence of certain terminology significant to close relationships was found to be greater among those primed with a close relationship experience. Individuals' close relationship styles, as measured through questionnaires, moderated this effect. The implications of these results can potentially inform relationship counseling, strategies for effective interpersonal communication, and contribute to the already established tradition of using writing as a form of psychological catharsis.

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Possession of a personal life narrative allows individuals to structure and organize their experiences into a coherent format. A narrative can integrate memories, feelings, ideas, and encounters, into a dynamic network that grows and changes with new experiences. Expressed through language, a narrative can have the function of reconciling distressing or painful events (Pennebaker & Seagal, 1999). This process can create a fixed representation of a difficult past occurrence, allowing it to be stored away without constant interferences brought on by a lack of resolution. Expressing emotions and thoughts via language can have extremely beneficial effects on health, especially in the realm of alleviating negative outcomes (Lepore, 1997; Smyth, 1998).

The present research aims to understand how close relationships influence the formation and structure of these life narratives. According to the evolutionary psychologist John Bowlby (1969), attachments are close bonds between individuals and the important figures in their lives, beginning in infancy. Attachment figures are targets sought out during times of distress, and contact with such figures can be both comforting and reassuring. Attachment relationships are governed by what Bowlby termed an "internal working model" of attachment, influencing the negotiation of attachment relationships throughout the life course. The internal working model is a cognitive-affective system based on experiences in close relationships, which constructs an organizational framework to guide expectations for future relationships. As such, the internal working model governs relational behaviors, cognitions, and emotions, and is unique to every individual based upon his/her specific interactions.

The internal working model has been theorized to function in accordance with a series of "scripts" (Mikulincer, Shaver, Sapir-Lavid, & Avihou-Kanza, 2009). Scripts can be thought of as guidelines for attachment expectations and behaviors, serving as a fundamental structure imposed on the processing of events and the application of existing knowledge to new situations. The function of a script mirrors that of a personal narrative, and in a sense serves on its own as a

template for narrative generation with respect to close relationship experiences. An example of

what is addressed in a script could be, "If I am distressed, will a close other be available, and will

that person provide the necessary comfort to alleviate that distress?" Mikulincer and his research

team (2009) have shown that "scripts" can be accessed across a number of domains, including

storytelling, lexical decisions, and dreams. The scripts can also be accessed automatically, often

bypassing conscious deliberation. Scripts differ among individuals largely as a function of their

attachment security or style.

The notion of different attachment styles was first explored as a phenomenon in infancy

by Ainsworth, Blehar, Waters, and Wall (1978) through the use of the Strange Situation

paradigm. Attachment style categories have been conceptualized to categorize adult relationships

as well, particularly in romantic contexts (Hazan & Shaver, 1987). Such individual differences

have been reassessed through more orthogonal dimensions of attachment anxiety and attachment

avoidance, as a means to establish more fluid and continuous characterizations (Brennan, Clark,

& Shaver, 1998; Fraley, Waller, & Brennan, 2000). Individuals with secure attachments tend to

expect close others to be available when they are experiencing distress, and will seek them out

when needed. They have a positive overall representation of their close relationships, and

associate their attachment figures with important attachment functions such as safe haven and

secure base (Ainsworth, Blehar, Waters, & Wall, 1978). Those with insecure attachments, on the

other hand, may have difficulties in forming consistent expectations, or in executing attachment

behaviors toward others. Individuals high on attachment anxiety often seek out attachment

figures prematurely, expressing a strong desire for contact comfort even at relatively low levels

of distress, before a situation creates considerable distress. At the core of their worries is a

profound fear of abandonment, particularly by loved ones. This chronic concern limits self-

sufficiency and independence, and reflects a hyperactivation of the attachment system among

anxious individuals. Individuals high on attachment avoidance, on the other hand, rarely seek

out attachment figures, even when they could potentially be instrumental in alleviating distress. This attitude can result in considerable loneliness or emotional distancing, and reflects a suppression strategy employed by those with avoidant attachments, especially in relational contexts (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000). Avoidant individuals tend to push attachment thoughts and emotions away from the forefront of their minds, often unconsciously.

Researchers may activate the internal working model through the presentation of attachment representations in a number of ways. By utilizing priming procedures to highlight normative phenomena or individual differences, experimenters can measure effects of attachment and attachment style on behavioral or motivational outcomes. Normative procedures include reminding individuals of their closest relationships, embedding attachment themes into reading exercises (Green & Campbell, 2000), or threatening feelings of security, motivating a desire for closeness with attachment figures. Individual differences can be primed by motivating the sort of processing typical to a particular attachment style (Bartz & Lydon, 2004; Gillath, Giesbrecht, & Shaver, 2009; Green & Campbell, 2000; Miller & Noirot, 1999). Exposing participants to subliminal imagery or words that will activate the attachment system has been shown to affect performance on a variety of tasks, such as the evaluation of neutral stimuli, lexical-decision tasks, or Stroop tasks (Mikulincer, Hirschberger, Nachmias, & Gillath, 2001; Mikulincer, Gillath, & Shaver, 2002). The motivation of attachment ideation can be accomplished through supraliminal procedures as well, such as asking participants to think about or describe a significant other versus an acquaintance, (as a control), or an experience with positive or negative relational encounters (McGowan, 2002; Miller & Noirot, 1999).

The goal is to link attachment thoughts and feelings to the narrative construction process through a similar priming procedure, and by using language production as a behavioral outcome measure. Pennebaker and colleagues have shown that individual differences in patterns of

language use reflect variability in a number of important characteristics, including personality style, depression status, and attitudes toward eating disorders (Rude, Gortner, & Pennebaker, 2004; Lyons, Mehl, & Pennebaker, 2006; Pennebaker, Mehl, & Niederhoffer, 2003).   His research team developed a software known as the Linguistic Inquiry and Word Count (LIWC), which is a word-count program equipped with dictionaries of terms spanning a multitude of psychological, sociological, and linguistic categories. Narrative analysis in Pennebaker's work consists primarily of comparing results of word counts in different dictionary categories, which represent percentages of a certain type of language expressed in a given narrative.

     Function words, while beyond the primary scope of the present study, have received a great deal of attention because of the unique role they play in highlighting distinctions among individuals in style of communication (Groom & Pennebaker, 2002; Chung & Pennebaker, 2007). Function words have been explored with respect to close relationships as well, and serve as an important indicator of whether or not similarity in individuals' styles of communication will predict relationship success (Ireland, Slatcher, Eastwick, Scissors, Finkel, & Pennebaker, 2011). The use of function words, while often glossed over in reading or recollection, is one of the few linguistic variants that can show immense differentiation between individuals. Content words, which are usually specific to a given subject matter, cannot display this same fluidity. If an intended message is to be conveyed through language, alteration of content words could change the basic meaning altogether, whereas differences among function words may only alter subtler and more paralinguistic elements of communication. While measuring the occurrences of certain words does not, on the whole, offer the same perspective as an analysis of context, syntax, or prosody, the research conducted by Pennebaker has supported that this type of examination can be very fruitful in generating meaningful correlations with personality styles and other important individual dimensions (Pennebaker & King, 1999).

Driving the current research is the notion that exposure to representations of an attachment relationship can influence patterns of language use in much the same way as can personality type, mental state, or social background. Pennebaker's research has pinpointed linguistic styles as salient individual differences, which are routinely influenced by these and many other factors. Previous research has identified correlations between attachment style and the use of certain words relative to trust and support in LIWC analyses of Adult Attachment Interview transcripts (Schachner, Shaver, & Gillath, 2008). To implicate attachments as motivators of linguistic style would more concretely link the internal working models and scripts with quantifiable behaviors that are significant to relational contexts. To my knowledge, this association has not been explored in previous lines of research assessing the role of attachment priming in influencing behavioral or motivational outcomes. This is the first study to highlight an unexamined contributor to individual differences in linguistic narrative construction. By priming individuals with an attachment relationship, the hope is to isolate the effect of attachment on individuals' approaches to narrative construction and communication.

The main hypothesis for the present study is that patterns of language production, measured via word usage, will be influenced by activating representations of significant others. The expectation is that those primed with an attachment relationship will produce language with greater instances of words relevant to attachment, including topics such as trust, commitment, reliance, intimacy, separation, anxiety, distress, and security, than those exposed to a neutral prime. Further associations are anticipated as a function of attachment style. Previous research employing text-analysis programs has identified theoretically consistent differences in Adult Attachment Interview narrative patterns as a function of attachment style (Buchheim & Mergenthaler, 2002). Consistent with their chronic activation of attachment thoughts and feelings, anxiously attached individuals are expected to produce the greatest amount of attachment-themed language. This effect will be enhanced in the attachment priming condition,

reflecting a prime x anxiety interaction. Avoidant individuals are expected to produce the least amount of attachment-themed language. Also anticipated is an interaction with priming condition here, whereby avoidant individuals primed with attachment will produce the overall smallest amount of attachment-themed language. This result should emerge as a function of the suppression strategy employed by avoidantly attached individuals, such that they inhibit attachment cognitions and emotions from their expressive repertoire when such themes are made more salient (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Mikulincer, Dolev, & Shaver, 2004).

Method

Participants

Sixty-six Cornell University undergraduates, fifty-two females and fourteen males, participated in the present study (*M* age = 19.65, *SD* = 1.21). This gender distribution was heavily dominated by females, and so outcome measures may reflect effects among women more so than among men. Only fluent English speakers were recruited, so as to avoid any bias in language production related to limited vocabulary or the use of circumlocution in lieu of direct translation. Participants were recruited through an online sign-up program provided by the Department of Psychology. Within the sign-up program, the experiment was entitled "Exploring Language." The description that followed read, "The experiment is about how people use written language to express thoughts and feelings. In the session you will be asked to perform a thinking task, a writing task, and to complete a few brief surveys." Students participated as a means to acquire extra credit in their Psychology, Human Development, or related social sciences courses.

Apparatus

The experiment employed the Inquisit program (Inquisit, 2008) on a Dell Optiplex 755 computer with a Dell UltraSharp Monitor.

Materials

The LIWC was supplemented with a dictionary of attachment terms, broken down into positive, negative, and neutral valences. This dictionary (see *Table 1*) was created using an *.rtf* document that could be uploaded into the LIWC program. The items were tagged with numerical labels representing "attachment," "positive attachment," "negative attachment," and "neutral attachment." Items tagged with the "attachment" label could, of course, receive one additional label. The participants completed all survey questionnaires on the computer. The computerized survey packets consisted of the Experiences in Close Relationships questionnaire (Fraley, Waller, & Brennan, 2000), the WHOTO questionnaire (Hazan & Zeifman, 1994), the Ten Item Personality Inventory (Gosling, Rentfrow, & Swann, 2003), the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988), the Social Closeness component of the Multidimensional Personality Questionnaire (MPQ) (Tellegen & Waller, 1992), a manipulation check (see Appendix III), and demographics questions. The manipulation check served to ensure that participants were able to choose an appropriately vivid memory on which to reflect for the prime. The language data were analyzed as text files through the LIWC software.

Procedure

Pretest. The items for the supplemental attachment dictionary and each valenced subcategory were selected from a pre-test, where judges with expertise in attachment theory were asked to rank the extent to which each of a set of terms already present in the LIWC dictionaries were appropriate to the theme of attachment, and the emotional valence of these terms (see Appendix V). The scales were presented as two 7-point Likert-type scales. The pre-test data were analyzed using the primary inclusion criteria of a score of 5 or above on the question of appropriateness to the attachment category. A valence score of 3 or below constituted negative valence, and a valence score of 5 or above constituted positive valence.

Prime. Participants were first exposed to the prime on the computer (see Appendix I). Participants were asked to recall and envision for 2 minutes a recent experience spent either with a close other, or a non-influential casual acquaintance. This priming procedure was chosen for a number of reasons. We did not want to prime any particular prescribed individual, nor any specific event that could be explicitly connected to the dependent variable writing topic. In describing the multi-faceted affect laden experience of transitioning to college, participants could choose to focus on any number of different components, such as living independently, creating new friendships, separating from home life, or encountering greater academic challenges. Our goal was to avoid suggesting that any one of these aspects were a more "appropriate" context for the envisioning exercise. The issue with priming a prescribed figure would be that it could actively bias the focus of the written response to that person, which would not reliably show that attachment ideation relevant to significant other representations had been activated, only that the particular person had been. Additionally, a written prime, often used in the attachment literature to activate thoughts of a person or experience (e.g., McGowan, 2002), was intentionally avoided in the present study. This measure was taken to avoid pre-empting the process of language production, which was explored as our dependent variable, by activating the language system as part of the independent variable. The prime was intended to elicit thoughts of relational associations, either to close attachment figures, or to less influential casual companions, in an effort to motivate a cognitive-affective lens with which to approach the college transition question. We wanted to establish a prime that could promote a range of patterns in language use, operationalized as word choice, and not so much a range of content categories generated from varying interpretations of the open-ended prompt. As such, we expected that the prime would affect participants' organizational framework for negotiating a response, which would in turn affect the expressive and communicational strategy they employed, as opposed to the overall content on which they opted to focus.

Protocol. Participants completed the entirety of the study in a single sitting at the research lab. As many as two participants could be run simultaneously at adjacent computer monitors. The participant(s)s were handed two copies of the consent form, one to fill out and one to optionally keep for their own records. They were then given the opportunity to ask any questions regarding the consent form and their rights as voluntary participants. Participants were then seated in front of the computer monitor, where they were first exposed to the prime for which they were asked to envision an experience with a close other/acquaintance for 2 minutes. Following the prime, a writing prompt appeared on the screen, instructing the participant to write continuously for 10 minutes on the topic of their experiences upon first coming to college (see Appendix II & Appendix IV). Once the 10-minute period had ended, they were exposed in sequence to the computerized surveys and questionnaires. Finally, they were shown a debriefing form on screen and asked if they had any questions regarding the study.

Results

Preliminary analyses yielded no statistically significant main effects of gender or age on the production of attachment-themed language. It is important to note, however, that the number of male participants was too small and the age range too restricted for reliable comparisons. Previous research utilizing the LIWC program indicated that there are no significant linguistic style differences as a function of gender (or sexual orientation, which was not assessed in the present study) (Groom & Pennebaker, 2005), so subsequent analyses were collapsed across these demographic categories. Additionally, there was no significant moderation of any main effects for any Big Five personality traits, as assessed by the Ten Item Personality Inventory, nor for any social closeness measures, as assessed by the abbreviated Multidimensional Personality Questionnaire. The percentages of words belonging to dictionary categories were automatically calculated and presented as table data generated by the LIWC (Linguistic Inquiry and Word Count) software.

An independent samples t-test was conducted to calculate the difference in attachment language produced by individuals in each of the two prime conditions. Consistent with predictions, there was a main effect for prime (attachment vs. acquaintance). Those primed with an attachment envisioning exercise prior to the writing task produced significantly more attachment terms in their open-ended written responses as opposed to those in the neutral prime condition ($M_{attachment}$= 2.444, *Range* = 0.400-5.700 $M_{acquaintance}$= 1.938, *Range* = 0.600-3.700; *t*=2.22, *p*=0.03; see *Figure 1*). Attachment ideation, prompted by significant other representations as seen here, appears to infiltrate the transformational process that converts thoughts and feelings into a communicative medium. The interpretation of this result, however, is weak at best. The valenced subcategories of the attachment dictionary were created in anticipation of this ambiguity. While there is evidently a difference in the language produced in each priming condition, the nature of the impact of thinking about an attachment relationship on the narrative generation process is not very clear. To explore the priming effect more closely, regression analyses were conducted to measure the impact of priming condition on positive, negative, and neutral attachment language production. However, regression analyses did not yield significant results for the valenced subcategories of the attachment dictionary.

No significant main effects were found with respect to the association between attachment style and language production (see *Figures 2 & 3*). If there is a general role of attachment style in motivating certain language production regardless of prior attachment priming, the data of the present research have not pointed to it.

In an effort to account for the significant main effect observed in our initial analyses, a specialized MACRO for the SPSS software was employed to conduct further regression analyses to measure the interactions of prime with attachment style (Hayes & Matthes, 2009), and their effect on each of the valenced subcategories of the attachment dictionary. This MACRO allows the SPSS program to generate not only the interaction effect for the regression model as a whole,

but also the effect at continuous levels of the independent variables for attachment anxiety and avoidance. Predictions regarding the interactions between anxious attachment and attachment language production were not supported. However, an interaction did emerge with respect to avoidant attachment and prime condition. The overall model was significant, and in line with predictions (B = -0.3846, t (58) = 2.0136, p = 0.0487; see *Figure 4*). Examining these results more closely, what emerged was a complementary pattern to what had been explicitly predicted. Namely, individuals with lower ECR-r scores for avoidant attachment produced a significantly greater percentage of positive attachment words than did those with higher scores for avoidant attachment, when primed with the attachment envisioning exercise. In other words, the explicit hypothesis that *high*-avoidance individuals would produce *less* attachment language when primed with an attachment relationship was not strictly supported. In fact, it was *low*-avoidance individuals who produced *more* attachment language when primed with an attachment relationship, and specifically positively valenced attachment language.[1] Interestingly, this effect only became significant (as opposed to marginally so) when affect was controlled. This distinction is important, because it is often difficult to disambiguate the effects of attachment from positive emotionality when measuring behavioral outcomes. The fact that the effect became more salient, as opposed to less so, when affect was controlled, lends substantial support to the idea that activation of attachment ideation can occur independently from, and exert independent effects to, positive or negative affect.

Discussion

The goal of the current study was to establish a link between attachment and the cognitive-affective mechanism by which narratives are generated. Individuals primed to envision past experiences with close others (presumed attachment targets) were expected to respond to an open-ended prompt with a greater degree of attachment-themed language than those primed to envision past experiences with casual acquaintances. It was also predicted that

dispositional styles of attachment security would moderate the effect of the prime on the production of attachment-themed language.

Consistent with the first hypothesis, a significantly greater percentage of attachment-themed language was found in analyses of the texts produced in the attachment prime condition as opposed to the acquaintance prime. Further analyses revealed that valenced attachment language was specifically affected by the interaction of the prime condition with attachment style.

Attachment anxiety and attachment avoidance were calculated along two separate scales from the survey data. It was anticipated that individuals with higher attachment anxiety scores would produce a greater degree of attachment language than those with lower anxiety scores, regardless of prime. This hypothesis was not supported by the data, however. Also counter to initial predictions, individuals scoring high on attachment avoidance did not produce significantly fewer attachment-themed words in their open-ended responses over both conditions. The results obtained from these analyses might be indicating that the predictions made with respect to style-based effects on language production were too generalized. However, avoidant attachment did show a significant effect on attachment language when combined with the effects of the prime. The suppression strategy employed by avoidantly-attached individuals reflects a chronic inhibition of attachment cognitions and emotions, but especially so when a situation or encounter might stimulate them. Perhaps this is why attachment avoidance could only be associated with language outcomes during the prime condition when attachment representations were elicited from participants. The observed interaction effect was the complement to the hypothesized outcome, such that low-avoidance individuals produced more attachment-themed language (specifically positively valenced) when primed with attachment. While this indicates that there is certainly a relationship between attachment avoidance and attachment priming, it may say more about how secure individuals handle expressive writing, as

opposed to avoidant individuals. Secure individuals, who score low on both attachment anxiety and attachment avoidance, would be expected to respond positively to an attachment prime, and the expectation is that this propensity would extend to the production of positively valenced attachment-themed language. This conclusion, however, would only be valid if participants scoring low on attachment avoidance also scored low on attachment anxiety, and still produced the most positive attachment language when primed with an attachment relationship. At higher avoidance scores, the interaction effect was considerably closer to significance than at mid-level scores, indicating less positively valenced attachment language coming from attachment-primed avoidant individuals. This trend does support our hypothesis in its stronger form. Previous research also lends support to this claim, such that attachment avoidance and attachment anxiety have been connected to more negative descriptions of hypothetical contexts relevant to close relationships (Collins, 1996). With a larger sample size, it is possible that this effect could be borne out too, and both our hypothesis and its complement would be validated across the full range of avoidance scores.

Overall, this investigation established a causal link between ideation surrounding attachment relationships and language production. The formulation and expression of meaningful life narratives can be reliably altered, at the level of word choice, by attachment priming. The mindset one occupies when producing language unsurprisingly influences how that language is produced, especially when the communication is personally relevant. The role that our close relationships play in how we express ourselves can be explained by the intersection of linguistics and personality psychology, as shown by the current study. Our linguistic styles are a central part of our social makeup, and derive influence from significant encounters that penetrate the narrative formation process.

A number of important limitations must be noted with respect to the present investigation. While the attachment prime utilized here served a very specific set of foci, it is not

among the more common approaches in the existing literature. More frequently, the priming of

established individual attachment figures, whether subliminally or supraliminally, has been

preferred. The envisioning experience of participants that we employed cannot be controlled or

standardized as easily, not only because the type of experience was not specified, but there was

no measure instituted to ensure that the experience chosen by participants was spent with a true

attachment figure (as assessed by the WHOTO measure). Attempts to replicate this research

should certainly include a more in-depth manipulation check. Additionally, these results could be

extended and expanded through the use of different attachment priming procedures as well as

other language-elicitation tasks.

Another limitation rests with the size and constitution of the sample. Experiments

utilizing written texts and the LIWC program have drawn samples comparable to our own, but

sometimes as large as several hundred participants (Pennebaker & King, 1999; Pennebaker,

Mehl, & Niederhoffer, 2003). Many of our marginal effects or trends could be borne out with a

larger sample, and the influence of outliers could be better controlled. Also, the sampling group

of university undergraduates is invariably limited demographically, but was necessary both due

to convenience as well as the topic of the open-ended prompt. The generalizability of our

findings are therefore restricted to similar age groups, and further studies expanding the topic of

the prompt and the subject pool should be explored. Also, the salience of the college transition

could be vastly different within our sample, due to factors such as transfer status and

undergraduate year. Preliminary analyses indicated no significant age differences, but as

narratives are dynamic and fluctuate with the recency of events, this investigation could not fully

capture whether there was any pattern in narrative style that emerged as a function of the recency

of the college transition.

The restrictions of word count techniques are naturally called into question as well,

despite the immense theoretical justification of their value (Pennebaker & King, 1999;

Pennebaker, Mehl, & Niederhoffer, 2003). New techniques utilizing the LIWC system allow researchers to use word pairs or larger word combinations as tagged items, separated by hyphens. For example, while our methodology would have tagged the phrase "I love my mother" as having one positive attachment term ("love") and one neutral attachment term ("mother"), the newer approach could capture the entire phrase "love-my-mother" as a single positive attachment item. In order to fully capture the influence of attachment relationships on narrative generation, it may be wise to conduct further studies implementing both word count techniques, as well as broader, more qualitative styles of language analysis. Further, our particular supplemental attachment language dictionary could likely benefit from greater specificity and breadth. The results obtained regarding the association between valenced attachment language and a number of the outcome variables were likely skewed by the fact that the negative and neutral subcategories of the attachment dictionary contained far fewer items than did the positively valenced subcategory. With a greater number of entries in the other categories, it is possible that we could have obtained more robust results. Additionally, there was no explicit check in place to determine which words in each dictionary category were used most. For example, the word "friend" was very common in a number of the narratives produced, raising the percentage of words in the positive attachment category. Words like "companionship," however, were produced far less often. Future studies could employ a more specific analytic lens to more closely examine which items within a given dictionary category are most responsible for its representation in a given narrative.

Finally, the length of the writing exercise may be an area for some concern. The existing literature utilizing the college prompt paradigm (Pennebaker & King, 1999) called for a 20-minute free-writing exercise, as opposed to the 10-minute one used here. Prior testing ,however, indicated that 20 minutes was excessive for most participants, who experienced considerable boredom and a loss of ability to generate more stream-of-consciousness material. This is a non-

negligible concern, because the content of a written narrative could change drastically once the stream of consciousness is markedly interrupted, and the expressive and linguistic style could change dramatically along with it. The length of the exercise was also an issue because written exercises may serve the inadvertent function of priming themselves. This unintended priming is a concern because it may mask the effects of the intentional prime (the envisioning exercise). While participants were encouraged to "Just keep writing," as a tacit discouragement to re-read or review what they had written while the exercise was still ongoing, there was no measure in place to check this control. Future research should attempt to replicate or improve upon the present results with methodology that further eliminates some of these potential confounds.

The current study was the first to examine the link between attachment theory and the linguistic narrative literature. The research has many implications for psychological therapy through the use of writing. The therapeutic role of writing has already been shown to alleviate distress and some aftereffects of trauma (Pennebaker & Seagal, 1999), a finding that largely stimulated the growth of word count techniques and the exploration of linguistic styles in narrative generation. The present research can expand on the therapeutic value of writing by more directly addressing the role of close relationships in influencing how some social difficulties and challenges are communicated, both to oneself and to others. It may also be beneficial to utilize attachment priming in conjunction with therapeutic writing exercises. If, as the present results indicate, low-avoidance individuals produce more positive attachment language when primed with an attachment relationship, then it is possible that priming individuals with their attachment figures before asking them to write a journal or diary entry could augment the cathartic effects of the writing itself. This could be especially useful for individuals who score high on attachment anxiety, but do not manifest the same degree of attachment avoidance.

Additionally, the manner in which different individuals' narrative styles are affected by their close relationships can inform interventions directed at helping struggling couples. Understanding how one's significant other incorporates the relationship into their own personal narrative can help in communicating concerns in the relationship, and working toward a mutually beneficial goal that satisfies both parties.

One final implication of the current research regards contributing to the intersection of the developmental and cognitive literatures. Research on the role of early attachment in influencing school-age cognitive abilities begins to address how the environment of early caregiving can stimulate cognitive growth (Moss & St-Laurent, 2001). Attachment relationships have been shown to stimulate cognitive engagement on the part of the child, as well as more motivated instruction on the part of the parent. Additionally, research on child development has begun to explore the role of mother-child interactions in contributing to emerging literacy (Bus & van IJzendoorn, 1988). While these lines of research address how attachment relates to the tone of child-caregiver interactions, even with regard to scholastic material, they do not explore much in terms of any causal relationship between attachment bonding and language development. Future research should attempt to isolate the effect of the attachment relationship, as well as moderating effects of attachment security, on an individual's ability to learn and use language throughout the life course. Investigations could further explore if the degree of complexity of language produced varies predictably with attachment style longitudinally, or if it varies as a function of a given relationship an individual has with another person.

In adulthood, there is evidence from text analyses of the Adult Attachment Interview that early attachment experiences longitudinally affect the tone of narratives among securely attached and insecurely attached mothers (Appelman, 2000). While it would be relatively intuitive to suggest that caregivers promote a good deal of early cognitive development through the provision of teaching, indirect language data, and one-on-one activities, the possible role of

attachment in stimulating the particulars of cognitive growth have not been examined. From a

nurture perspective, because language is so central to the vital interactions that motivate the

formation of our earliest attachments, it is conceivable that language learning is guided by our

attachment relationships more directly. In terms of the trajectory of early childhood, the internal

working models are built up side by side with our developing ability to acquire and manipulate

language, so the use of language could be closely tied to our expectations and behaviors with

close others. This connection, if one exists, has not been explicitly demonstrated, but the

implications for parenting, pedagogy, and cross-cultural research, could be immense.

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Table 1: Positive attachment, negative attachment, and neutral attachment dictionary terms
(note: neutral attachment terms were tagged with an "attachment" label, but no further valenced
labels; asterisks indicate word parts, after which all combinations of letters are accepted)

Positive Attachment

Beloved	Rely	
Bond	Respond*	
Boyf*	Responsiv*	
Bro(s)	Romanc*	
Brother*	Romantic*	
Care(s, d)	Safe*	
Caress*	Secur*	
Caring	Sensitiv*	
Close(ness)	Snuggl*	
Comfot*	Soulmate*	
Commit(ment*)	Support(ed, er*, ing, ive*, s)	
Committ*	Sweetheart*	
Commun*	Sweetie*	
Companion(s)	Together	
Companionship	Trust*	
Compassion*	Understanding*	
Confide(d)	Understands	
Considerate	Woo(ed, ing)	
Cuddl*		
Darlin*		
Embrac*		

Neutral Attachment

Dad*
Daughter*
Famil(y, ies*)
Father*
Grandchild*
Granddad*
Granddau*
Grandf*
Grandkid*
Grandm*
Grandpa*
Grandson*
Granny
Help
Husband*
Mom(s)
Momma*
Mother(s)
Mum
Need
Nephew*
Niece*
Pa
Partner*
Relationship*
Sis(ter*)
Son(s)
Spous*
Understand

Enamor*
Explor*
Fond(ly, ness)
Friend*
Girlfriend*
Heartfelt
Hold*
Hubby
Hug(s)
Hugg*
Kiss*
Lay*
Love(d, r*, ly, s)
Loving*
Loyal*
Makeout*
Mommy*
Motherly
Nuzzl*
Pal(s)
Passion*
Reassur*
Relax*
Reliab*

Negative Attachment

Abandon*
Alone
Anxi*
Avoid*
Betray*
Depend(ed)
Discomfort*
Distant
Distrust*
Divorc*
Heartbreak*
Heartbroke*
Ignor*
Insecur*
Insensitiv*
Intrusive
Isolat*
Pain(ed, f*)
Reject*
Separat*
Unemotional
Unlov*
Unresponsive

Figure 1: Main Effect of Priming Condition on Participants' Production of Attachment-Themed
Language
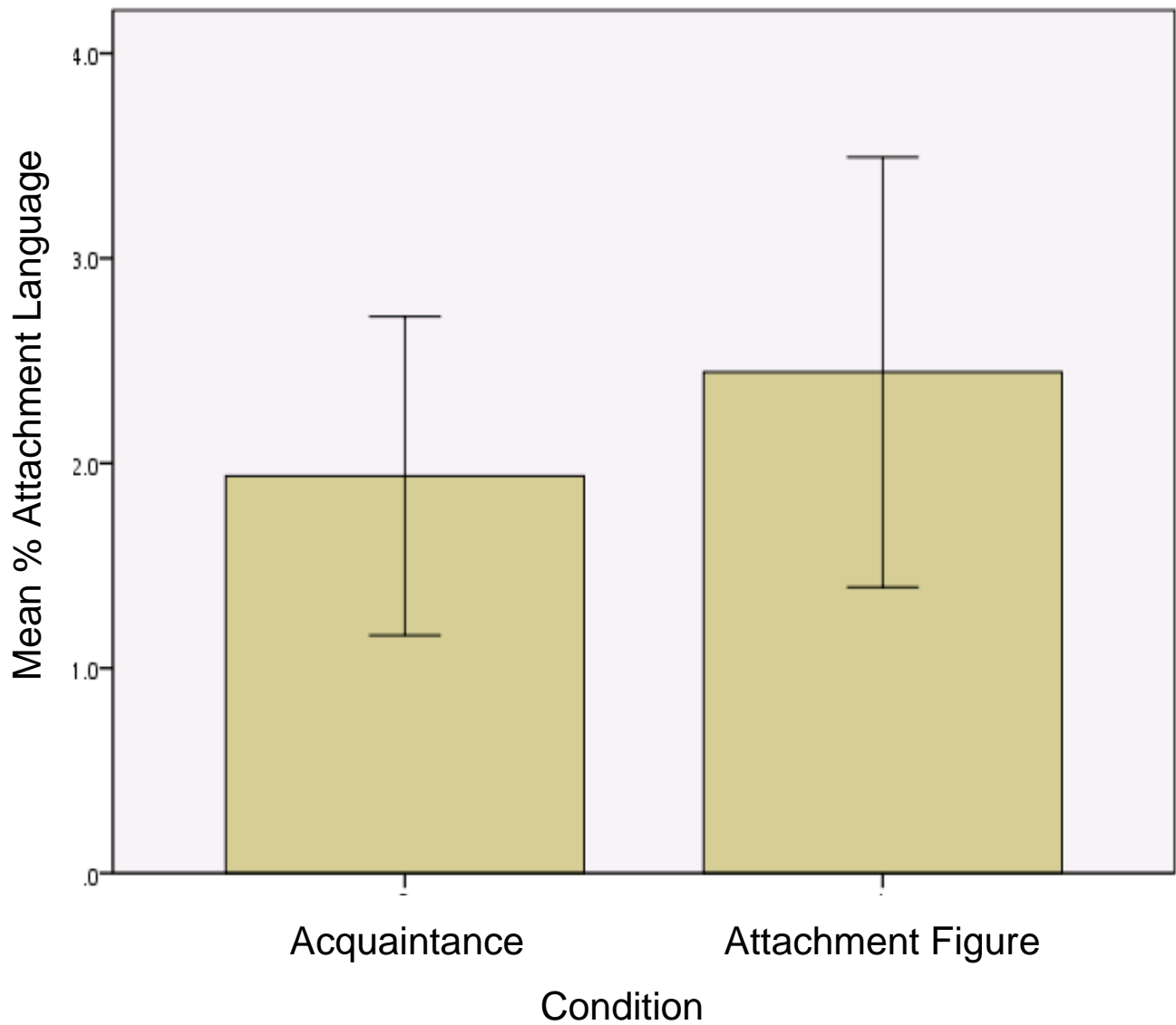
Figure 2: Main Effect of Attachment Anxiety on Participants' Production of Attachment-
Themed Language
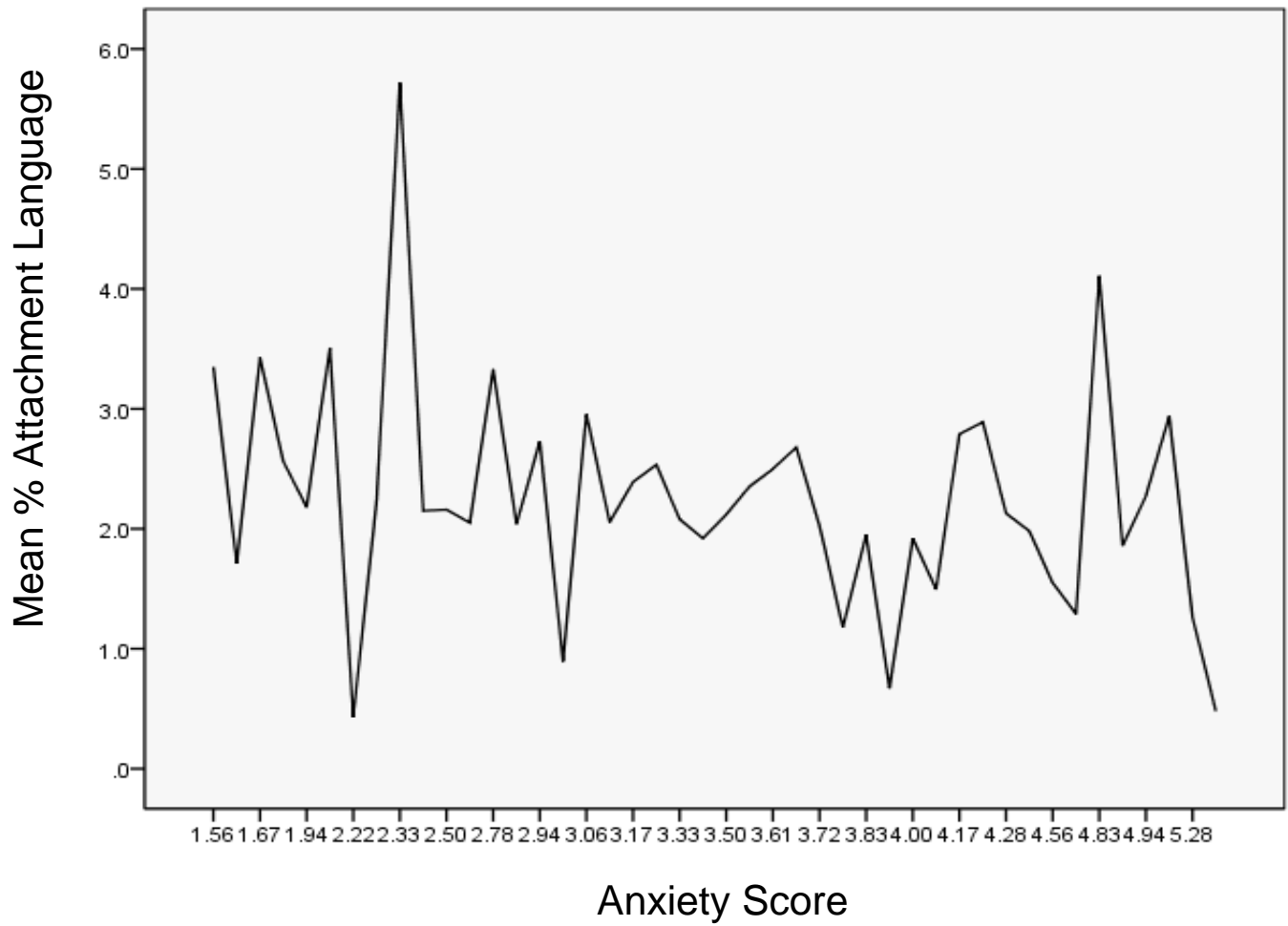
Figure 3: Main Effect of Attachment Avoidance on Participants' Production of Attachment-Themed Language
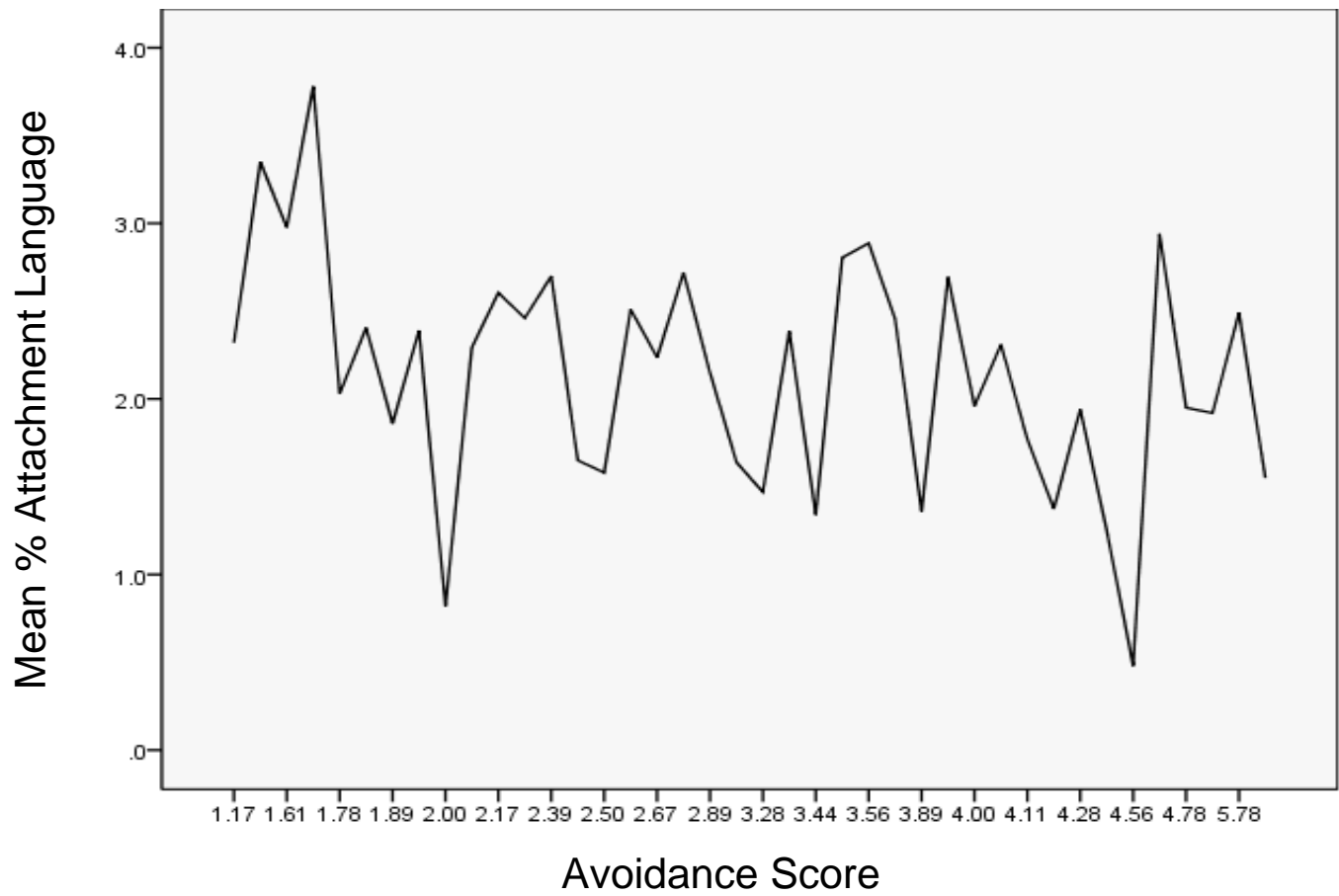
Figure 4: Condition X Avoidance Interaction on Participants' Production of Positively Valenced Attachment-Themed Language
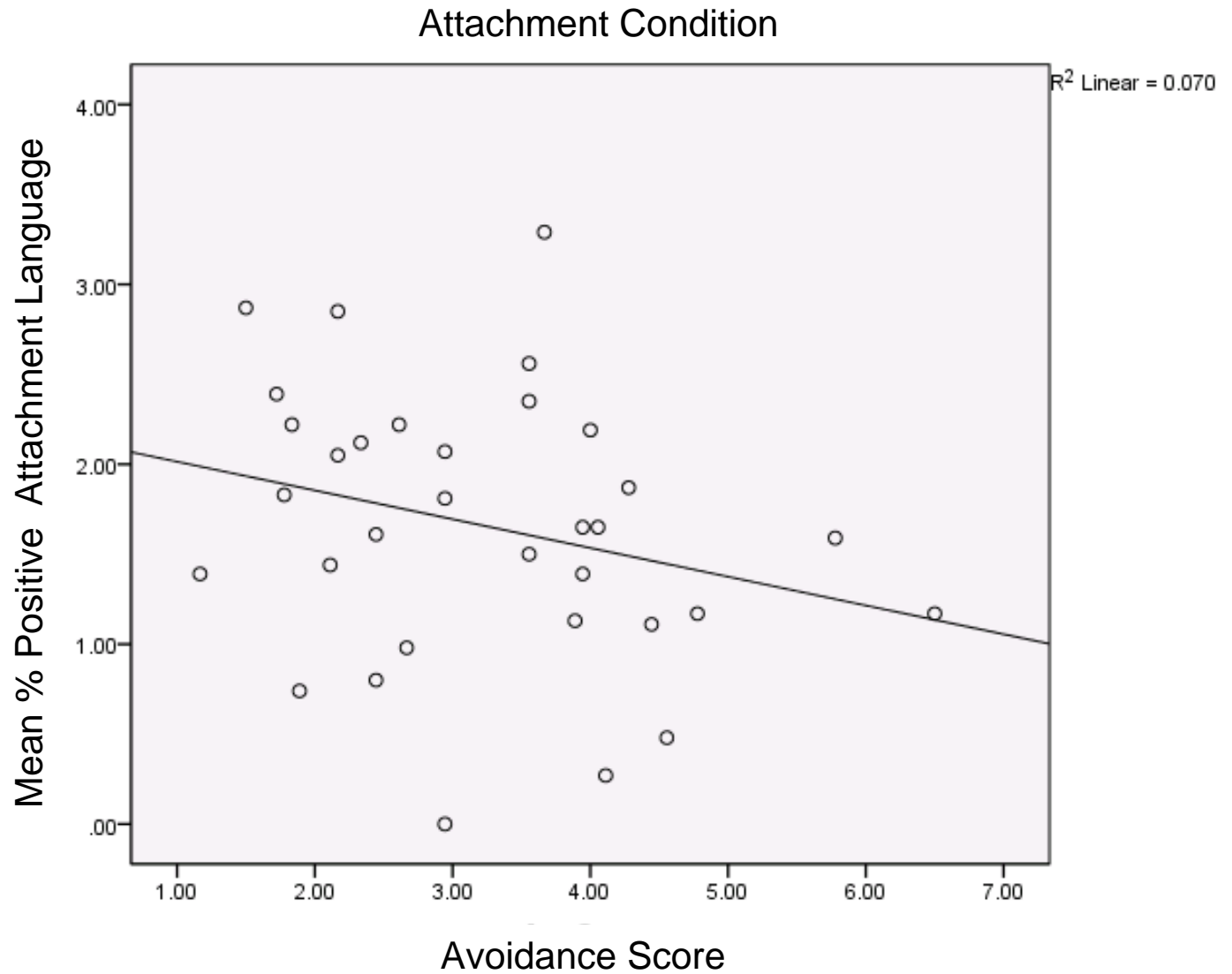
Appendix I: Prompts for Envisioning Primes

A (Close Emotional Other)

THINK OF an experience in the recent past when you spent time with one of the most important people in your life.
For the next 2 MINUTES please try to relive that experience and the feelings you had at the time.

B (Casual Acquaintance)

THINK OF an experience in the recent past when you spent time with a person whom you know but are not close to. This should be someone who has little impact on your life. This person may be someone you interact with on a regular basis on a superficial level or someone whom you have only met a few times.
For the next 2 MINUTES please try to relive that experience and the feelings you had at the time.

Appendix II: Writing Prompt about Coming to College

For the next 20 minutes you are asked to write about your experience of starting college. Please write continuously whatever comes to mind. Do not worry about spelling or grammar. Just keep writing.

Appendix III: Additional Surveys and Questionnaires

   A) *Experiences in Close Relationships – Revised*

Feelings about Romantic Partners in General

The following statements describe the way some people feel about romantic relationship partners. Please indicate how you *generally* feel when in a relationship by circling the number that corresponds to how much you agree or disagree with each statement.

	Not at all like me		A little like me		A lot like me		Exactly like me
1) I usually discuss my problems and concerns with a romantic partner.	1	2	3	4	5	6	7
2) I rarely worry about a partner leaving me.	1	2	3	4	5	6	7
3) I don't feel comfortable opening up to romantic partners.	1	2	3	4	5	6	7
4) I tell a romantic partner just about everything.	1	2	3	4	5	6	7
5) I often wish that my partner's feelings for me were as strong as my feelings for him or her.	1	2	3	4	5	6	7
6) I do not often worry about being abandoned.	1	2	3	4	5	6	7
7) When a partner is out of sight, I worry that he or she might become interested in someone else.	1	2	3	4	5	6	7
8) I am nervous when a partner gets too close to me.	1	2	3	4	5	6	7
9) Romantic partners make me doubt myself.	1	2	3	4	5	6	7
10) I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.	1	2	3	4	5	6	7
11) I feel comfortable sharing my private thoughts and feelings with a partner.	1	2	3	4	5	6	7
12) I worry that I won't measure up to other people in a partner's eyes.	1	2	3	4	5	6	7
13) I worry that romantic partners won't care about me as much as I care about them.	1	2	3	4	5	6	7
14) I find it relatively easy to get close to a partner.	1	2	3	4	5	6	7
15) My desire to be very close	1	2	3	4	5	6	7

	Not at all like me		A little like me		A lot like me		Exactly like me
sometimes scares people away.							
16) I find it difficult to allow myself to depend on romantic partners.	1	2	3	4	5	6	7
	Not at all like me		A little like me		A lot like me		Exactly like me
17) I often worry that a partner will not want to stay with me.	1	2	3	4	5	6	7
18) It's easy for me to be affectionate with a romantic partner.	1	2	3	4	5	6	7
19) I prefer not to be too close to romantic partners.	1	2	3	4	5	6	7
20) I worry a lot about my relationships.	1	2	3	4	5	6	7
21) Romantic partners only seem to notice me when I'm angry.	1	2	3	4	5	6	7
22) I often worry that a romantic partner doesn't really love me.	1	2	3	4	5	6	7
23) I get uncomfortable when a romantic partner wants to be very close.	1	2	3	4	5	6	7
24) It helps to turn to a romantic partner in times of need.	1	2	3	4	5	6	7
25) I find that my partner(s) don't want to get as close as I would like.	1	2	3	4	5	6	7
26) I am very comfortable being close to a romantic partner.	1	2	3	4	5	6	7
27) It makes me mad that I don't get the affection and support I need from romantic partners.	1	2	3	4	5	6	7
28) I'm afraid I will lose a partner's love.	1	2	3	4	5	6	7
29) It's not difficult for me to get close to a romantic partner.	1	2	3	4	5	6	7
30) I prefer not to show a partner how I feel deep down.	1	2	3	4	5	6	7
31) I talk things over with romantic partners.	1	2	3	4	5	6	7
32) When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.	1	2	3	4	5	6	7
33) I feel comfortable depending on romantic partners.	1	2	3	4	5	6	7
34) Romantic partners really understand me and my needs.	1	2	3	4	5	6	7
35) I find it easy to depend on romantic partners.	1	2	3	4	5	6	7
36) Sometimes romantic partners	1	2	3	4	5	6	7

change their feelings about me for no apparent reason.							

B) *WHOTO Questionnaire (To Whom Participant is Attached)*

Important People in Your Life

Below you are asked to list people who are significant in your life. Rather than providing their names, answer with a term that defines how they are related to you (e.g., mother, boyfriend, sister). If you write in more than one person, *list them in order of importance,* starting with the most important**.**

Note:
1. Please <u>DO NOT</u> use terms like "family" or "friends" that refer to more than one person.
2. If you are including more than one "friend"/"housemate"/etc. on your list, please specify which individual you are referring to (i.e., friend1, friend2, and so on).
3. There is no need to fill in all of the boxes.

1. Person(s) you make sure to see or talk to frequently.

A.	B.	C.	D.

2. Person(s) you seek out when worried or upset.

A.	B.	C.	D.

3. Person(s) you miss when they are away.

A.	B.	C.	D.

4. Person(s) you immediately think of contacting when something bad happens.

A.	B.	C.	D.

5. Person(s) you know always wants the best for you.

A.	B.	C.	D.

6. Person(s) who should be contacted in case of an emergency involving you.

A.	B.	C.	D.

7. Person(s) whose absence makes you feel like something is not quite right.

A.	B.	C.	D.

8. Person(s) you know will always be there for you.

A.	B.	C.	D.

9. Person(s) you are most likely to tell when something good happens to you.

A.	B.	C.	D.

10. Person(s) you can hardly imagine your life without.

A.		C.	D.

C) *Positive and Negative Affect Schedule (PANAS)*

Directions

This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate to what extent you have felt this way <u>during the past week</u>.

Use the following scale to record your answers.

(1) = Very slightly   (2) = A little   (3) = Moderately   (4) = Quite a bit   (5) = Extremely
        or not at all

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1. Interested	1	2	3	4	5
2. Distressed	1	2	3	4	5
3. Excited	1	2	3	4	5
4. Upset	1	2	3	4	5
5. Strong	1	2	3	4	5
6. Guilty	1	2	3	4	5
7. Scared	1	2	3	4	5
8. Hostile	1	2	3	4	5
9. Enthusiastic	1	2	3	4	5
10. Proud	1	2	3	4	5
11. Irritable	1	2	3	4	5
12. Alert	1	2	3	4	5
13. Ashamed	1	2	3	4	5
14. Inspired	1	2	3	4	5
15. Nervous	1	2	3	4	5
16. Determined	1	2	3	4	5

17. Attentive	1	2	3	4	5
18. Jittery	1	2	3	4	5
19. Active	1	2	3	4	5
20. Afraid	1	2	3	4	5

D) *Ten Item Personality Inventory (TIPI)*

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Disagree Strongly	Disagree Moderately	Disagree A Little	Neither agree Nor disagree	Agree A Little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

I see myself as:

1. _____ Extraverted, enthusiastic.
2. _____ Critical, quarrelsome.
3. _____ Dependable, self-disciplined.
4. _____ Anxious, easily upset.
5. _____ Open to new experiences, complex.
6. _____ Reserved, quiet.
7. _____ Sympathetic, warm.
8. _____ Disorganized, careless.
9. _____ Calm, emotionally stable.
10. _____ Conventional, uncreative.

E) Social Closeness Component of the Multidimensional Personality Questionnaire

1. I usually like to spend my leisure time with friends rather than alone. (a) True. (b) False.

2. I could be happy living by myself in a cabin in the woods or mountains. (a) True. (b) False.

3. I am usually happier when I am alone. (a) True. (b) False.

4. I prefer working with people to working with things. (a) True. (b) False.

5. I am more of a "loner" than most people. (a) True. (b) False.

6. Often I go a whole morning without wanting to speak to anyone. (a) True. (b) False.

7. I prefer to work alone. (a) True. (b) False.

8. I would rather live (a) in a friendly suburb, (b) alone in the woods.

9. I am happiest when I see people most of the time. (a) True. (b) False.

10. I often prefer not to have people around me. (a) True. (b) False.

11. It is very important to me that some people are concerned about me. (a) True. (b) False.

12. For me one of the most satisfying experiences is the warm feeling of being in a group of good friends. (a) True. (b) False.

13. Without close relationships with others my life would not be nearly as enjoyable. (a) True. (b) False.

14. I could pull up my roots, leave my home, my parents, and my friends without suffering great regrets. (a) True. (b) False.

15. I am a warm person rather than cool and detached. (a) True. (b) False.

16. I have few or no close friends. (a) True. (b) False.

17. It is easy for me to feel affection for a person. (a) True. (b) False.

18. I am rather aloof and maintain distance between myself and others. (a) True. (b) False.

19. When I am unhappy about something, (a) I tend to seek the company of a friend, (b) I prefer to be alone.

20. I prefer not to "open up" too much, not even to friends. (a) True. (b) False.

21. When I have a problem I prefer to handle it alone. (a) True. (b) False.

22. I tend to keep my problems to myself. (a) True. (b) False.s

F) *Manipulation Check*

Earlier in this study, a Research Assistant asked to think about a person or situation for 2 minutes.

Please indicate the extent to which you feel you were <u>able to choose</u> a person or situation that you could think about for two minutes. Circle one number along the line below.

←---→
    1   2   3   4   5   6   7   8   9   10

I had a lot of   I had some trouble   I had very little   I had no
trouble coming   coming up with   trouble coming   trouble
up with something   something to   up with something   thinking of
to think about   think about   to think about   something

Please indicate how <u>clear or vivid</u> the recollection felt. Circle one number along the line below.

←---→
    1   2   3   4   5   6   7   8   9   10

  not vivid   slightly   moderately   pretty   extremely
  at all   vivid   vivid   vivid   vivid

Appendix IV: Sample Narrative Texts With Attachment Language Highlighted

A) High Percentage of Attachment Language

"When I started college I remember I was really nervous but also excited. It was supposed to be the best time of my life, at least that is what everyone told me. This experience just had to be write. When I first got to Cornell I remember missing home a lot, but I still **loved** it here. may first day was really nerve-racking because i didnt know anybody. i would have to make **friends** all over again and it had been so long since i had change schools. i remember at my first floor meeting i met everyone i was going to be living with. i could tell who were the people i was going to get along with. some of the people were interesting and came from intertesting places. it was so cool to meet this diverse group of **friends**. In the first few weeks I made some really great **friends**. The **friends** I made soon became some of my best **friends**, because in college **friends** grow so quickly since we live so **close** to each other. Here in Ithaca we are each otehr's **family**. I remember hanging out in the lounge and doing homework **together**. I remeber being able to talk freely with one another and people were not judgemental. My whole fresshman floor was really **close**. We would do things **together** like see a movie, go to dinner, and many other things. it was nioce to have this **close** knit **family close** by, when the rest of my **family** was so far away. after the first few weeks i **loved** being in college. it was turning out to be a great experience. i started to see why people called it the best time of their life. it gave me the freedom that i liked and **friends** i could never forget. what i really liked when i came to cornell was that i had a diverse group of **friends**. being indian i liked being able to also get involved with…"

B) Moderate Percentage of Attachment Language

"Some weeks before leaving for college for freshman year, my **aunt** came to our house and took me shopping for a lot of the things I would need. My **mother** came along and it turned out to be a fun time. The school I was to attend I didn't really want to go to. Cornell had offered me a guaranteed transfer, stating that after spending a year at another school and maintaining a certain GPA, I would be guaranteed a transfer spot. I just wanted to be at Cornell and not at the school I was to be attending, so although I was to leave for my school the Thursday or Friday before classes were to start for Freshman Orientation and the class picture, I didn't **care** as much that I would be missing out. I didn't claim it as my school. Fortunately, some members of my church youth group at the time invited me to go to Six Flags the Saturday before. Those great memories allowed me to forget about not wanting to be at the school I was to attend and just enter with an open mind. The day I went to move in with my **mom**, we had to leave early in the morning. I was about a 5 hr car ride. My **mom** was tired by the time we got to the school, so after taking care of financial and registrar matters, we went to my room and my **mom** fell asleep on my bed after I made it. I unpacked by myself all the while thinking of how the school year will be. I was glad that I was in college but I wasn't completely happy because I wanted to be at Cornell. Later, I met my housemates and we watched TV in the TV room/common area. When classes began, I was excited to start. The school was very small, so classes were really small. My major was Biology and I was going under the pre-med track so a majority of my classes were science-based. I also was taking some classes that fulfilled requirements for the Liberals Arts part of the college I was under. In this environment, I…"

C) Low Percentage of Attachment Language

"College was an experience, when I first came. I thought that at some point it would be just like the movies, but in some respect I knew that it wouldn't. Cornell is really a place when you can achieve a lot of things, but at the same time it is a place that can make you feel a like you are losing your mind in the pursuit of trying to achieve your goals. I feel like college has made me a stronger and more aware person of my surroundings and of the world. It has showed me that throughout life there are many different obstacles to face, but you just have to face them head on and try to come out of each experience a better person. When I first started college, I think I was a little naive as to the what it would really be like, but after being here for almost two years I have made great strides towards becaome whatever it is that I want to become. College has also been a place where I've had my firsts. I went to my first party here and I had my first **kiss** here. So, it will always have a special place in my **heart**. I think that when we start college that we are certain people, but I think that throughout the years we transform into the people we are going to be in the future and that our views and morlas may chnage depending on the people that influence us here. I think that when starting college that all people should be prepared to not necessarily be the peopel that we want to be in the future. My experience was a rocky one starting, but I know that throughout it all I have become a person that has strong goals and strong moral values. There are things that I wish I could have

changed and things that I regret, but I know that in the beginning if I didn't do those things then I wouldn't be sitting here now, the perosn I am now. All in all, it was a good experience. It helped me realize some thins about myself that I never knew existed. It allowed be the chance to really explore who I am as an indiviual and who I will be as a professional."

Appendix V: Attachment Dictionary Pre-Test

Please rate the following words (on a 1-7 scale), on the degree to which you believe they represent the categories of intimacy or lack thereof, closeness or lack thereof, bonding, attachment, love or lack thereof, relationships, and/or trust or lack thereof. Circle the number indicating your rating.

Then, please indicate whether you believe the valence (mood/connotation) of that word is more positive or more negative (on a 1-7 scale). Circle the number indicating your rating.

Please consult these scales when providing your rating scores:

Category Membership…

←--→

1	2	3	4	5	6	7

Not related At all	Slightly Related	Somewhat Related	Pretty Related	Extremely Related

Valence…

←--→

1	2	3	4	5	6	7
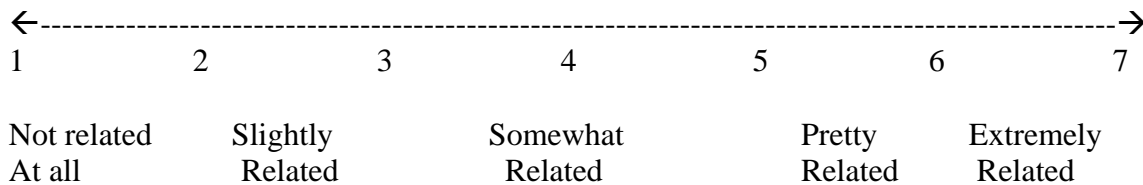
Very Negative	Slightly Negative	Neither Negative Nor Positive	Slightly Positive	Very Positive
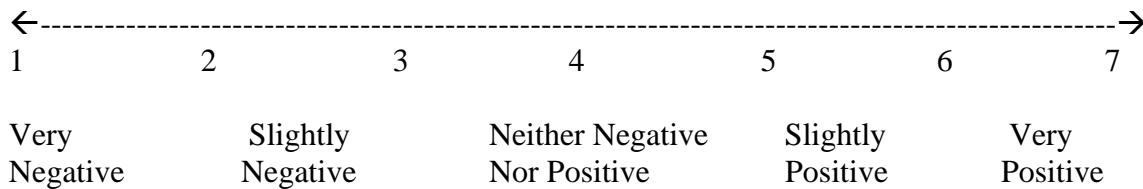
Word: **Abandon**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Abusive**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Accepting**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Accompany**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Adore**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Affair**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Affection**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Afraid**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Aggravate**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Agitate**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Alone**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Alongside**

Category Membership: 1   2   3   4   5   6   7

| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Amorous**

| Category Membership: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Angelic**

| Category Membership: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Angry**

| Category Membership: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Annoy**

| Category Membership: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Anxious/Anxiety**

| Category Membership: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Appreciation**

| Category Membership: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Ashamed**

| Category Membership: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Asking**

| Category Membership: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Assure**

| Category Membership: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Valence: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Word: **Attachment**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Attract**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Aunt**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Avoid/Avoiding**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Bastard**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Beloved**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Beside**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Betray**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Bond**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Boyfriend**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **"Bro"**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Brother**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Candle**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Care/Caring**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Caress**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Cherish**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Close/Closeness**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Closure**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Comfort**

Category Membership: 1   2   3   4   5   6   7

Valence:	1	2	3	4	5	6	7

Word: **Commitment**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Communal**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Companion(ship)**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Company**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Compassion**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Confidant**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Confide/Confidence**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Confident**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Conflict**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Considerate**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Contact**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Cuddle**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Cute**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Dad**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Darling**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Date/Dating**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Daughter**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Demand(ing)**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Depend**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Devote(d)**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Discomfort**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Distant**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Distrust**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Divorce**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Embrace**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Emotional**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Empathy/Empathic**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Enamor(ed)**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Encourage/Encouraging**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Enjoy**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Estrogen**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Ex-boyfriend**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Ex-girlfriend**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Ex-husband**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Expect/Expectation**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Explore/Exploration**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Express/Expressive/Expression**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Ex-wife**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Family**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Father**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Feed**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Flirt**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Fond(ness)**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Foreplay**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Friend(ship)**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Frustrate/Frustrating/Frustration**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Fun**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Gentle**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Girlfriend**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Grandchild(ren)**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Grandparent**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Great**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Heart**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Heartbreak/Heartbroken**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Heartfelt**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Heartless**

Category Membership: 1   2   3   4   5   6   7

Valence:	1	2	3	4	5	6	7

Word: **Heartwarming**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Help**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Hold**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Hug**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Husband**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Ignore**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Immature**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Insecure/Insecurity**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Insensitive/Insensitivity**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word:

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Interfere**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Intrusive**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Isolate/Isolating/Isolated**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7
Word: **Joint**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Kin**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Kiss/Kissing**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Lay**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Lonely**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Love/Loving**

Category Membership: 1   2   3   4   5   6   7

Valence:	1	2	3	4	5	6	7

Word: **Lovely**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Lover**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Loyal**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **"Ma"**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Makeout**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Massage**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Mom**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Motherly**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Need(s)**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Needy**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Nephew**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Niece**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Nuzzle**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **"Pa"**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Pain(ed)**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Painful**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Pal**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Partner**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Passion(ate)**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Patient/Patience**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Praise**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Private**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Reassure/Reassurance/Reassuring**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Reject/Rejection**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Relationship**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Relax/Relaxing**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Rely/Reliable**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Repulsive**

Category Membership: 1   2   3   4   5   6   7

Valence: 1 2 3 4 5 6 7

Word: **Respond/Responsive**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Romance/Romantic**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Safe**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Secure/Security**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Sensitive/Sensitivity**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Separate/Separation**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Sex**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Sister**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Smitten**

Category Membership: 1 2 3 4 5 6 7

Valence: 1 2 3 4 5 6 7

Word: **Snuggle/Snuggling**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Soulmate**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Special**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Spouse**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Strain/Strained**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Stroke/Stroking**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Struggle/Struggling**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Support/Supportive/Supporting**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Sweet**

Category Membership:	1	2	3	4	5	6	7
Valence:	1	2	3	4	5	6	7

Word: **Sweetheart**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Tender**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Together**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Trust**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Unconditional**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Understand(s)/Understanding**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Unemotional**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Unloving**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Unresponsive**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Upset(ting)**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7

Word: **Woo/Wooing/Wooed**

Category Membership: 1   2   3   4   5   6   7

Valence: 1   2   3   4   5   6   7