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thesis entitled

ADULT ATTACHMENT STYLE AS A PREDICTOR

OF BIAS IN PROCESSING RELATIONAL INFORMATION

presented by

James Mervyn Fuendeling

has been accepted towards fulfillment
of the requirements for

M.A. degree in Psychology

Major professor

Date 11/7/94

ADULT ATTACHMENT STYLE AS A PREDICTOR OF BIAS IN PROCESSING RELATIONAL INFORMATION

By

James Mervyn Fuendeling

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Psychology

1994

ABSTRACT

ADULT ATTACHMENT STYLE AS A PREDICTOR OF BIAS IN PROCESSING RELATIONAL INFORMATION

By

James Mervyn Fuendeling

This study investigated biases in information processing as a function of attachment style. 797 Michigan State undergraduates completed the Relationship Scales Questionnaire (RSQ) by Bartholomew, a 30-item measure of adult attachment style. Responses were factor analyzed and used to select 101 participants who were presented a word list consisting of 64 interpersonal trait descriptors. Following a theory of attachment style as epiphenomenal to a single complex schema for relationships, participants' attachment styles were expected to predict patterns in recall of these trait descriptors. Participants were expected to preferentially recall words relevant to their relationship schemas. Results did not support this hypothesis. Hypotheses about the underlying structure of the RSQ were supported by findings of the factor analysis, which replicated published findings. It is expected that the factor analytic method employed to screen for attachment style will be useful in further research.

This work is dedicated to the belief that all things,
including graduate school,
must end.

ACKNOWLEDGMENTS

I would like to thank the members of my thesis committee, Gary Stollak, John Hurley, and Galen Bodenhausen, for their assistance, for their advice, and for ultimately allowing me to carry out this project according to my own vision of it. Thanks are also due to Larry Messé for help at a critical point in my analysis of the data. I am especially grateful to Kim Bartholomew for early encouragement, methodological advice, and for supplying me with unpublished texts and instruments. I am also indebted to Nancy Collins for her encouragementand her generosity with unpublished protocols and papers. Thanks also to Jason Wheeler, for assistance with a pilot project.

Special thanks are due to my parents their support of my efforts in graduate school and their offhand confidence that I could finish this. I am also indebted to my friends, especially Frank DeMarco, for practical and moral support. And, finally, thanks to Suzy Pavick for help in navigating the process.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION AND REVIEW OF THE LITERATURE

A body of theory and research on attachment exists which addresses individuals' approaches to relationships, and the way these relational styles are determined by working models resulting from the internalization of early relational experiences (Bowlby, 1982). This study examines schematic features of attachment style in young adults. It is argued that the relevant working models can be understood as relational schemas (Baldwin, 1992), and that the features of attachment style can be studied using methods developed for the study of schematic constructs in the social cognitive literature (Bem, 1981). Attachment styles were assessed using a measure scored both dimensionally and categorically, with the expectation that dimensions of attachment style achieved in the current sample would yield the same typology as a priori categorical scoring based on the endorsement of features of self and other models (Brennan, Shaver & Tobey, 1991). The main hypothesis of the study is that these ratings of attachment style will predict systematic differences in the free recall of trait descriptor adjectives, according to those adjectives' relevance to the schemas underlying participants' attachment styles.

Adult Attachment Theory

Attachment theory concerns the development of relationships, and the development of consistent or enduring styles of approaching and behaving in those relationships. The theory sees infants' behavior as organized around the goal of maintaining felt security by maintaining proximity to an attachment figure, generally the mother. The forms this behavior takes, as well as the infant's

success in maintaining proximity and felt security, are dependent upon such other variables as the child's temperament and the attachment figure's attentiveness, responsiveness, and skill. Early in life, the child develops internal representations, or working models, of the self and others in relationship based on interactions with the attachment figure. The child's relationship with the mother typically has the most influence on the form and content of these working models.

While Bowlby (1982, 1973) did discuss cases of adults and of attachment issues in parent-child dyads, it has been only in the past ten years that attachment behavior in adults has become a popular topic in its own right. For example, Main and her coworkers studied the relationship between mothers' attachments with their children and their memories of childhood attachment patterns with their own mothers (Main, Kaplan, & Cassidy, 1985). Following Ainsworth and her coworkers (Ainsworth, Blehar, Water & Wall, 1978), Main typed mothers' attachment with their own mothers using three styles: secure, avoidant, and preoccupied. In order to conduct this research, Main et al. developed a structured interview, the Adult Attachment Interview (AAI), which allowed researchers to assess several aspects of adults' cognitive representations of their childhood attachments with their parents.

Hazan and Shaver (1987) argued that close relationships between adults could be understood as attachment relationships. Their argument points out that adults' romantic relationships, like children's attachment relationships, are often a primary source of support and felt security, tend to be unique and long lasting (relative to an individual's other relationships) and become increasingly important as a place of retreat in times of stress and anxiety. While this extension of the theory has not been universally accepted, it is certainly in

keeping with Bowlby's formulation (1982, 1980) of attachment as a process with influence on the forming and maintaining of relationships across the life span.

These authors also provided a further methodological tool with their brief self report measure of attachment style for adults. This measure yields three styles--secure, avoidant, and anxious/ambivalent--which are analogous to the styles Ainsworth originally identified in the behavior of children (Ainsworth et al., 1978). Both this measure and the AAI explicitly deal with the assessment of working models, rather than the behavioral indices (e.g. the strange situation developed by Ainsworth and her colleagues) often used with children. The theoretical extension and accompanying, accessible, methodology provided by Hazan and Shaver (1987) were followed by a marked increase in research on attachment in adults. (The definition of "adult" for these studies varies. The term is often operationalized as students in introductory psychology classes.) Kobak and Sceery (1988) used the Adult Attachment Interview developed by Main et al. to type college students for attachment style and showed that such typing predicted aspects of emotional functioning and behavior in romantic relationships. Continuing to examine attachment style in adults as a result of underlying working models have been Bartholomew (1990, Bartholomew & Horowitz, 1991), Collins (Collins & Read, 1990; Collins, in press), and Simpson and their coworkers (Simpson, Rholes, & Nelligan, 1992)

The research on attachment in adult relationships has focused mostly on attachment styles as a result of internal working models, starting with Main's group describing their work as "a move to the level of representation" (1985). Following the convention of Ainsworth (Ainsworth et al., 1978), and later of Main (Main et al., 1985), researchers tended to group individuals into categories according to a typology of attachment styles. Attachment style was then treated as a categorical variable. This treatment was carried over by Hazan and Shaver

(1987), who grouped adults into three attachment styles presumed to be analogous to the three infant styles of attachment originally described by Ainsworth in the strange situation (Ainsworth, Blehar, Water & Wall, 1978). Hazan and Shaver's measure groups adults into attachment style by having them endorse one of three descriptions of feelings and behavior towards forming romantic relationships. These descriptions were written to reflect the phenomenology of each attachment style. This self-report methodology not only hinges on the assumption of working models, but also presumes that these models are relatively available to awareness. Bartholomew's work includes revisions and extensions of both Hazan and Shaver's self report measure and the AAI. Basing her theory on Bowlby's description of two internal working models in any individual--a model of self and a model of other, each of which can vary on a dimension from positive to negative (Bowlby, 1982)--Bartholomew hypothesized four attachment styles. She has named these four styles secure, preoccupied, fearful-avoidant, and dismissing.

Currently, the literature is moving towards use of dimensional measures for adult attachment. In Bartholomew's self report measure, participants rate how well each description applies to them using a Likert type scale. This yields a dimensional score for each style. Kobak and his coworkers have developed a dimensional scoring of the AAI (Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1991; and Kobak & Hazan, 1991). Collins and Read developed an influential revision of the Hazan and Shaver measure by turning the propositions in the style descriptions into separate items on a list. Patterns of endorsement of these items were then factor analyzed to yield styles, and also to indicate underlying dimensions of adult attachment styles. Simpson and his coworkers (Simpson et al., 1992) used Collins' measure in a study of support seeking predicted by attachment style, and replicated her factor structure.

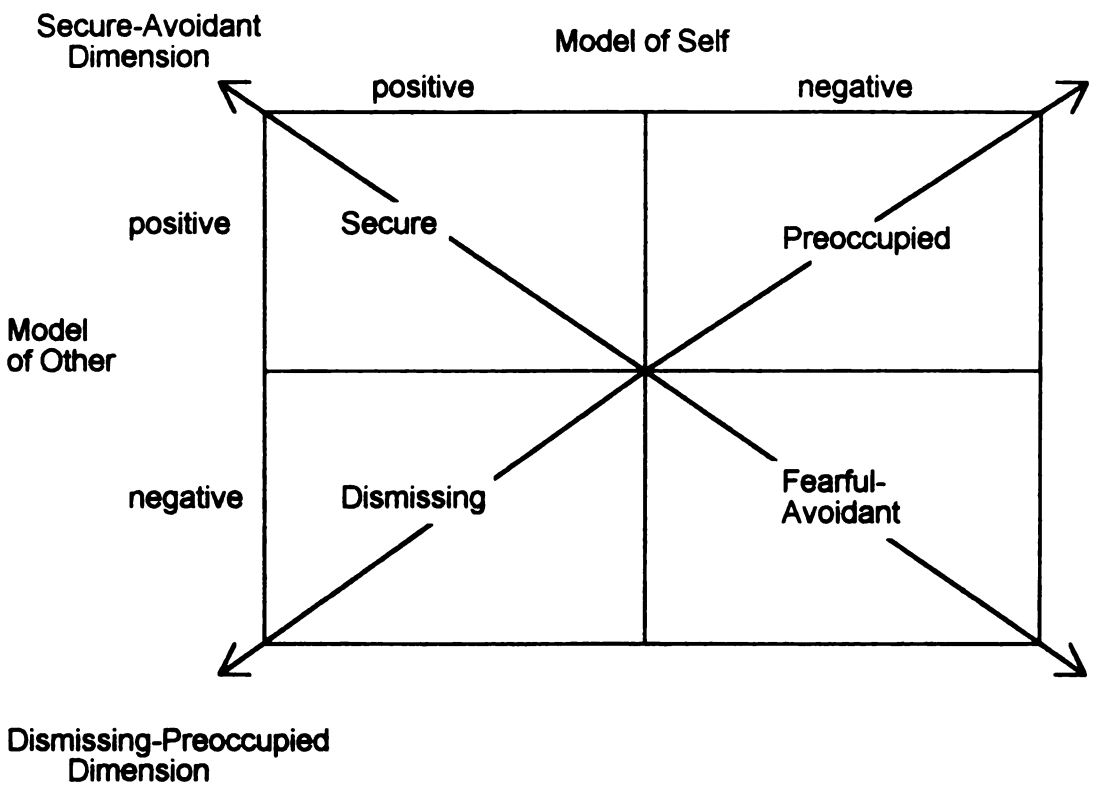


Figure 1. Attachment types and dimensions, after Bartholomew and Horowitz; and Brennan, Shaver and Tobey

Two relatively orthogonal factors, anxiety-security, and avoidance, were described as underlying the three styles. Brennan, Shaver and Tobey (1991) found that the same two dimensions underlie both three style typologies of adult attachment and Bartholomew's four style typology (see Figure 1). Further, differences in classification within individuals were predicted by theoretical differences in the formulations of Bartholomew's two avoidant categories. The two underlying dimensions are nearly orthogonal, with Bartholomew's styles anchoring either end of each dimension. The dimensions are then named--according to the styles which define their poles--the Secure-Avoidant dimension and the Preoccupied-Dismissing dimension.

The use of dimensional measures has psychometric advantages because it allows the use of more powerful correlational statistics. It also allows the data to more accurately reflect the variation in attachment styles that is found in most populations. Currently, the preferable method for measuring adult attachment by self report is to use both a list type measure which can be factor analyzed for underlying dimensions and a categorical measure. The categorical measure then serves as a reliability check for the dimensional measure (Bartholomew, personal communication). The use of both dimensional and categorical scoring in this study allows replication of the factor structure found by Brennan et al. (1990), Collins and Read (1990), and Simpson et al. (1992).

Attachment as Schematic

While the adult attachment literature has emphasized styles as the results of working models and dimensions, consideration of more explicitly cognitive formulations may enrich our understanding of attachment and allow us to build more bridges to the social cognitive literature. In Bowlby's early writings (1982)

on attachment styles and their development in children, he discussed expectations about relationships which are learned from the child's experience of relationships. The child also develops beliefs about the characteristics of the caregiver, such as that they are reliable and likely to be accessible; and about the self, such as that they are or are not valuable and worthy of love. Early attachment style is theorized to be a result of both these knowledge structures and of behavior patterns maintained by more or less consistent patterns of interaction between children and their caregivers. To the extent that patterns of interaction between the child and the caregiver are stable over an extended period of time, those patterns and the child's increasingly consolidated internal representations of them will tend to support and maintain each other. As the child's cognitive abilities develop, cognitive representations of attachment become increasingly capable of maintaining themselves.

These cognitive structural aspects of working models and their functioning have been pursued in particular theoretical depth by Sroufe and his coworkers (Sroufe, 1985; Sroufe & Fleeson, 1986). Sroufe and Fleeson suggest that as a self emerges through development, self regulation of personality progressively replaces dyadic regulation with the parent. The organization of the self, however, always progresses with reference towards relationships with others. They argue that as the child moves from the primary attachment relationship into later social relationships, what is brought forward is not a combination of relational history and temperament, but "*only* an organisation of feelings, needs, attitudes, expectations, cognitions, and behavior; that is, only the relationship history as processed and integrated by the developing individual" (Sroufe & Fleeson, 1986; p. 52). In examining this argument, it is important to notice that the history carried forward is a relational history, and that it is the history as individuals incorporate it into their own cognitive structures.

Sroufe and Fleeson go on to demonstrate and describe how children reenact roles and behaviors learned in early relationships with the effect of recreating highly similar relational dynamics in later relationships. In effect, the expectations and roles learned early on become self-fulfilling prophecies which are carried forward into life. The recreated interpersonal patterns then confirm and strengthen the internal representation of attachment.

While Sroufe and his coworkers have concerned themselves mostly with the attachment behavior of children and mother-child dyads, there is every reason to believe that the fundamentals of their analysis can be applied to attachment as it is extended into adult relationships. In fact, this is essentially the argument made by Bartholomew and Horowitz (1991) in developing their taxonomy of four adult attachment styles. As they point out, the increasingly complex and abstract cognitive abilities developed as the individual approaches adulthood allow greater differentiation of internal representations. Main and her coworkers have discussed the cognitive features of internal representations of attachment figures and the cognitive abilities necessary to hold those representations (Main, 1990; Main et al., 1985). By examining linguistic features of the participants' responses, including coherence of overall narrative and consistency between generalizations and specific examples, their AAI takes into account features of working models which may function outside of the individuals' awareness while still influencing organization and processing of information. Further, the transmission of relational patterns across generations, much as it is carried forward across relationships, is central to the work of both Main (e.g., Main et al., 1985) and Bretherton (1990). Clearly, if styles of behavior are transmitted by mothers to their own children, those patterns of behavior and their maintaining cognitive structures must persist into adulthood.

We can see from this discussion ways in which cognitive structures underlying attachment styles determine continuing patterns of relational behavior, and thus maintain attachment styles. However, these cognitive structures may also have more direct self maintaining functions (Bowlby, 1988, 1982, 1973; Bartholomew & Horowitz, 1991). Essentially, the working model is a knowledge structure developed as knowledge derived from early relationships is organized by the child. This structure includes both propositional knowledge, such as attributes of the self and other, and procedural knowledge, such as ways of behaving in order to initiate or maintain familiar relational patterns. The working model thus functions as a schema for a certain domain of social information, either about the self or the other in relationship.

If the working models are seen as schemas, they can be expected to have an influence on how new information is interpreted and assimilated, thereby exercising a self maintaining influence (Bowlby, 1982). This theoretical discussion is supported by the frequent findings that schemas influence what information people notice and lead people to interpret ambiguous information as being consistent with their expectations (Baldwin, 1992). Westen (1988, cited in Baldwin) discusses the ways in which interpersonal schemas bias information processing through selective attention to schema consistent information while schema inconsistent information resulting from interpersonal interactions is ignored. While these aspects of working models have not been widely examined in adult attachment, the closely related phenomenon of attributional influence of working models has been investigated by Kobak and Hazan (1991) and Collins (in press). At the level of attribution, the influence of the working model bears on both the dyadic relationship and the maintenance of the interpretive cognitive structure.

Another reason to examine working models in attachment in terms of cognitive schemes has to do with the question of procedural knowledge. Bretherton (1990) and Crittenden (1990) have both raised the question of how to assess features of working models which consist of procedural information for behavior patterns in relationships, but can not be accessed semantically. If these features of working models exist outside of awareness, but still influence the construing of social information, they might be examined using methodologies developed in the study of cognitive schemas

Attachment Style as Single Relational Schema

A final consideration in the study of working models in adult attachment is the question of how many models will be considered. Most authors follow, at least implicitly, Bowlby's discussion of two models, one of self and one of other. Bartholomew's analysis is, perhaps, the clearest in this, explicitly citing Bowlby's discussion of two models, each varying on a dimension from positive to negative, as the basis for her four style typology. The empirical success of these formulations lends considerable credence to the construction of attachment style as being underlain by two, developmentally related, models of self and other. However, Bowlby (1980) also described cases in which two coherent models, one for self and one for other, did not adequately explain people's behavior in and evaluation of relationships (1980). Other possible formulations are poorly consolidated and incoherent models which include contradictory information, or competing multiple models of self and other. Main (1990) also theorizes that an individual may develop either a single model for other, or multiple models for specific, significant, others. Most authors now allow that the construct of interest may be models of self in relation with others that are specifically used to organize attachment behavior, as opposed to general and

chronically activated models of self. Within the adult attachment literature, Simpson et al.'s study (1992) can be particularly seen to support this, as attachment behavior was activated by the introduction of a stressor. Thus, especially in the case of insecure styles, it is theoretically possible that the parsimonious solution of two internal models is not the best formulation. On the other hand, the methodological problems of assessing multiple, incoherent, or competing models are staggering, to say the least.

In his recent review of social cognitive literature, Baldwin (1992) suggested that the important focus for social research is not self schemas and other schemas, but rather relational schemas. This echoes Sroufe and Fleeson's (1986) analysis of attachment as a necessarily dyadic process in which it is a whole relationship which is internalized, including expectations and interpersonal interactions. The extensive theorizing and empirical work on interactional scripts and specifically relational expectations which Baldwin reviews all argues for the use of a single, though complex, model of relatedness as a central construct. For instance, the procedural knowledge governing interaction patterns is neither a set of expectations specifically about the self or the other, but about ways in which the self and other will relate. These kinds of knowledge can be much more easily accounted for in a model of relatedness than in the largely semantic models of self and other which have, to now, dominated work in adult attachment. It can also be argued that the sense of self in the interpersonal relationship is drawn largely from the pattern of interaction with others. While this idea, advanced by Saffran (cited in Baldwin, 1992) may not be explicit in the adult attachment literature, it is certainly clear in the theoretical development of working models in infancy and childhood described by Bowlby (1982) and other researchers (Bretherton, 1990).

Baldwin goes on to specifically suggest studying unitary models of attachment relationships, rather than separate models of self and other. An examination of the measures used in the study of adult attachment makes it apparent that this approach is already implicit in the literature. The seminal measure published by Hazan and Shaver (1987) asks respondents to endorse single descriptions of their behavior in relationships. While the theory guiding this measure concerns their beliefs about self and other, endorsing a single description of relatedness can be interpreted as a measure indicative of a relational schema. Other self report measures of adult attachment style have changed the form of responding, but the substance of the questions asked by the measures has changed only slightly. Most attachment measures still ask about behavior and attitudes in a relationship rather than clearly separating attitudes about self and other. For instance, the item "I wonder whether my partner really cares about me." (Collins & Read, 1990) includes an attitude on the part of the self about an attitude on the part of a significant other. This is, inherently, a question about internal construction of a relationship.

The idea of a single relational schema, as opposed to separate self and other models, is also included in Bowlby's theoretical writings. He discusses both as alternate levels of construction for working models. Indeed, the discussion of unitary relational schemas should not be seen as arguing against the validity of separate working models of self and other. Rather, a single relational schema could be seen as a super-structure supported by models of self and other--just as in biology, organs and cells exist at different levels of structure, but they are equally valid concstructs. In fact, Baldwin (1992) suggests that relational schemas are made up of at least three elements: a script for interaction patterns, a schema for the self as experienced in relationship, and a schema for the other person in interaction. Baldwin (1992) theorizes that the

interaction scripts in relational schemas include expectations for interactions and outcomes in the relationship between self and other.

Essentially, Baldwin is developing relational schemas as functioning in a manner similar to attachment styles. Both attachment styles and relational schemas are seen as including models of self and other, but the relational schema is conceived of as a working cognitive structure, whereas attachment style was originally conceived of as a behavior pattern with dynamic and cognitive features (Bowlby, 1982). In both cases, the various elements of the construct are seen as highly interdependent, partly because they are drawn from the same history of relational experience. And, like attachment researchers, Baldwin suggests that the particularly interesting question about relational schemas is how they lead people to "re-create the interpersonal patterns learned in previous relationships (p. 462)."

In addition to theoretical considerations, studying attachment in terms of a unitary relational schema may have methodological advantages. With this formulation it will not be necessary to identify and quantify all individual models underlying attachment style in order to ascribe features to the relational schema. This will particularly simplify the examination of cases where the participant may have multiple competing models of either self or other. Because the relational model, or schema, is presumed to include the models of self and other as well as related facets of internalized relational history, we can expect that earlier analyses regarding dimensions of attachment style, learned expectations, evaluations, and beliefs, will continue to hold true for the formulation of attachment style as the result of a single relational model. Thus, it would be logical and, hopefully useful, to examine the functioning of various social cognitive mechanisms at the level of relational schema in adult attachment.

Relational Schemas and Information Processing

If, as this discussion suggests, working models in attachment function as schemas for specific domains of social knowledge, it should be possible to investigate certain characteristics of those schemas using methodologies borrowed from social cognition literature. Baldwin (1992) reviews investigations of how individuals perceive information in interaction patterns within relationships. Within any type of relationship, information processing is guided through attentional and assimilation processes determined by the relevant schemas (esp. Planalp, 1987). Specifically, Baldwin (1992) suggests that when schemas are activated, people should

> (a) preferentially attend to schema-relevant events when observing or participating in social behavior, (b) process this information more efficiently (e.g., by organizing schema-relevant interactional sequences into larger perceptual chunks), and (c) show these and other effects under automatic as well as conscious processing circumstances. (p. 474.)

When primed, we would expect the relational schemas underlying attachment to affect processing of social information. Bowlby refers to this priming as activation of the attachment system and assumes that in naturalistic situations it is brought on by felt anxiety or by the evaluation of threat to relatedness in the attachment relationship (1982). The effect of this kind of information processing bias is apparent in people's tendency to have better access to memories of interpersonal interactions which were consistent with their attachment style than those which were not consistent (Main et al., 1985).

A simple way to test these ideas is to prime the relational schemas underlying attachment style, present an array of stimuli, and measure free recall of those stimuli. Information processing theory predicts that individuals will recall stimuli more efficiently which fit with their schemas for the relevant domain of information (Baldwin, 1992). Of course, the relational schema is fairly

complex, containing representation of self, other, and of interactional patterns. As discussed before, attachment measures necessarily ask about all three areas because they deal specifically with relational functioning. Further, as Baldwin suggests in his discussion of conjoint priming, priming any one element of a schema is likely to result in priming of other elements of the schema. Thus, once an attachment scheme is primed, any of its various elements may bear on immediately subsequent information processing.

This sort of methodology has been used by Sandra Bem and her coworkers (Bem, 1981) to investigate the schematic nature of sex roles. They found that, to the extent individuals are schematic for sex role, experimenters can predict patterns in those individuals' recall of items from a word list based on the gender connotations of those words. Participants who were schematic for sex role, as indicated by the Bem sex role inventory, were more likely to recall sex typed words (such as "bikini", "nylons", and "blushing") in clusters determined by gender connotation.

In a situation where relational schemas are primed, we might expect to find effects in recall of traits which are relevant to the participants' relational schemas. A list of words which could be identified as carrying certain semantic meaning specific to interpersonal relationships could be used to investigate relational schemes in a manner similar to that utilized by Bem to investigate gender schemes. Wiggins (1979) compiled such a list of words to be used as a personality assessment instrument. This instrument, the Interpersonal Adjective Scale (IAS) is built around a list of 128 adjectives which are descriptive of interpersonal traits. These adjectives are clustered into scales which can be scored to reflect either sixteenths or octants of a circumplex representing

interpersonal space (after Leary, 1957). In developing this scale, Wiggins specifically chose traits which marked interpersonal, or relational, traits. The theory guiding this process of defining personality in terms of relational traits was based on a structural analysis of cognitive categories in social perception (Foa & Foa 1974, cited in Wiggins 1979). This would appear to be highly compatible with the current conceptualization of attachment style in terms of relational schemas. In fact, in his review Baldwin (1992) discusses the influence of early relational schema theories on the development of the interpersonal circumplex as a map of the interpersonal space. In this construction the interpersonal circumplex is seen as representing the space in which the interactional component of the relational schema takes place and in which the self and other models are represented.

The IAS, and it's more recent revision, the IASR-B5 (Trapnell & Wiggins, 1990) are scored to show a respondent's profile of personality traits in a circumplex anchored by the nearly orthogonal axes ambitious-dominant to lazy-submissive and cold-quarrelsome to warm-agreeable, with scale scores for each octant of the circumplex. As can be seen in Figure 2, the octants are 1) Ambitious-Dominant, 2) Arrogant-Calculating, 3) Cold-Quarrelsome, 4) Aloof-Introverted, 5) Lazy-Submissive, 6) Unassuming-Ingenuous, 7) Warm-Agreeable, and 8) Gregarious-Extraverted.

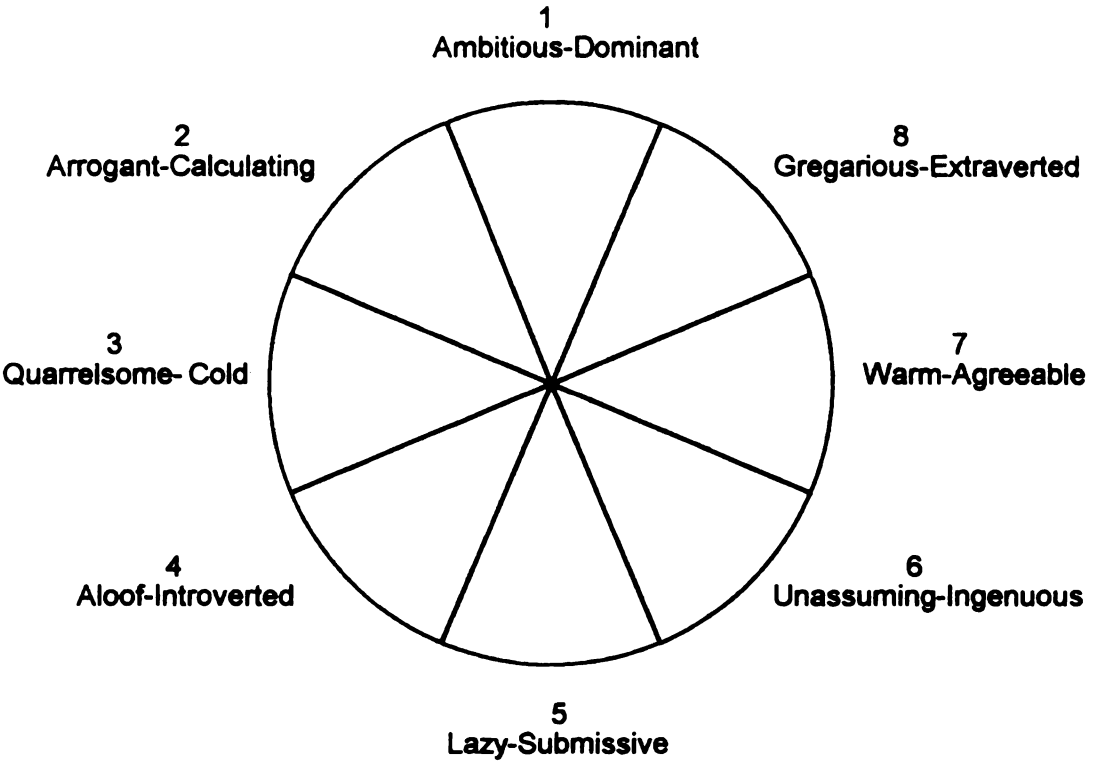


Figure 2. The interpersonal circumplex based on the IAS

Expected Patterns in Recall

While it is proposed that a methodology similar to Bem's can be used to investigate relational schemas, this does not necessarily imply that comparable patterns will be found in recall data. Bem describes gender as a dimension which gender typed individuals use to cognitively group applicable information. This cognitive grouping is demonstrated in the fact that gender schematic participants recall gender typed words in serial clusters. This clustering indicates that the items were associated with each other in memory (Bem, 1981). Specific content of gender schemas or self schemas is not addressed. In fact, Bem does not report data separately for male and female participants, but groups participants according to how much the dimension of gender is used to organize information.

In attachment, the content of individuals' relational schemas is important. The current theory presumes that everyone is schematic for close relationships in that they have an individual attachment style. The issue of concern has to do with the content of those schemas, and how that content influences ongoing organization of information. The dimensions addressed in the adult attachment literature (Brennan, Shaver & Tobey, 1990; Collins & Read, 1990; Simpson, Rholes & Nelligan, 1992) are statistically derived dimensions which describe styles of attachment behavior, but do not have clear implications for the organization or structure of schemas. Thus, patterns in recall of interpersonal trait descriptors will probably depend on the similarities of relational schema content and resultant cognitive style within groups defined by attachment style.

As discussed previously, relational schemas are theorized to have three main elements which might influence information processing, models of self and other in relationship and interaction scripts. Bem showed clustering organized by a dimension of content. Extrapolating from these points, we would expect to

find that participants organize recall of words according to dimensions of schema contents. Dimensions which might appear could be traits descriptive of the self in relationship, traits descriptive of other in relationship, or traits relevant to the participants' interaction scripts. Since any interpersonal action represented in scripts--and thus cued by trait descriptors--would have to be carried out by either the self or other, this last category might collapse into the first two for the purposes of this study. If we think of these traits as dimensions, then we could expect these clusters to include words from within an octant, or from opposed octants representing opposite ends of the same dimension. These dimensions, which would correspond to identifiable axes on the interpersonal circumplex, should form different patterns for each prototypical attachment style. This pattern would fit with a conceptualization of dimensions of attachment similar to Bem's conception of gender schematicity as a dimensional variable.

A consideration more specifically of the content of relational schemas as the organizing principle in information processing leads to different predictions. In this case we would expect to see information recalled because it is schema consistent, or matches content already encoded within the relational schema. This would be consistent with findings by Westen (1988, cited in Baldwin) who found that people preferentially attend to schema consistent information. This would also be similar to a theory advanced by Swann suggesting that people will preferentially attend to and recall information which confirms their model of self (Swann, 1983).

There are other theories which predict at least as efficient recall of schema inconsistent information. Hastie and Srull (cited in Devine & Ostrom, 1988), for instance, have advanced a model which suggests that schema inconsistent information will require greater effort to encode, thereby entailing

more elaboration in the associational network. This is essentially a model of inconsistent information receiving greater attention and longer processing. It is accompanied by data showing that when people are asked to integrate a series of propositions and allowed to control exposure time, they will attend to inconsistent information longer. However, by presenting all stimuli for an equal and brief period of time, the current study does not allow participants to over-attend to inconsistent information to a very great extent. There is also no specific demand that stimuli be integrated into a sensible whole. Thus, recalled trait descriptors will most likely be ones which are easiest to process efficiently because of consistency with some extant content of a relational schema.

Elements of the relational schema which could organize processing, and thus recall, would be model of self, model of other, and scripts for interactions. As discussed with regard to the IAS, the items are descriptors of interpersonal traits. As such, they carry a script relevant component in that they describe general ways of behaving towards interaction partners. Recalled words could be understood as reflecting interaction scripts, or, and very similarly, reflecting models of how the self behaves in relationship or the other behaves in relationship. Guided by this understanding, we would expect to find recall of words which describe the self, and recall of words which describe the other. This pattern might appear either in associational clustering in recall, in recall of greater quantities of words from the appropriate areas of the interpersonal circumplex, or both.

For a number of reasons, we can expect to find a stronger effect for the model of self than for the model of other. Many other researchers have found stronger effects for self schemas than other schemas in information processing, and a variety of explanations are put forth for this. Prentice's (1990) explanation is of particular interest. Her study showed greater effects of schematicity for self

schemas, but also showed greater effects for schematicity for schemas of familiar versus non-familiar others. She suggests that the greater effect of self schemas may be due to the people's greater familiarity with their selves than with others. Extending this explanation to relational schemas in attachment, we would expect to see differential effects of self and other schemas magnified, because the other schema is a super ordinate schema of a generalized other which includes representations of various relationship partners from both romantic and parenting relationships. The sub-schema for self should thus be more coherent, and likely more accessible for the relatively automatic processing this study is designed to investigate.

Another reason we might expect greater effect from the sub-schema for self has to do with functional value of these sub-schemas in organizing attachment behavior. As mentioned above, the knowledge being tapped theoretically has some procedural component to it. Because the stimuli are trait descriptors they function as attributes, but also as guides to how to behave in relationship. In the self schema, this procedural component is likely to be well developed and accessible because of its functional importance in guiding behavior. In the case of the sub-schema for other in relationship, these attributes will probably relate to expectations and appraisal, but lack some of the script relevant value they have in the sub-schema of self. Trait descriptors may, therefore, activate fewer associations in the sub-schema for other, resulting in less thorough processing and recall.

In order to make specific predictions about recall of trait descriptors we must consider which interpersonal traits are characteristic expressions of different attachment styles in relationships. This discussion draws particularly on the work of Hazan and Shaver (1987), Bartholomew (1990), Bartholomew and Horowitz (1991), and Kobak and Sceery (1988). What we will expect to find in

this data set is that participants preferentially recall traits describing the self they cognitively represent themselves as in relationship with others. An effect may also be shown for recall describing the way others are perceived in relationship with the self.

Perhaps the most difficult group to typify for this purpose is individuals with secure attachment styles. A unifying feature of this group is their ability to enter into relationships relatively comfortably, expecting others to accept them for themselves. Indeed, one of Bartholomew and Horowitz's (1991) dependent measures was an inventory of interpersonal problems scored on a circumplex similar to the IAS. The secure group was unique in its lack of a distinctive area of interpersonal problems. They are also uniquely able to balance their use of partners for support and their role as support givers. If there is a consistent way that these individuals cognitively represent relationships, and thus would process IAS as relevant self descriptors, it might be to recall generally positive traits including some element of control. These would most likely be items falling in the Ambitious-Dominant octant. Given the complementary positive models of self and other which underlie this style, and the balance of control these people experience in relationships, the same octant may capture their model of others as well.

The preoccupied group is much more likely to see themselves as outgoing and pleasant in relationships. These are people who enter into love relationships easily and relatively frequently, and who use their behavior in relationships to avoid negative expressions which might signal danger to the relationship. Their interpersonal problems often involve overly expressive behavior (Bartholomew & Horowitz, 1991). Thus, we would expect them to process traits from the Gregarious-Extraverted octant most efficiently. These include terms such as "perky," "outgoing," and "cheerful." Their approach to

relationships makes them exploitable, and they are often disappointed by their partners. This experience, though, may be at odds with their positive model of others and tendency to idealize partners while in a relationship. To the extent that they show an effect for others, we might expect it to involve recall of traits from either the Ambitious-Dominant octant or the Arrogant-Calculating octant.

There is less work to draw upon in predicting patterns for the two avoidant groups because most authors have described only one avoidant style rather than the two used here. Kobak and Sceery (1988) found that avoidant individuals' friends described them as relatively hostile and defensive. Participants falling within Bartholomew's fearful-avoidant style might be expected to preferentially recall traits from either the Arrogant-Calculating octant or the Aloof-Introverted octant. Traits from either of these octants could mark the defensive strategy these individuals use in approaching relationships. The octant between these two, Quarrelsome-Cold, includes traits with connotations of power and assertiveness that it seems unlikely fearful-avoidant individuals would associate with their relational schemes. As described by Bartholomew, this is another group whose model of self and other are matched, though for negativity. To the extent that there is an effect for recall of trait descriptors relevant to others, they would likely fall into the same areas suggested for self descriptors.

Dismissing individuals are typified by high self-esteem, greater control of relationships relative to their partners, and low levels of intimacy and expressiveness. These participants might associate traits from the Quarrelsome-Cold octant with their sub-schema for self in relation, and thus show higher rate of recall for these items. They might also preferentially associate items from the Ambitious-Dominant octant with their model of self. These tend to be generally positive items, such as "assertive," "self-assured,"

and "organized," as well as less positive, but possibly still applicable items such as "domineering." There is some evidence from these individuals' styles in interviews that they have less insight, and perhaps regard, for the experience of others in relationships. Thus, they may be less likely than others to show any effect in terms of a second area of efficiently recalled traits related to a sub-schema for others in relationship.

A last way of examining patterns in recall of trait descriptor items across participants would be to examine positive or negative valence of the items. This would require a priori rating of each item as positive or negative by independent raters. Recall of items could then be described either in terms of quantity of positive or negative traits, or serial clustering of responses as in Bem's work. It might be expected, for instance, that individuals who have relational schemas including positive views of self, other, and relationships--that is, who are secure--would preferentially recall positive traits. They might also show a greater degree of clustering in the recall of positive adjectives than negative adjectives because of the organizing effect of their associations with relational schemas. Individuals who have largely negative models, and an ambivalent attitude towards relationships, such as fearful-avoidant individuals, might recall more negative than positive traits. Further, investigation of clustering in recall of positive and or negative traits might illuminate whether the dimensions of underlying self and other models also function as organizing dimensions for information processing.

Summary of Hypotheses

1) The main hypothesis of this study has to do with the demonstration of an information processing bias predicted by attachment style. It is predicted that participants' scores on the attachment measure will correspond to specific

patterns in their recall of adjectives from among those presented. It is primarily expected that for participants showing any attachment style, adjectives recalled will tend to fall in particular octants relevant to their relational schemes. This methodology is unique however, and thus various possible outcomes and their likely meanings are considered.

2) It is also hypothesized that, in line with other recent work in adult attachment, a self-report measure of attachment style consisting of a list of items for endorsement will yield two, relatively orthogonal factors. These factors should correspond conceptually to the factor structure identified by both Collins and Read (1990) and Simpson et al. (1992) using Collins' measure.

3) The factors underlying the attachment measure should yield roughly the same typing of participants that a four way categorical scoring of the same measure would yield. This categorical scoring is achieved by assigning each item to the style description from which it was taken, and assigning participants to the style for which they achieve the highest score. As discussed in the Brennan, Shaver, and Tobey article, it is expected that each of Bartholomew's four styles will anchor one end of each dimension.

METHOD

Subjects

Participants in this study were undergraduate volunteers solicited from introductory psychology classes at Michigan State University. This sample can be expected to nearly approximate the standardization samples for the instruments used for this study. The study was conducted in two parts. In the first part, questionnaires were distributed to approximately 1400 students, with 797 of those students returning usable packets. The second part included 101 participants from the first part, selected on the basis of clear attachment styles.

Measures

Relationship Scales Questionnaire

Attachment style was assessed using the Relationship Scales Questionnaire (RSQ), a brief self report measure developed by Bartholomew (Griffin & Bartholomew, in press-a). This measure consists of 30 items describing thoughts and perceptions in relationships. The majority of these items are drawn from the paragraph descriptions in Bartholomew's four style categorical measure published in Bartholomew and Horowitz (1991). Additional items were added to allow scoring of the measure for either Hazan and Shaver's (1987) or Collins' (Collins & Read, 1991) three style taxonomies. This study used the full measure, rather than only Bartholomew's items, to maintain compatibility of the current data with that of other researchers. Further, the additional redundant items may increase the reliability of the instrument.

Relationship Questionnaire

This is a four item self report measure of attachment (Bartholomew & Horowitz, 1991). The measure includes four one paragraph descriptions of relationship styles. Respondents are asked to indicate which style is most like their own. Additionally, respondents are asked to indicate on four separate Likert type scales how well each relationship style describes them. Eight different versions were used for this study, differing only in order of presentation of attachment style descriptions. Order of presentation was thus counterbalanced across participants.

Interpersonal Adjective Scale

The word list used for this study was drawn from the scored items of the IAS (Wiggins, 1979) and the IASR-B5 (Trapnell & Wiggins, 1990). The IASR-B5 represents a minor revision of the original IAS, using somewhat more common words in some instances, and shifting two words from octant FG to HI (these two words were discarded from the current study to avoid ambiguity in octant scores). The IAS consists of 128 words and the IASR-B5 124 words, which, by a priori judgment, is excessive for a memory task. A list of 64 words was developed from Wiggins' items, maintaining equal representation of eight words from each octant. In some cases, it was not possible to cull half the words from an octant scale of this instrument without including words which, again by a priori judgment, might demonstrate a bias against facile recall. In other cases, words are near variants of other words within the same octant (e.g. dissocial and antisocial) or very closely linguistically related to words in an opposite octant (e.g. wily and unwily). Words were excluded so as to eliminate such word pairs

and thus guard against chunking of related words in recall which might mask the hypothesized effects of interest. In cases where it was not possible to select eight representative words for an octant without capturing such problematic words, alternatives were sought. Where possible, alternative words were taken from either Wiggins' own glossary of definitions and synonyms supplied with the IASR-B5, or from octant titles. These sources were preferred because they maintain unambiguous octant scoring. In any cases where this did not yield satisfactory word lists for an octant, comparable alternative words were chosen through a process of dictionary search and quasi-empirical ratiocination similar to that employed by Wiggins and his assistants in compiling their original list.

Procedure

For the first part of the study 1400 hundred questionnaire packets were distributed in the initial sessions of three introductory psychology classes. In each case, these sessions were devoted largely to completion of research instruments, those for the current study and a number of others. The packets for this study included the RSQ followed by other instruments which were included to support further research. Included with each packet was a machine scorable response form pre-coded with a subject number. An additional sheet, also pre-coded with the same subject number, asked participants for their first name and telephone number so that the experimenter could contact them for the second part of the study. Participants were also provided with a telephone number they could use to contact the experimenter for an explanation of the study. Completed response forms and information sheets were collected both in the first sessions of these classes and in the next several sessions.

Participants for the second part of the study were selected on the basis of a factor analysis of RSQ responses gathered in the first part. Many researchers have pointed out that individuals with clear cut prototypic attachment styles are the exception (especially Bartholomew & Horowitz, 1991). Working models can vary in consolidation and accessibility, and may contain contradictory beliefs which will lead to blended attachment styles. It is likely that disorganized attachment styles, while they can be forced into a prototype based formulation, would mask effects of schematic effects in group data. Thus, it was decided a priori to seek as participants those students with clear attachment styles closely approximating the prototypes upon which the current hypotheses are based. Students who, on the basis of the factor analytic results, were judged to have such clear, nearly prototypic attachment styles, were selected to be contacted for the second wave of the study.

The participants were tested in groups ranging from 3 to 22 in small lecture halls on the campus of Michigan State University. All sessions were run on weekday evenings. As participants entered the experiment room, the experimenter asked them to sit towards the front and center of the room so that they could see the projector screen comfortably. They were also asked not to sit next to other participants. To begin each session, the experimenter shut the door to the room, distributed packets, and provided pencils for paticipants who needed them. At this time, participants were informed that they were involved in a study of some aspects of personality and cognition. They were also told that the experimenter would ask for their first name and telephone number so that information from the current session could be matched with information from questionnaires they had filled out on the first day of their introductory psychology classes. The first page of each packet was a form asking for informed consent.

The participants then completed the Relationship Questionnaire (Bartholomew & Horowitz, 1991), a four item attachment measure. Because this measure asks questions about thoughts and behaviors in close relationships, it was assumed that it would also serve to prime relational schemas. The measure also served as a reliability check for the first wave attachment measure.

When all participants had completed the attachment measure, the groups were shown the word list. Following Bem (1981), words were presented one at a time, on slides projected onto a screen at the front of the room. Words were presented at three second intervals. At the beginning of this presentation, participants were asked to concentrate on each word as it was presented, and to try to remember as many of the words as they could. At this time the lights were turned off. In order to prevent primacy and recency effects in recall from obscuring schematic effects, order of presentation of the words was randomized across testing groups. Three seconds after presentation of the last word, the lights were turned on and participants were asked to turn to the next page of their packet and write down as many of the words as they could remember, in any order. The relevant page of the packet had the same instructions at the top of the page. Participants were allowed approximately ten minutes for this part of the task. At the end of the ten minute period they were asked to turn the page and complete the rest of the packet at their own pace. The remainder of the packet consisted of additional instruments to support possible further research and an information sheet requesting demographic information. Packets were collected individually as participants finished and were coded with participants' first names and telephone numbers so that they could be matched to subject numbers assigned in the first part. Participants were also offered an explanation of the experiment before they left.

RESULTS

Relationship Scales Questionnaire

Factor analysis of the Relationship Scales Questionnaire (RSQ) was based on all part one questionnaires returned with at least the RSQ filled out. Cases with missing items were eliminated from analysis listwise, yielding a valid N of 693 cases. No demographic data were collected for this stage of the study. Principle Components analysis was performed using Statistical Package for the Social Sciences (SPSS). Initial extraction of all factors with eigenvalues greater than one yielded six factors. The third, fourth, and fifth factors had substantial overlap of items with loadings greater than 0.3. The sixth factor had two, very similarly worded items and accounted for only 3.8 percent of the variance. The large number of factors, and substantial item overlap, made the six factor solution difficult to interpret within any theoretical framework.

In order to test hypotheses about the factor structure of the RSQ, the analysis was forced into a four factor solution. All resultant factors had eigenvalues over one. Examination of the items captured by each of these factors led to a theoretically based discrimination of attachment styles based on the factors. One factor included items reflecting fear of abandonment, and was thought to discriminate preoccupied and fearful participants from secure and dismissing participants. A second factor, including items dealing with comfort with closeness and depending on others, was expected to discriminate secure and preoccupied participants from dismissing and fearful paricipants. The third factor, capturing items that reflect comfort with and desire for closeness, was also expected to discriminate secure and preoccupied participants from

dismissing and fearful participants, but was scored in the opposite direction from the second factor. The fourth factor captured only two items and was identical to the sixth factor in the previous solution.

A two factor solution was also examined (see Table 1). The first factor of this solution had the same item membership as the second and third factors of the four factor solution, with those items which loaded on the second factor of the four factor solution loading in the reverse direction on this factor. The second factor of this solution was identical to the first factor of the four factor solution. The two items constituting the previous fourth factor dropped out from this solution, becoming a residual cluster. This two factor solution thus sorted participants into the same, theoretically sensible, groups as the four factor solution. The two factor solution also allowed for derivation of parsimonious decision rules to type the participants for attachment style. Examination of the rotated factor plot and the factor scree plot supported use of the two factor solution. These two factors form distinct clusters in a spatial plot, and account for the substantial majority of the variance resolved in all factor solutions using factors with eigenvalues greater than one.

Factor 1 (Closeness) distinguishes secure and preoccupied participants from dismissing and fearful subjects. This factor has an eigenvalue of 6.78 and accounts for 22.6 percent of the variance in the measure. Conceptually, scoring of this factor is reversed, with a negative factor score indicating greater desire for closeness and ease in developing intimacy. Factor 2 (Fear of Rejection) distinguishes secure and dismissing participants from preoccupied and fearful participants, with the former groups low on Fear of Rejection and the latter groups high. This factor has an eigenvalue of 4.50 and accounts for 15.0 percent of the variance in the measure.

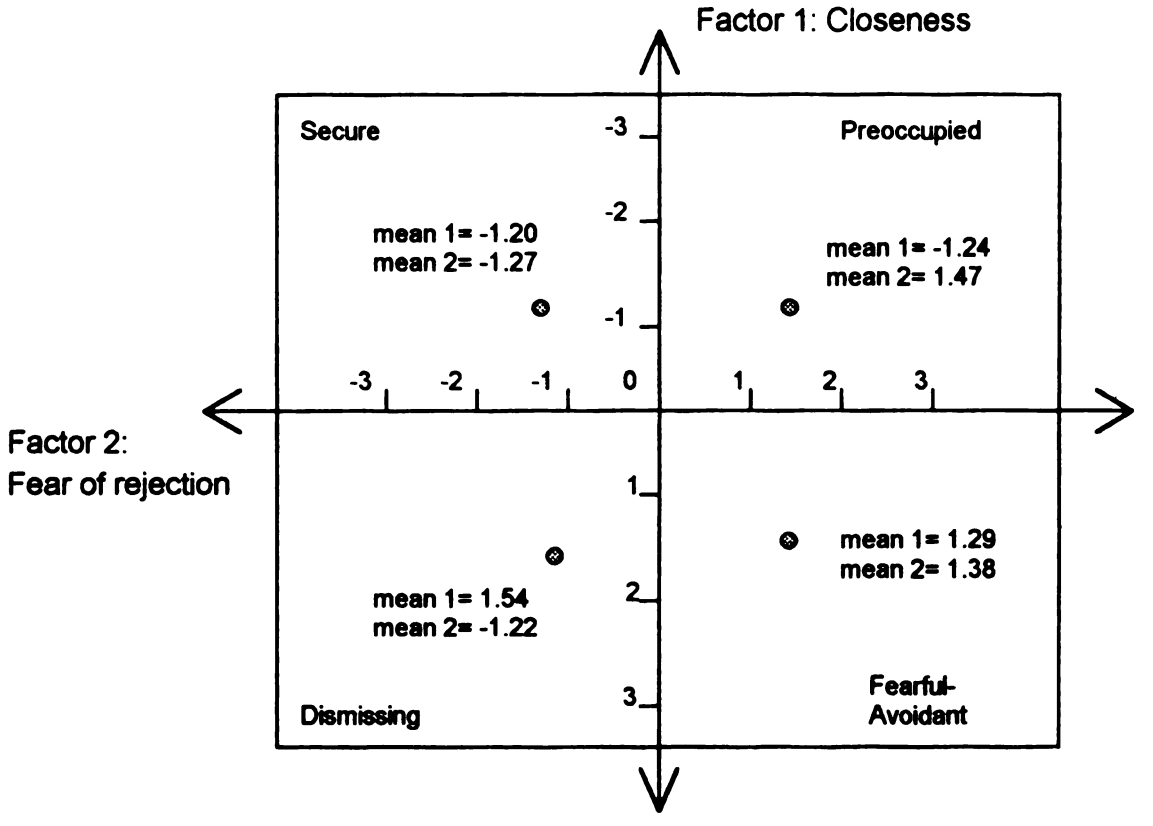
Table 1. Factor membership and factor loading of RSQ items

RSQ Item	Factor 1	Factor 2
Factor 1: Closeness		
1. I find it difficult to depend on other people.	.64	.20
24. I am somewhat uncomfortable being close to others.	.64	.33
10. I am uncomfortable depending on other people.	-.61	-.08
20. I am nervous when anyone gets too close to me.	.60	.29
30. I find it relatively easy to get close to others.	-.59	-.07
26. I prefer not to depend on others.	.57	.09
14. I want emotionally close relationships.	-.58	.30
13. I worry about others getting too close to me.	.57	.29
29. Romantic partners often want me to be closer than I feel comfortable being.	.55	.02
3. I find it easy to get emotionally close to others.	-.55	.14
7. I am not sure that I can always depend on others to be there when I need them.	.55	.41
12. I find it difficult to trust others completely.	.52	.46
8. I want to be completely emotionally intimate with others.	-.51	.42
4. I want to merge completely with another person.	-.50	.37
6. I am comfortable without close emotional relationships.	.45	-.24
2. It is very important to me to feel independent.	.32	-.11
19. It is very important to me to feel self sufficient.	.32	-.10
Factor 2: Fear of rejection		
21. I often worry that romantic partners won't want to stay with me.	.14	.74
23. I worry about being abandoned.	.05	.74
11. I often worry that romantic partners don't really love me.	.16	.71
16. I worry that others don't value me as much as I value them	.03	.67
9. I worry about being alone.	-.15	.66
28. I worry about having others not accept me.	-.04	.61
18. My desire to merge completely sometimes scares people away.	-.15	.60
25. I find that others are reluctant to get as close as I would like.	-.07	.59
17. People are never there when you need them.	.41	.54
5. I worry that I will be hurt if I allow myself to become too close to others.	.38	.46
27. I know that others will be there when I need them.	-.42	-.44
Eigenvalue	6.78	4.50
Percentage of variance accounted for	22.6	15.0

Note: Items 22 and 15 did not load above .30 on either factor, and were excluded from this factor solution.

Because the design of the study called for participants with clear, nearly prototypic attachment styles, participants were selected for the second part beginning with those having the most extreme factor scores in each attachment style category. Selection and recall of participants was carried out in a rolling manner, using progressively less extreme criterion scores until the end of the academic term during which the current participants were available. The minimum cutoff score for selection was finally set at both factor scores with absolute values greater than 0.7, ensuring that all participants fell in an extreme quartile of the distribution on either identified dimension of attachment.

101 participants were successfully recalled and took part in the second part of the study. Of these, 34 were typed as secure. Their mean score on factor 1 (Closeness) was -1.20, with a standard deviation of 0.37, a minimum of -1.96 and a maximum of -0.74. Their mean score on factor 2 (Fear of Rejection) was -1.27, with a standard deviation of 0.34, a minimum of -2.12, and a maximum of -0.71. 24 participants typed as preoccupied were recalled. This group had a mean score of -1.24 on factor 1, with a standard deviation of 0.36, a minimum of -1.89 and a maximum of -0.77. These participants had a mean score of 1.47 on factor 2, a standard deviation of 0.57, a minimum of 0.72 and a maximum of 3.11. There were also 24 participants recalled in the fearful attachment group. Their mean score on factor 1 was 1.29, with a standard deviation of 0.53, a minimum of 0.72 and a maximum of 2.98. Their mean score on factor 2 was 1.38, with a standard deviation of 0.47 a minimum of 0.72 and a maximum of 2.31. The dismissing group was the smallest, with only 19 participants successfully recalled for the second part.



Note: Factor 1 (Closeness) is conceptually reverse scored, with a negative score indicating greater desire for closeness. Axes are arranged to maintain spatial arrangement of attachment styles after Bartholomew (1990).

Figure 3: Mean factor scores for RSQ of part 2 participants, by attachment style

The dismissing participants had a mean score of 1.54 on factor 1, with a standard deviation of 0.53, a minimum of 0.81, and a maximum of 2.73. Their mean score on factor 2 was -1.22, with a standard deviation of 0.36, a minimum of -2.01, and a maximum of -0.72. These 101 participants are considered to have been typed for attachment and assigned a prototypic attachment style. Examination of the four groups' mean factor scores on the RSQ-- treating those factors as dimensions of the space defined by Bartholomew's four style model of attachment (Bartholomew, 1990)--supports this treatment of participants as members of distinct attachment types (see Figure 3). Reporting of further analyses using the factor analytic attachment style treats attachment style as a categorical variable, since the design was actually intended to reduce variance in attachment style within the identified sample.

There was a striking imbalance in the distribution of gender in this recalled sample. There were 19 males (18.8%) and 82 females (81.2%). Mean age was 18.7 years, with a standard deviation of 1.62. The oldest subject was 31, and the youngest was 17. Mean age for males was 19.21 years, with a standard deviation of 1.36, and mean age of females was 18.59 years, with a standard deviation of 1.66. The males in this sample tended to be slightly older (though the oldest participant by nine years was female), but the difference was non-significant ($t = 1.53$, $df = 99$, $p = ns.$) There was however a significant difference in the distribution of age across attachment styles ($F = 3.24$, $df = 3$, $p < .05$). Elimination of the single outlier for age (31 years old), reduced this difference to a trend with probability slightly greater than .07 ($F = 2.36$, $df = 3$, $p = ns$).

Some researchers have found gender differences in distribution of attachment styles (e.g. Bartholomew & Horowitz, 1991; Brennan, Shaver &

Tobey, 1991). In this sample 47% of the males were secure, 26% were preoccupied, 11% were fearful, and 16% were dismissing. The distribution of attachment styles among female participants was 31% secure, 24% preoccupied, 27% fearful, and 19% dismissing (rounded to the nearest percent). a Pearson's Chi-Square test showed that this distribution was within the expected range of normal variation ($\chi^2 = 3.12$, df = 3, p = .37). Because there were no significant differences in distribution of attachment style by gender, gender was not considered in comparisons of attachment measures.

It was hypothesized that the factor analytic scoring of the RSQ would produce substantially the same sorting of participants into attachment styles as would a categorical scoring of the same measure. In order to test this hypothesis, categorically based attachment scores were calculated from the RSQ responses of all participants in part 2. This was done by assigning items of the RSQ which are drawn from Bartholomew's paragraph descriptions of attachment styles in the Relationship Questionnaire (Bartholomew & Horowitz, 1991) to four separate categories. Each participant was given a score for each attachment category based on their mean endorsement of items in each of these four categories; secure, preoccupied, fearful, and dismissing. Each participant was then assigned to the attachment style for which they had the highest mean score. Six participants were excluded from this scoring because they had ties between category scores. This scoring system uses only 18 of the 30 RSQ items, because the RSQ also includes items drawn from Hazan and Shaver's descriptions (1987), and Collins' list measure (Collins & Read, 1990).

Association of scores yielded by the two methods of scoring the RSQ was first tested using a Pearson's Chi-Square test. This test showed a non chance association between the two distributions ($\chi^2 = 170.10$, df = 9, $p < .001$). Further tests were performed to test the strength of the association between

these two scores. Cohen's Kappa had a value of 0.78 for the factor analytic and categorical scorings. Cramer's V, which is conceptually similar to Pearson's r and yields scores ranging from 0 to 1 (Norušis, 1993) was calculated at 0.77 ($p < .001$).

During the second part of the study, these participants were also administered the Relationship Questionnaire (RQ) (Bartholomew & Horowitz, 1991), a four item measure of attachment in which individuals endorse each of four descriptions of attachment styles on a Likert type scale. Differences between the factor analytic scoring of the RSQ and score for the RQ were thus subject not only to method variance, but also to test-retest variance resulting from a nine to twelve week period between measurements. Pearson's Chi-Square test again showed a non-chance association ($\chi^2 = 140.68$, $df = 9$, $p < .001$). Cramer's V was 0.69 ($p < .001$) and Cohen's Kappa was 0.68.

Memory Measure

During free recall, participants wrote words down on sheets of paper which were blank except for instructions in the header and footer. Each word was coded for whether it was a correct recall of one of the stimulus words and for order of recall. Words which were correctly recalled were also coded for the octant of the interpersonal circumplex they were drawn from. Coding was carried out independently by the experimenter and an advanced undergraduate student who was blind to all hypotheses. All coding of words was carried out blind to attachment style of participants. Counting as agreements only cases where both coders agreed on exact word, octant, and order in series of recall, interrater agreement was over 98% after correction for chance agreement. Disagreements were resolved by a third coder, an advanced graduate student in psychology who was blind to attachment style of the participants.

The mean number of words correctly recalled was 15.4 , with a standard deviation of 4.4. The mean number of incorrect words, including mis-recalled words and intrusions, was 2.7, with a standard deviation of 2.8. T tests showed that there were no significant differences by gender (respectively, $t = -1.39$, $df = 99$, $p = ns$; $t = 1.44$, $df = 99$, $p = ns$). Gender was excluded from further analyses of memory measures.

The main hypotheses of this study had to do with patterns of recall of words across octants as a function of attachment style. Table 2 shows the mean number of words recalled per octant for each attachment style, and for the overall sample. Examination of mean number of words recalled per octant by participants with each attachment style did not indicate distinctive patterns of recall varying by attachment style. Because the hypothesized patterns of interest had to do with variation across octants, but within attachment style, the data were analyzed as a mixed design with the variation across octants treated as a within subjects measure. This allowed a formal test for significant variation in these patterns as the interaction term (octant scores by attachment style) in a repeated measures analysis of variance. This test showed no significant difference ($F = 0.99$, $df = 21$, $p = ns$). There was also no main effect for attachment style ($F = 1.14$, $df = 3$, $p = ns$). There was a significant main effect for the octants of the interpersonal circumplex from which words were drawn ($F = 7.63$, $df = 7$, $p < .001$).

It was also hypothesized that schematic organization of interpersonal traits might appear as clustering of words in recall. In order to test this hypothesis associated recall clustering scores were calculated for each octant, for each subject. The number of words appearing in series of two or more words from the same octant were totaled for each subject.

Table 2. Mean number of words recalled in each octant by attachment style

Attachment style		Octant 1. Dominant	2. Arrogant	3. Cold	4. Aloof	5. Lazy	6. Unassuming	7. Warm	8. Gregarious
Secure	M	1.74	2.58	1.91	1.91	2.09	1.53	1.85	2.88
	(SD)	(1.05)	(1.33)	(1.11)	(1.03)	(1.26)	(1.26)	(1.05)	(1.41)
Preoccupied	M	1.54	2.50	1.54	1.71	1.83	1.50	1.71	2.25
	(SD)	(0.93)	(1.50)	(1.35)	(1.43)	(1.40)	(1.14)	(1.40)	(1.29)
Fearful	M	1.54	2.29	2.21	1.54	1.79	1.29	2.29	1.96
	(SD)	(1.44)	(1.43)	(1.38)	(1.50)	(1.22)	(1.30)	(1.23)	(1.12)
Dismissing	M	1.42	2.58	1.47	1.74	1.58	2.00	1.95	2.37
	(SD)	(1.12)	(1.26)	(1.12)	(1.19)	(1.12)	(1.37)	(1.43)	(1.42)
Total sample	M	1.58	2.50	1.81	1.74	1.86	1.55	1.94	2.42
	(SD)	(1.37)	(1.37)	(1.25)	(1.27)	(1.26)	(1.27)	(1.26)	(1.35)

Following Bem, (1981) these numbers were then converted to a percentage of total number of words recalled by that subject in order to control for overall memory. This hypothesis was also tested by a repeated measures analysis of variance. Again, the hypothesized interaction effect was not found ($F = 1.12$, $df = 21$, $p = ns$). Neither was there a main effect for attachment style ($F = 0.15$, $df = 3$, $p = ns$). However, a main effect for octants associated with the associated recall clusters was found ($F = 6.53$, $df = 7$, $p < .001$).

Further hypotheses were made regarding schematic organization of interpersonal traits as positive or negative, in line with theories of positive and negative models of self and other underlying attachment styles (Bowlby, 1982; Bartholomew, 1990; Bartholomew & Horowitz 1991). In order to examine patterns in recall of positive or negative trait descriptors, it was necessary to generate judgments as to whether each trait descriptor was positive or negative. These judgments were made independently by two advanced graduate students in psychology. They agreed on 94% of the trait descriptors, and disagreements were resolved by the experimenter. 33 trait descriptors were judged to be negative and 31 were positive. Because the distribution of positive and negative traits was nearly equal, statistical tests were not corrected for the difference in base rate probability of recalling positive versus negative traits. For all participants, mean number of positive traits recalled was 7.18 with a standard deviation of 2.36 and mean number of negative traits recalled was 8.23 with a standard deviation of 2.99.

It was hypothesized that secure participants, with generally positive models of self and other, would tend to recall more positive traits, while Avoidant participants, with generally negative models of self and other, would be more likely to recall negative traits. Preoccupied and dismissing participants were

expected to fall in between. Since all participants had separate scores for both positive and negative words, and differences between these scores within attachment styles were of interest, this hypothesis was also tested by a repeated measures analysis of variance. Results were similar to previous analyses in that there was no interaction effect ($F = 0.61$, $df = 3$, $p = ns$), and no main effect for attachment style ($F = 1.14$, $df = 3$, $p = ns$). There was, however, a main effect for recall of positive versus negative words as a within subjects variable ($F = 9.20$, $df = 1$, $p < .01$). The hypothesis that schematic effects would appear for positive versus negative trait descriptors was further examined by calculating associated recall cluster scores for positive and negative trait descriptors. These were calculated in the same manner as described for associated recall clusters by octants. The mean score for positive traits was 4.62 with a standard deviation of 2.72. The mean score for negative traits was 5.89 with a standard deviation of 3.06. Again, patterns in recall were examined with a repeated measures analysis of variance. Also as before, the effect of interest was the interaction effect. There was no interaction effect ($F = .55$, $df = 3$, $p = ns$), nor was their a main effect for attachment style ($F = .39$, $df = 3$, $p = ns$). There was, however, a main effect the different types of words, positive or negative, in the associated recall clusters ($F = 7.75$, $df = 1$, $p < .01$).

Overall, none of the main hypotheses concerning patterns in recall of words by attachment style were supported. There was also no difference in total number of words correctly recalled across attachment styles ($F = 1.14$, $df = 3$, $p = ns$), or in number of recall errors ($F = 0.39$, $df = 3$, $p = ns$).

Before the study was run, it was thought that individuals with insecure styles of attachment might also be prone to anxiety, which would in turn interfere with their memory functioning. This difference in memory did not appear in the results. However, the items making up the neuroticism scale of the IASR-B5

were included with the part 1 measures so that trait neuroticism could be used as a covariate. The mean neuroticism score for the entire sample was 61.33 with a standard deviation of 13.26. A t test showed that there was no difference by gender ($t = -1.71$, $df = 99$, $p = ns$). Correlations were calculated to determine whether neuroticism would in fact predict differences in the number of words recalled or number of errors in recall. The correlations were, respectively, $r = -.06$ ($p = ns$) and $r = .10$ ($p = ns$). An analysis of variance did, however, show a significant difference in neuroticism across attachment styles ($F = 13.42$, $df = 3$, $p < .001$). A Tukey-B multiple range test showed that neuroticism differentiated preoccupied and fearful participants from dismissing and secure participants at $p < .05$.

SUMMARY AND CONCLUSIONS

The goal of this study was to demonstrate schematic effects in information processing, varying systematically by attachment style. Specifically, this study was designed to find patterns in free recall of words thought to be semantically related to attachment relevant schemas. The data uniformly failed to support hypotheses about information processing. The several analyses performed on the free recall data all failed to show the interaction effects for types of words by attachment style which would have indicated different patterns in recall across styles. There were also no effects for attachment style within types of words. What did emerge consistently was significant effects for word type, independent of attachment style. These differences, unfortunately, are not obviously related to the hypotheses guiding the current study. A more likely explanation is that some of the words in the free recall measure are significantly easier to remember, relatively independent of subject characteristics, and that those words are not spread evenly across octants. In the current study, this constitutes a weakness in the measure. To the extent that a free recall measure was the method of choice, all items should have been equally likely to be recalled across a random sample. [1]

While the theoretical arguments underpinning this study were not supported, this failure may reflect only that methodological weaknesses prevented a fair test of the theory. Other experimenters have attempted to

[1]Further, post-hoc, analyses controlling for frequency of the target words in common usage may reveal trends in recall despite apparent shortcomings in this measure, and thus be of use in planning future research.

demonstrate similar theoretical formulations of attachment style with considerably greater success. Collins and her coworkers have used free response techniques to demonstrate different expectations and decision making rules varying systematically by attachment style (Collins, in press; Allard & Collins, in preparation). Baldwin and his coworkers have carried out studies guided by still more closely related theoretical constructions (Baldwin, Fehr, Keedian, Seidel, & Thomson, 1993). They suggest specifically that attachment style is underlain by a combination of person and relationship schemas and scripts. Guided by this understanding, they measured reaction times for recognition of words appearing in the context of statements. These contextual statements would be more or less related to the respondents' relationship schemas depending upon their individual attachment style. Baldwin and his coworkers did find significant relationships with their research.

Measures of Attachment Style

It was predicted that a factor analysis of the RSQ would yield two relatively orthogonal factors which could be interpreted as underlying four attachment styles. This hypothesis was largely born out. Of several possible solutions, the two factor solution was the most interpretable and theoretically coherent. The factors did show some item overlap, with nine of thirty items having factor loadings greater than 0.3 on both factors. As predicted, the factor structure was similar to that derived by Simpson and his coworkers (Simpson et al., 1992). Whereas the current study identified factors for Closeness and Fear of Rejection, Simpson's group identified factors for Secure vs. Avoidant and Anxious vs. Nonanxious. Their measure was composed of items generated from Hazan and Shaver's paragraph descriptions (Hazan & Shaver, 1987), making it similar to the RSQ. Direct comparison between the functioning of the two

measures is not possible, as the current study used factor scores to identify participants with clear attachment styles and then entered those styles into analyses as categorical variables, while the Simpson study used factor scores as dimensional variables in correlational analyses. Further, Simpson et al. report null findings for analyses using the Anxious/Nonanxious dimension. Nonetheless, the theoretical similarity of the factors identified in the Simpson et al. study and the factors identified in the current study seems evident. In fact, every item on Simpson's Avoidant/Secure dimension appears on the current Closeness factor, or appears in the form of a highly analogous item drawn from the same source. The same relationship holds for Simpson's Anxious/Nonanxious dimension and the current Fear of Rejection factor.

It was also hypothesized that the factor structure identified would correspond conceptually to the factors identified by Collins and Read (1990). Two of Collins' identified factors overlap closely or completely with factors identified in the current study. Every item of her Close factor is also represented on the current Closeness factor. Five of six items on her Anxiety factor are captured by the current Fear of Rejection factor. The sixth item on her Close factor loads primarily on the Closeness factor in the current study, but is scored in the opposite direction. Collins' third factor, Depend, is more heterogeneous with regard to the factors identified in the current study, with two items which are members of the Fear of Rejection factor and four which are captured by the Closeness factor. Of these six items, four load on both factors in the current study (for the purposes of interpretation, though, all items were considered as members of only the factor on which they loaded most highly). Clearly, there are close conceptual similarities between Collins' Close and Depend factors and the current Closeness and Fear of Rejection factors. It should be recalled that the Closeness factor in the current study captured the same items as two separate

factors in a four factor solution, and so in a sense is a factor made up by collapsing together two factors tapping similar constructs--desire for closeness and ease of intimacy. This distinction makes still clearer the conceptual links between these two factor analysis results. Two methodological differences may have contributed to differences between the two sets of results. One is that Collins discarded items which loaded on more than one factor, whereas the current study retained such items. Further, Collins performed a Ward's cluster analysis, whereas the current study used a principal components analysis. Overall, the striking similarities that do exist among these different factor analyses of listwise attachment measures can be seen as conceptual replications of one another. Taken as a group, they provide support for the dimensional underpinnings of self-report of attachment styles.

It was also hypothesized that a factor analytic scoring based on all the items of the RSQ should yield roughly the same typing of participants as a categorical scoring of the same measure. This hypothesis was well supported by the findings of the current study. It was possible to calculate indices of agreement between the factor analytic scoring of the RSQ and the participants' responses to the four item paragraph description measure (RQ) which was included in the second wave. The agreement between the RQ and the RSQ was nearly as good as the agreement between the alternate scorings of the RSQ, despite the fact that alternate scorings of the RSQ were based on responses to overlapping sets of items from the same actual testing, and also despite a nine to twelve week test-retest period between administration of the RSQ and the RQ. In light of these factors the Cohen's Kappa of 0.68 and Cramer's V of 0.69 seem to indicate a reasonable degree of success in using the RSQ to identify individuals with clear and robust attachment styles. Compare this, for instance,

to Collins and Read's eight week test-retest factor correlations of 0.52 to 0.71 using the same scoring of the same measure in both testings.

The measure of neuroticism included in this study may, in itself, identify an intriguing point of departure for future study. While originally included to allow control for anxiety, this measure of trait neuroticism proved to effectively distinguish secure and dismissing participants from preoccupied and avoidant participants. This corresponds to the theoretical, and increasingly well recognized, distinction based on positive versus negative model of the self (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, in press-b).

Limitations of the Sample

In addition to methodological shortcomings already discussed, this study included flaws in the characteristics of the sample. It was a stated goal of the study to include equal numbers of participants in each attachment group in the second part. As with most published studies in adult attachment, this ideal distribution of attachment styles was not achieved. This situation is due in part to the sharply unequal distribution of attachment styles in the population. There are also (anecdotally reported) difficulties in obtaining adequate cooperation from individuals with dismissing or fearful attachment styles. While these difficulties complicate our research, they at least reassure us that our constructs have external validity.

This study also suffered from a sharply uneven gender distribution among the participants in the second part. It is impossible to know if this reflects the distribution of gender among all first part participants, because no demographic data were collected with that data set. Participants for the second part were selected solely on the basis of factor scores from the RSQ. It may be that the gender makeup of introductory psychology classes is biased to females,

although it seems improbable that 80% of introductory psychology students are female. This gender difference in the sample could have resulted from different rates of compliance by gender, resulting in more females being functionally available for the study, but this is only conjecture. Throughout the current analyses, no significant effects were observed for gender.

Overall, the outcomes of this study appear to be of limited value. The main hypotheses concerning schematic functioning in attachment were not supported. The results suggest methodological weaknesses in the measurement of the predicted variables. Thus, it is difficult to confidently assign the failure of the hypotheses to either theoretical or methodological weaknesses. Other experimenters are currently studying the nature of working models in attachment using similar constructions and enjoying greater success (Baldwin et al., 1993; Collins, in press; Griffin & Bartholomew, in press-b; Main, 1991). Given the current interest in this area and the application of well developed research methodologies from social cognitive theory, it seems likely that the next few years will see considerable development in our understanding of how working models and relational schemas actually function in adult attachment.

The factor analytic scoring of the RSQ did produce a useful and reliable sorting of the participants into attachment styles. The inter-measure reliability observed in this study may also indicate that use of the current dimensional approach succeeded in culling participants with fairly clear attachment styles; the current methodology, however, did not allow for an external test of this. Nonetheless, the ability to sort subjects by attachment style and identify individuals with, theoretically, clear attachment styles may provide a useful methodological tool both for quasi-experimental studies and for future development and exploration of attachment measures.

APPENDICES

APPENDIX A

RSQ

Please read each of the following statements and rate how much it describes your feelings about close relationships. Think about all of your close relationships, past and present, and respond in terms of how you generally feel in these relationships. Please mark your answers carefully on the bubble sheet items **1** to **30**. Respond using the following five point scale below.

Not at all like me		**Somewhat like me**		**Very much like me**
1	**2**	**3**	**4**	**5**

1. I find it difficult to depend on other people.

2. It is very important to me to feel independent.

3. I find it easy to get emotionally close to others.

4. I want to merge completely with another person.

5. I worry that I will be hurt if I allow myself to become too close to others.

6. I am comfortable without close emotional relationships.

7. I am not sure that I can always depend on others to be there when I need them.

8. I want to be completely emotionally intimate with others.

9. I worry about being alone.

10. I am comfortable depending on other people.

11. I often worry that romantic partners don't really love me.

12. I find it difficult to trust others completely.

13. I worry about others getting too close to me.

14. I want emotionally close relationships.

Not at all like me		Somewhat like me		Very much like me
1	2	3	4	5

15. I am comfortable having other people depend on me.

16. I worry that others don't value me as much as I value them.

17. People are never there when you need them.

18. My desire to merge completely sometimes scares people away.

19. It is very important to me to feel self-sufficient.

20. I am nervous when anyone gets too close to me.

21. I often worry that romantic partners won't want to stay with me.

22. I prefer not to have other people depend on me.

23. I worry about being abandoned.

24. I am somewhat uncomfortable being close to others.

25. I find that others are reluctant to get as close as I would like.

26. I prefer not to depend on others.

27. I know that others will be there when I need them.

28. I worry about having others not accept me.

29. Romantic partners often want me to be closer than I feel comfortable being.

30. I find it relatively easy to get close to others.

APPENDIX B

Relationship Questionnaire

Please Read Directions Carefully.

1) Following are descriptions of four general relationship styles that people often report. Please read each description and **CIRCLE** the letter corresponding to the style that *best* describes you or is closest to the way you generally are in your close relationships.

A. It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.

B. I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.

C. I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

D. I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

2) Referring back to the previous page please rate each of the same relationship styles according to the extent to which you think each description corresponds to your general relationship style.

	Not at all like me			**Somewhat like me**			**Very much like me**
Style A.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Style B.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Style C.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Style D.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

APPENDIX C

Modified IAS items for use as a free recall measure

This list of words was printed on slides, one word to a slide, and projected onto a screen at the front of testing rooms in randomized order.

Octant 1: Ambitious-Dominant	
Assertive	Domineering
Forceful	Firm
Persistent	Organized
Self-assured	Industrious

Octant 2: Arrogant-Calculating	
Tricky	Cocky
Sly	Cunning
Crafty	Wily
Conceited	Exploitative

Octant 3: Quarrelsome-Cold	
Ruthless	Cruel
Cold	Impolite
Ill-mannered	Hostile
Disrespectful	Uncooperative

Octant 4: Aloof-Introverted	
Silent	Withdrawan
Inward	Distant
Introverted	Impersonal
Anti-social	Aloof

Octant 5: Lazy-Submissive	
Timid	Inconsistent
Meek	Submissive
Lazy	Weak
Impractical	Disorganized

Octant 6: Unassuming-Ingenuous	
Honest	Trusting
Boastless	Guileless
Selfless	Unvain
Undemanding	Unassuming

Octant 7: Warm-Agreeable	
Kind	Tender
Accommodating	Charitable
Sympathetic	Forgiving
Warm	Agreeable

Octant 8: Lazy-Submissive	
Outgoing	Friendly
Good-natured	Pleasant
Jovial	Cheerful
Perky	Neighborly

LIST OF REFERENCES

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Ainsworth, M., Blehar, M., Waters, E., & Wall, S. (1978). Patterns of attachment. Hillsdale, NJ: Erlbaum.

Baldwin, M. W. (1992). Relational schemas and the processing of social information. Psychological Bulletin, 12, 461-484.

Baldwin, M. W., Fehr, B., Keedian, E., Seidel, M., Thomson, D. W. (1993). An exploration of the relational schemata underlying attachment styles: Self-report and lexical decision approaches. Personality and Social Psychology Bulletin, 19, (6) 746-754.

Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. Journal of Social and Personal Relationships, 7,147-178

Bartholomew, K. & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. Journal of Personality and Social Psychology, 61, 226-244.

Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. Psychological Review, 88, 354-364.

Bowlby, J. (1982). Attachment and loss: Vol. 1. Attachment, (2nd ed.). New York: Basic Books.

Bowlby, J (1973). Attachment and loss: Vol. 2. Separation: Anxiety and anger. New York: Basic Books.

Bowlby, J (1980). Attachment and loss: Vol. 3. Loss: Sadness and depression. New York: Basic Books.

Bowlby, J. (1988). A secure base. New York: Basic Books.

Brennan, K. A., Shaver, P. R., & Tobey A. E. (1991). Attachment styles, gender and parental problem drinking. Journal of Social and Personal Relationships, 8, 451-466.

Bretherton, I. (1990). Communication patterns, internal working models, and the intergenerational transmission of attachment relationships. Infant Mental Health Journal, 11, 237-252.

Collins, N. L. (in press). Attachment style differences in patterns of explanation, emotion, and behavior. Journal of Personality and Social Psychology.

Collins, N. L. & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. Journal of Personality and Social Psychology, 58, 644-663.

Crittenden, P. M. (1990). Internal representational models of attachment relationships. Infant Mental Health Journal, 11, 259-277.

Devine, P. G. & Ostrom, T. M. (1988). Dimensional versus information processing approaches to social knowledge: The case of inconsistency management. In D. Bar-Tal & A. W. Kruglanski (Eds.) The social psychology of knowledge. Cambridge: Cambridge University.

Griffin, D. W. & Bartholomew, K. (in press-a). The metaphysics of measurment: The case of adult attachment. In K. Bartholomew & D. Perlman (Eds.), Advances in personal relationships: Vol. 5. Attachment processes in adulthood. London: Jessica Kingsley Publishers.

Griffin, D. & Bartholomew, K. (in press-b). Models of the self and other: Fundamental dimensions underlying measures of adult attachment. Journal of Personality and Social Psychology.

Hazan, C., & Shaver, P. (1987) Romantic love conceptualized as an attachment process. Journal of Personality and Social Psychology, 52, 511-524.

Kobak, R. R., Cole, H. E., Ferenz-Gillies, R., Fleming, W. S., & Gamble, W. (1991). A dimensional analysis of attachment strategies. Unpublished manuscript: University of Delaware.

Kobak, R. R., & Hazan, C. (1991). Attachment in marriage: The effects of security and accuracy of working models. Journal of Personality and Social Psychology, 60, 861-869.

Kobak, R. R., & Sceery, A. (1988). Attachment in late adolescence: Working models, affect regulation, and representations of self and others. Child Development, 59, 135-146.

Leary, T. (1957). Interpersonal diagnosis of personality. New York: Ronald Press.

Main, M. (1991). Metacognitive knowledge, metacognitive monitoring, and singular (coherent) vs. multiple (incoherent) model of attachment: Findings and direction for future research. In C. M. Parkes & J. Stevenson-Hinde, and Morris (Eds.), Attachment across the Life cycle (pp. 127-159).

Main, M., Kaplan, N. & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation Monographs of the Society for Research in Child Development, 50 (1&2), 66-104.

Norušis, M. J. (1993). SPSS for Windows: Base system user's guide release 6.0. Chicago: SPSS Inc.

Prentice, D. A. (1990). Familiarity and differences in self- and other-representations. Journal of Personality and Social Psychology, 59, 369-383.

Simpson, J. A., Rholes, W. S. & Nelligan, J. S. (1992). Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. Journal of Personality and Social Psychology, 62, 434-446.

Sroufe, A. L. (1985). Attachment-classification from the perspective of infant-caregiver relationships and infant temperament. Child Development,56, 1-14.

Sroufe, A. L., & Fleeson, J. (1986). Attachment and the construction of relationships. In W. W. Hartup & Z. Rubin (Eds.), Relationships and Development. (pp. 51-71).

Swann, W. B. (1983). Self-verification: Bringing social reality into harmony with the self. In J. Suls and A. G. Greenwald (Eds.), Psychological perspectives on the self. Hillsdale, NJ: Erlbaum.

Trapnell, P. D. & Wiggins, J. S. (1990). Extension of the Interpersonal Adjective Scales to include the Big Five dimensions of personality. Journal of Personality and Social Psychology, 59, 781-790.

Wiggins, J. S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. Journal of Personality and Social Psychology, 37, 395-412.