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Perceived Conflict of Occupational and Familial Orientations and Individual Cognitive Performance

by

Keith James

A Dissertation Submitted to the Faculty of the
DEPARTMENT OF PSYCHOLOGY
In Partial Fulfillment of the Requirements For the Degree of
DOCTOR OF PHILOSOPHY
In the Graduate College
THE UNIVERSITY OF ARIZONA

1986
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As members of the Final Examination Committee, we certify that we have read the dissertation prepared by Keith James entitled Perceived Conflict of Occupational and Familial Orientations and Individual Cognitive Performance and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>v</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>vi</td>
</tr>
<tr>
<td>1. INTRODUCTION TO THE STUDY</td>
<td>1</td>
</tr>
<tr>
<td>2. METHOD</td>
<td>25</td>
</tr>
<tr>
<td>3. RESULTS</td>
<td>33</td>
</tr>
<tr>
<td>4. DISCUSSION AND CONCLUSIONS</td>
<td>43</td>
</tr>
<tr>
<td>5. REFERENCES</td>
<td>64</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1.</td>
<td>Means of creativity scores by self-esteem, type of essay written, and type of essay read</td>
</tr>
<tr>
<td>2.</td>
<td>Means of creativity scores by gender prime type, essay written, and type of essay read</td>
</tr>
<tr>
<td>3.</td>
<td>Recall scores for combined number of family and career words by self-esteem, type of essay written, gender prime type, and type of essay read</td>
</tr>
<tr>
<td>4.</td>
<td>Ratings of probability that most women would agree with content of essay read by self-esteem, gender prime type, and type of essay read</td>
</tr>
<tr>
<td>5.</td>
<td>Mean rating of probability that most males are willing to share homemaking and child-care equally with spouses by self-esteem, type of essay written, gender prime type, and type of essay read</td>
</tr>
</tbody>
</table>
ABSTRACT

A theoretical analysis of the relationship between social structure and cognitive structure is presented. Based upon this analysis, a study was done in which the cognitive activity of high and low self-esteem (SE) women was assessed under some particular social conditions. The factors manipulated were: focus of attention on either orientation toward a career or on orientation toward family; activation (via priming) of either the cognitive structure encoding masculine tendencies or that containing information on feminine tendencies; and perceptions of how well family and career functions fit together for most women.

The primary dependent measures used were tests of hand-eye coordination, of creativity, of memory and of level of negative emotion. The results partially supported the hypotheses. They indicated four-way interactions for the recall measure and for one measure of use of defense mechanisms. Two three-way interactions were observed in the analysis of the measure of creativity. The measure of emotion showed only a
main-effect of the focus-of-attention manipulation, such that women in the family-focus condition exhibited significantly more emotion. There were no significant effects on the measure of hand-eye coordination.

High self-esteem subjects were much more likely to use defense mechanisms, including repression of threatening information. Conflict increased creativity only when focus of attention was congruent with chronic or situationally-induced (masculine or feminine) tendencies.

The applicability to this data of both cognitive-psychological and psychodynamic concepts and mechanisms is assessed. It is concluded that neither theory can completely account for the data. Some practical implications of the findings are discussed.
CHAPTER 1
INTRODUCTION TO THE STUDY

A theoretical integration of some sociological and organizational culture theories of social influences on knowledge acquisition and use with psychodynamic and cognitive psychology theories of individual thinking was attempted in an earlier paper (James, 1986). The general thrust of the resulting conceptual presentation was that the nature of individual cognition is significantly shaped by three general and interactive sources of influence. The first is a set of species-wide, innate tendencies guiding cognitive development and organization. These include tendencies toward unitization of elements (e.g., Anderson, 1980; Hayes-Roth, 1977; Pribram, 1986); competing tendencies toward compartmentalization of knowledge and function (e.g., Martindale, 1981; Greenwald, 1982; Ornstein, 1986) and toward full integration of the same (e.g., Rank, 1936; Fromm, 1941); and tendencies toward social identification (e.g., S. Freud, 1922; McCall & Simmons, 1978), toward internalization of social symbols...
(Progoff, 1953) and toward the mirroring of social structure in cognitive organization (this last is mainly my own notion but, see Brown, 1936 for a social-psychological precursor; and Pribram, 1986 for a supporting discussion from a neuro-cognitive perspective).

The second set of influences are social inputs, which are, in part, strongly effective because of the innate social sensitivities just outlined. Because of these innate sensitivities, social influences are posited to be a necessary and fundamental part of individual cognitive development, organization and moment-to-moment activity. Each social group/role membership of importance to an individual is posited to serve as the node for the development of a cognitive schema which incorporates multiple sub-structures and encodes values, behavioral plans, goals, concepts, attentional and motivational guides and other heuristics which are derived from, or relate to, that group, or which have somehow become attached to a schema so derived. In other words, it is argued that social group and role memberships come to be prime-symbols around which the other symbols and processes of cognition are organized. This is what was meant by the phrase "mirroring of social structure in cognitive organization".
The third major influence is the self-schema (or ego). This is a knowledge structure which contains information about perceptions of self as a unique individual and information on goals, values and behaviors relative to that perception (S. Freud, 1927; Hull & Levy, 1979; Markus and Smith, 1981). Writers from James (1890) to S. Freud (1922) to Mead (1934) to Hull and Levy (1979) have recognized that the self is both a repository of reflexive knowledge and a major source of internal control and coordination. Its two functions can be separated for purposes of analysis and research, but they actually seem to meld together.

The authors cited above have also all recognized that the self-schema is a fundamentally socially-derived structure (though some, like S. Freud, also indicate that it has an innate basis). This structure is posited to emerge from the interaction of socially-based schemata (S. Freud, 1922; S. Freud, 1927; Mead, 1934). Later, it comes to exert some control over other cognitive structures (Rank, 1936) through internal activation or suppression of the activity of these, and by mediating between them (e.g., Markus & Smith, 1981; Pribram, 1986). This structure is the locus of consciousness, and can become conscious of its own contents and activities (Carver & Scheier, 1981; Mead,
It is proposed that the importance of this structure is partly a function of the degree of integration of the individual's social groups. The less integrated are the groups, the more important it is that this structure be well developed so as to mediate between the various socially-derived, but otherwise uncoordinated cognitive structures. The structure of both individual cognition and of cultures are posited to be partially guided by dialectic currents pulling toward integration of sub-systems, on the one hand, and toward specialization and differentiation, on the other. Rank's and Fromm's notions of an innate tendency toward full integration of cognitive structures is accepted. However, it also seems clear that there is a competing tendency toward compartmentalization. Evidence for this has been marshalled by a number of writers (e.g., Fitts and Posner, 1967; Greenwald, 1982; Martindale, 1981; Ornstein, 1986) Some structural compartmentalization is always adaptive; the more so the more complex and specialized is the society.

One function of cultural norms would be to specify relationships between group and roles, to assign priorities for the activation of the schematic representations for each, and provide guidelines for
integration of the resulting cognitive activity. However, this presupposes a high degree of integration within the culture, and, as several sociologists (e.g., Dubin, 1979; Luckman, 1979; McCall & Simmons, 1978) and the occasional psychologist (e.g., Allen, Wilder & Atkinson, 1983) point out, this is not the case in modern western societies. William Simon and John Gagnon (1984) have gone so far as to claim that societies such as our own are post-paradigmatic. According to them, "traditional" societies are paradigmatic in that "cultural scenarios and a limited repetoire of what appear to be 'ritualized improvisations' may be all that is required for understanding by either (members or outside observers)" (p. 53) and "They are paradigmatic in a double sense: in the sense of a high degree of shared meanings and in the sense of specific or concrete meanings being...consistently derived from a small group of highly integrated master meanings." (p. 54). In post-paradigmatic societies, "there are substantially fewer shared meanings and, possibly of greater significance, potentially profound disjunctures of meaning between distinct spheres of life."

This may explain, in part, why American culture places such a great emphasis on individuality (c.f., Sampson, 1977). American society seems the exemplar of
post-paradigmatic societies and, in the absence of social coordination of meaning, personal coordination of meaning becomes vital. Individuality as an important value is inculcated because development of a strong self-schema is necessary in order to have an "executive monitor" (Miller, Galanter & Pribram, 1960) which can attempt to make sense of the nonsense of divergent social meanings. Self-esteem is posited to be a measure of the strength of this self-schema in mediating between contradictory internal demands and inputs; and of its success in mediating between internal drives and desires and external constraints (c.f., Becker, 1971; 1974).

After S. Freud (1949) and Rapaport (1951), it is suggested that, when large-scale cognitive structures are activated by the ego, these are, in a sense, merged with it and alter its activities. J.C. Turner (1985) has recently presented a similar conceptualization which is also in accord with the notion of social-units-as-prime-symbols, previously discussed. He posited that when there is strong activation (internally and/or because of situational cues) of a socially derived schemata, there results a cognitive redefinition of self which moves self-image and goals and values closer to a group-prototype encoded in the activated social schema.
The Study

Most of the ideas outlined above have never been tested in any controlled way, and there has never been a test of this particular combination of notions. This study was intended as a first effort at such an empirical investigation. This general intention was translated into two goals. One was to demonstrate that situational cues relating to social groups are capable of activating large-scale structures associated with these. Using situational cues to activate some cognitive structure is known in cognitive psychology as priming (e.g., Wyer & Skrull, 1981; Higgins & King, 1981—see below for some further discussion of this concept). By way of this technique, it was hoped to begin producing evidence that social grouping factors serve as the organizational nodes for large-scale cognitive structures, structures capable of affecting virtually all aspects of cognitive activity.

The second was to investigate how this theory might be applied to a particular social issue and to gain insight into the psychological implications of that issue. The question of the fit of family and occupational orientations of individuals relative to individual ego-strength and to the activity of a particular social-role associated cognitive structure was
the specific issue selected for use in this investigation. Family and occupational groups are clearly two of the most powerful that exist within modern societies, and it seems clear that their functions and goals are not always compatible. There is some evidence—mainly anecdotal, case study and survey—indicating that these domains often do lead to conflict in individuals' lives (see Richardson, 1981 for a review). Hewlett (1986) claims that this conflict is the result of two antagonistic cultural norms about the first priority for women: the traditional one of "sainted motherhood"; and the more recent, women's-liberation-movement derived, ideal of self-expression through personal achievement. Thus, in line with the analysis presented, the ego would presumably often be necessary as a mediator between the two group orientations, and ego-strength (self-esteem) would presumably be an important indicator of how effective this mediation is likely to be.

In addition, as the title—"Occupational and family roles: A neglected intersection"—of Richardson's article indicates, the available evidence seems woefully inadequate as to the circumstances and mechanisms of the conflict, as well as with regard to its outcome for the individual and for the work and family units. One
further purpose of this study, then, was to investigate, these questions.

Four specific factors were examined. One of these was focus of attention on one of two sets of internalized values and goals--either those related to romantic relationships (for an explanation of why romantic relationships as opposed to child bearing, child care or other aspects of family relationships, see the methods section, below) or those related to occupational aspirations. If the theory discussed is correct, it is the ego (self-schemata) which attends, with both internal and external cues determining to what. In this case, the main external cues were in the form of a request that the subject write an essay on either her ideas of an ideal career or her notions of what would constitute an ideal romantic relationship. Obviously, the ideas, values and goals produced--whether explicitly expressed or not--by this request constituted the internal cues.

The second aspect was activation of either the masculine role schema or the feminine role schema. According to Bem (1981), a gender schema is a network of gender-related associations which, when operative, produces a "generalized readiness to process information on the basis of the...associations that constitute the gender schema" (p. 355). Similarly, Markus, Crane,
Berstein, and Siladi (1982) define a gender schema as a "network of knowledge relevant to masculinity or femininity" (p. 39).

These authors, as well as Simon and Gagnon (1984) and Markus (1977) argue that the gender schemata are very powerful and wide-ranging ones. These two schemata, in other words, contain much information regarding appropriate cognition and behavior under a variety of circumstances. These schemata were chosen for use for this reason. Masculinity and femininity are labels for broad nets of interconnected values, ideals, tendencies, skills and behavior patterns. Bakan (1966) and Jung (1953) claim that both are innate in the sense that both seem to be inherent human potentials which can be observed to be utilized as important parts of the social organization of most cultures (though some of the details of definitions and expectations often differ).

However, Rosser (1982) points out that the genetic information contained by the Y chromosome of males--the only invariant genetic difference between males and females--is extremely limited. Therefore, complex behavioral and cognitive patterns cannot be genuinely sex-linked. And, masculinity and femininity do not seem to be.

Research by Bem (e.g., 1974; 1981), Harrington
and Andersen (1981), and Spence and Helmrich (1978), among others, has indicated that both males and females internalize the stereotypes for both masculinity and femininity. Ludovici, writing in 1927, agreed that both sexes have the potential for both masculine and feminine tendencies and also argued that important shifts in Western cultural patterns in the 100 to 150 years prior to his work had greatly weakened societal forces which had served to strongly suppress the masculine in most women and the feminine in most men. Darley (1976) reviews evidence on gender roles and proposes, based on her review, that most men and women are capable of exhibiting, and actually do exhibit, both patterns. However, according to her, the changes over the last forty or more years in the prescriptions for women and the inconsistencies which these changes have created mean that a woman will more often exhibit both tendencies than will a man. Supporting this assertion is the fact that Harrington and Anderson (1981) found evidence that both men and women show both masculine and feminine tendencies, but that women are more likely to experience some conflict between these two internalized modes of operating than are men.

It should be noted that all of these authors agree that the concepts of masculinity and femininity are
valuable for understanding human behavior, so none of them argues that they should be abandoned as theoretical constructs because times have changed. Rather, they are arguing that we need to recognize that masculinity and femininity are more complicated than has often been acknowledged in that virtually all males and all females will exhibit each characteristic at some time and under some circumstances.

The theoretical discussions of gender-schemata just presented seem congruent with the previous presentation about cognitive structure reflecting social structure. The gender schemata fit with the focus of attention manipulation in that several researchers and theorists (e.g., Bakan, 1966; Maccoby, 1966; Horner, 1972; Darley, 1976; Richardson, 1981) indicate that the "feminine" mode of operation, as currently constituted, tends to yield strong orientations toward social connections of all sorts, and toward romantic relationships, in particular; while the "masculine" mode is postulated to lead to a strong orientation toward personal achievement. Males are reported (e.g. Crandall, 1977; Horner, 1972; Maccoby, 1966) to be generally more achievement oriented than females. Females, on the other hand are reported to be more oriented toward interpersonal skills (e.g., Crandall, 1969). Both males
and females seem to view social skills as more of a "feminine" talent (Nash, 1975). Wood and Karten (1986) found that males viewed themselves as more competent than did females; that males were perceived by others as more competent than were females; and that males engaged in much more task-directed behavior, while females engaged in more behaviors aimed at facilitating social interactions. Bakan has, in fact, proposed that femininity is a reflection of a general human tendency toward **communality**—that is, toward social cooperation and social coordination, while masculinity is a reflection of a tendency within the human species toward **agency**, or independence of action and interpersonal competition.

In sum, I would propose that both males and females internalize both of the patterns of activity which are labeled "masculine" and "feminine" into separate schemata. Both of these patterns may, in fact, be built upon species-typical innate predispositions. However, cultural norms, personal experience and situational cues will tend to suppress the feminine aspects of men and the masculine aspects of women.

For this research, an effort was made to trigger either the masculine or the feminine schema of women into greater activity by priming one or the other using
environmental cues. Wyer and Skrull (1978) and Higgins and King (1981) explain that recency and frequency of use seem to be the main determinants of how likely it is that a schemata will be active at any particular time. By presenting environmental cues which are congruent with the content and function of a schema, that schema can be activated and will be more likely to be active in the handling of subsequent environmental and internal inputs.

In this study, a fake personality inventory was used as the prime. There were two versions of this, one which included only behaviors which fit the stereotype of masculinity, the other, only those which fit the stereotype of femininity (these stereotypes being as defined by Bem, 1974). On it, the questions were phrased so that virtually everyone would end up agreeing with most of them (e.g., "At least once in awhile my emotions get the better of my reason"). Agreeing that these behaviors are self-descriptive seems to trigger the activity of the appropriate gender-schema. Evidence for this was produced in a previous study (James & Scott, 1985) in which two groups of women given the two versions of this inventory showed significant differences on the Bem Sex-role Inventory (Bem, 1974). Those given the feminine prime version had higher femininity scores than those given the masculine prime. Those given the
masculine prime had significantly lower femininity scores than those given either the feminine version or given no prime prior to completing the sex-role inventory.

The third factor examined was how information on cultural norms about integration of the two group (family and occupational) orientations would affect performance. In this case, information was given indicating either that most women manage to be at least reasonably successful at having both a career and a family or that most do not so manage. This was introduced through one of two versions of an essay by Goodman (1985). In the original version, the number of women who have left high-powered careers was lamented and the issue was discussed mainly in terms of a career and family conflict. In the second version (which was created by changing some words and the slant of some phrases in the original), the number of women who were managing to have both a high-powered career and a family was commented upon and the issue was discussed mainly in terms of a career and family balance.

The last factor was to the women's pre-existing levels of self-esteem as an indicator of ego strength. This is considered the definition of self-esteem (SE). It seemed important to include this factor because several studies (e.g., Brockner, 1979a; Brockner, 1979b;
Brockner & Guare, 1983; James and Greenberg, 1986) have shown that low- and high-SE individuals react differently with regard to cognitive performance when exposed to the same types of social-situational manipulations. Therefore, the Gergen Inventory (Gergen, 1962), a measure of self-esteem, was given to all subjects. A median split of scores—advocated by Brockner as the best approach for including self-esteem as a factor in a study—was used to group the subjects for the data analyses.

Dependent Measures and Hypotheses

The first measure of the effects of these factors on cognitive activity was a test of hand-eye coordination, the Digit-symbol Test (Wechsler, 1958). The second was a test of creativity, the Uses-for-Things Test (Getzels and Jackson, 1969). These can be grouped as measures of cognitive productivity, though the type of thing produced—physical in one case, conceptual in the other—differs. A four-way interaction on both of these dependent variables was expected such that the career focus-of-attention/masculine-prime/conflict-essay/high-SE combination would produce the best production.

Focus of attention on career seems to be more in
keeping with achievement than is focus of attention on relationship (c.f., Darley, 1976; Richardson, 1981). A Masculine perspective, as discussed previously, also seems to be tied more to achievement than a feminine one. In particular, Harrington and Anderson (1981) concluded that this pattern also held true for creativity, based upon findings that levels of masculinity correlated significantly and strongly with creativity for both males and females, while femininity correlated negatively with it for both sexes. In psychoanalytic theory (e.g., S. Freud, 1949), creativity is explained as the outcome of intrapsychic conflicts. John-Steiner (1981—"internal dialogues") and Mearns (1958—activation of "secret unexpressed selves") reach similar conclusions from two non-psychoanalytic perspectives. Thus, the conflict condition was posited to be likely to enhance creativity.

Finally, high self-esteem seems to be associated with better cognitive performance, in general (Brookner, 1979a), and with higher creativity (Getzels & Jackson, 1969), in particular.

The career/feminine/conflict/low-SE condition was expected to yield the poorest performance because neither femininity nor low self-esteem is associated with career orientation, thus the combination of these should tend to produce limited involvement for the women in this
condition. Both things are associated with orientation toward relationships, however, and evidence that careers and relationships tend to be in conflict for women should lead to motivation to achieve being reduced in this case.

Finally, the combinations of conditions on the four factors specified as the ones expected to produce the best and worst performances seem to be ones where the levels of these factors are highly congruent with each other. Thus, the effect of each should be exacerbated by that of the others. The effects of the remaining sets of possible combinations of these factors were more problematic, and no specific hypotheses were generated for these. They were, however, expected to differ from each other.

Another measure of cognitive activity utilized was a test for recall of information from the essay the subjects read about the congruence, or lack of same, of family and career aspirations for women (recall that there were two versions of this essay, one indicating general congruence, the other indicating general conflict). Two important theories yield differential predictions for this measure, and predictions based on both of these will be compared to the results.

The work of Rogers (e.g., 1977; Rogers and Rogers, 1979) and others (e.g., Kuiper, 1981; James,
under review) indicates that the self-relevancy of information largely determines how much of it will be encoded in memory, with greater self-relevancy leading to more encoding (see Rogers, 1981 for an extended discussion of this theory).

This line of theorizing tends not to distinguish between information that is self-relevant but reflects negatively on the self or on important values and goals and information that is self-relevant and neutral or positive. On the other hand, those in the psychodynamic tradition (e.g., S. Freud, 1953; A. Freud, 1946; Becker, 1974) place less emphasis on self-relevancy (ego-involvement), per se, and more on whether the information has pleasurable or threatening connotations. In this formulation, information which threatens important aspects of self-image or important goals or values will be subject to activity by defense mechanisms which will suppress or transform it—this being the definition of denial (c.f. A. Freud, 1946).

Thus, the first theory would predict that the relevancy of the information in the essay to the self-schemata will determine how much of it will be recalled, regardless of whether that information has a negative valence. In fact, a negative valence should increase self-relevancy, since negative import may
indicate the need for changes in cognitive or behavioral activity, presumably making it more relevant to the coordinating and goal-orienting activities of the self-schemata. The second would predict that a negatively valent information would lead to poorer memory, in general, and more so to the extent that there is ego involvement.

From the first theory, we can derive the prediction that the career/masculine/conflict/high and the relationship/feminine/conflict/low conditions should produce the best recall because these will have the greatest match of chronic and acute self-schemata activity and information content. From the second theory, we can conclude that these same sets of conditions (with the exception of the substitution of the feminine in place of the masculine in the first—see below) should produce the worst recall, since these would be the conditions where the information would be most threatening. The feminine gender prime is substituted for the masculine in the first instance because Sullivan (1962) indicates that repression is a feminine response to threat. This is also in keeping with the discussion of how masculinity and achievement-orientation go together, which suggests that the masculine prime should lead to more of a tendency to make an active response to
threat. This should particularly hold for high-SE women who are more masculine, more achievement-oriented, and more likely to show shifts in cognition and behavior in response to threats to self-esteem (c.f. Nadler & Fisher 1986).

The final primary dependent measure will be a self-report of emotion, negative emotion in particular. This will be used primarily as a means of sorting out the processes underlying any effects observed. With creativity, the psychodynamic tradition indicates that psychic conflicts produce negative emotional states which then provide the energy for improved output. As indicated above, other theories indicate that the same outcome may result from cognitive availability of divergent sets of concepts and values and goals, which are then either more likely to be combined in unique ways or more likely to result in the materials at hand being perceived differently than they otherwise would be.

By testing for differences in emotional states and comparing the pattern of these to the pattern of changes in creativity, we may be able to get evidence about which explanation best fits reality. Similarly, for the conflicting psychodynamic and more purely cognitive theories of information retention and retrieval, negative emotional states would be expected to
be related to recall based on the former, and not to be so related based on the latter. One additional purpose of the emotionality measure was to assess whether femininity is associated with greater emotionality as many laymen seem to, and some theorists (e.g., Bem, 1974) clearly do, think that it is.

There were four other, secondary, dependent measures from the essay-evaluation form which subjects completed as a cover for the presentation of the essay they were asked to read (see the Procedures section, below). These were analyzed mainly to help clarify the findings on the primary measures. Some also served as manipulation checks.

An item which asked for an evaluation of how well-written the article was was included in the data analysis for two reasons. First, as a check on whether the two versions of the article were perceived as being significantly different in quality. This was considered necessary because the no-conflict version was produced by way of some fairly substantial changes in wording of Goodman’s (1985) original article by the current author. It was considered possible that these changes might significantly changed the perceived smoothness or stylistic consistency of the article. The second purpose was to try to see if some women might disparage the
quality of the article as a defense against accepting the information it contained.

An item which asked subjects to rate the likelihood that the author of the article was male was also included partially as an indirect test whether or not subjects might be capable of detecting some differences in the content or form of the article. Recall that the author of the original article was female, while the changes were made by a male (the current author). This measure was also included partially as a manipulation check for the gender prime. Individuals seem to project their own beliefs (Ross, Greene & House, 1977) and characteristics (James and Greenberg, 1986; Turner, 1985) onto others. If the gender prime worked as expected, one would expect that the women who received the masculine prime would be more likely to judge the article's author to be a male.

A third item, which asked for a rating of how likely the subject thought it was that most women would agree with the conclusion reached in the essay (with this conclusion being either that most women cannot manage both a career and a family at the same time or that most women can manage both, depending on which version of the essay the subject read), was included as another way of checking for a defensive dismissal of the information on
cultural norms. It was also thought that the results on this item might shed some light on the effects of the gender prime and self-esteem factors, in that these might affect the expressed likelihood by influencing how much the subjects saw themselves as like other women.

The fourth item used from the essay evaluation sheet asked for a rating of how likely the subjects felt it was that most men were willing to share child-care and homemaking duties with their spouses. This was analyzed to investigate the effects of the four factors under examination on women's inclination to assign blame or praise to males for the social outcomes that women experience. Assigning blame to males would be another possible defense mechanism. Based upon the discussions above, low-SE women and women given the masculine gender prime would presumably be more likely to assign responsibility to males for positive outcomes than would high-SE women and women given the feminine prime.
CHAPTER 2

METHOD

This section presents the detailed study procedure and describes the participants, the materials, and the scoring of the dependent measures. Important background information regarding the decisions made on these issues was given in the preceding chapter.

Subjects

The subjects were 100 female students from psychology courses at the University of Arizona who participated in partial fulfillment of a course requirement. There were several reasons for limiting the subject group to only women. First of all, there is good evidence (see Richardson's 1981 review) that women generally are more invested in family and family related issues than are men. Secondly, there is some indication that occupational and family conflicts are stronger—or, at least, more likely to surface—for women than for men (Coser & Rokoff, 1971; Goodman, 1985). Thirdly, there is some indication that men and women react differently to conflicts between occupational and familial orientations (Osipow, 1975).
Finally, Lenney (1977) and Lenney, Browning and Mitchell (1980) have provided evidence that social situational factors influence the cognitive performance of women more than they do that of men. This led Lenney, Browning and Mitchell to state that: "Given that their frequently low self confidence is likely to deter women from achievement, it will be critically important to determine precisely the extent to which the situation does play a role in increasing or decreasing (cognitive performance)...very few studies to date have been designed directly to assess the impact of specific situation variables upon sex differences...". Thus, this study served an additional purpose by helping to address this important practical and theoretical need.

Very few of the students who participated in this study were married, and most of those who were employed held only temporary and/or part-time positions. However, previous surveys by the present author using Kuhn and McPartland's (1954) Who-am-I questionnaire to investigate self-images of students at this university have indicated that many of the undergraduate women have strong orientations toward family life as well as a significant commitment to a career.

These women's peer groups of classmates preparing for similar types of careers provided a social unit that
is analogous to a job-related social group, while their boyfriends and other male acquaintances provide a social connection which seems closely tied to their aspirations for future family lives (James, under review). Moreover, since females seem to be socialized within families to be much more oriented toward marriage and family than are males (c.f. Richardson, 1981), it seemed likely family-orientation would be a salient cognitive organization point even for this set of subjects. Thus, this population seemed adequate for a laboratory simulation of some the types of situational factors which might be involved in producing a conflict between psychological tendencies relative to family and those relative to work.

**Procedures and Materials**

A female experimenter conducted all sessions. Subjects were run in a large room in groups ranging in size from 24 to 31 individuals. Subjects were told that the study was one of how people evaluate written information, and how was this related to personality characteristics and to levels of particular kinds of cognitive abilities. Materials were presented to the subjects in the order in which they are described here. At the beginning of the session, subjects were told that
they would be completing several personality inventories, reading and evaluating an essay and performing some brief cognitive tasks. They were seated at a distance from each other and asked not to look at anyone else's work. They were told that this was done to assure confidentiality but, in fact, it was intended to prevent them from noticing differences in the content of the different versions of the forms used. Subjects were instructed not to put their names on any of the materials.

The subjects were given a packet of materials and told to go through and perform each task before looking at the next page. First in this packet was the Gergen Self-esteem Inventory (Gergen, 1962), labeled "General Personality Inventory" on the version given the subjects. After the self-esteem inventory came a form labeled "Autobiographical Sketch", the last item of which asked them to write either the essay about ideal career or the essay about ideal relationship. Next was the manipulation for priming either the masculine or the feminine schemata, the "Maslach Personality Inventory". The third manipulation, the essay which the subjects read, came next, followed by an evaluation form and the form for self-report of emotional state. On this latter, each subject rated several adjectives, using a 0 to 9
scale where 0 meant not at all and 9 meant completely, for how well each applied to her current mood state. Three of these adjectives--dissatisfied, agitated and anxious--were summed to produce a score of negative emotion for analysis. This was the last form in the packet of materials.

Levels of the three manipulated variables were completely crossed, with each subject randomly assigned to a combination of levels. The woman running the sessions was blind to subjects' conditions, and blind to the hypothesized outcomes.

When all of the subjects had completed all of the forms in the first packet, a copy of the Digit Symbol test was placed in front of each of them. They were given this face down, and were instructed not to turn it over until told to do so. On the Digit Symbol test, an abstract symbol is assigned to each number between zero and nine, and individuals completing it are required to substitute these abstract symbols into boxes beneath a series of ninety such, randomly arranged, numbers. This test was administered according to the standard instructions given by Weschler (1958). The score for this measure was simply a count of the number of substitutions which the subject was able to complete in the allotted time.
The Uses-for-Things test was given to the subjects next. This test listed four objects (a brick, a pencil, a paper-clip and a piece of paper), and subjects were instructed in writing to come up with as many potential uses for each of these objects as they could. Subjects were informed that they would be allowed only eight minutes to work on this task, and were told to be sure to give at least some uses for each object listed. They were told to turn the forms over and begin the task. After eight minutes, they were told to stop working and the forms were collected.

Scoring of the Uses-for-Things test involved several steps. Getzels and Jackson (the originators of the test) argue that the best way to assess creativity is to combine a measurement of volume of output with one of uniqueness of output. In their scoring scheme, however, the average frequency of the uses mentioned by each subject and the number of uses which she gave were scored and analyzed separately. The procedure used in this study was a modified version of one used by Getzels and Jackson in which a single score was produced which incorporated both aspects of creativity such that increases in the score reflect increases in both volume and uniqueness of uses.

The first step in the scoring was to count the
number of times that a particular use for a given object was mentioned by the subjects in the total sample. This gave a frequency of mention for each use. Next, the sum of the frequencies of all of the uses given was calculated for each individual participant. This value was then divided by the total number of uses given by the subject to produce an average frequency (reflecting the average uniqueness or commonality of the uses listed by that individual) for each subject's suggested uses.

In counting up the total number of uses which a subject gave, only uses to which the object could legitimately be put were counted. Obviously, determination of the legitimacy of the uses involved a subjective judgment and Jackson (the originators es was not simply divided into the total number of uses because this would have tended to produce vanishingly small values.) The derived score was subjected to analysis.

The subjects were then given an instruction sheet for a surprise recall test. They were told that they would have three and a half minutes to work on it, then told to turn the sheet over, read the instructions and to follow them. The instructions asked them to list all of the nouns that they could remember from the essay they had read about women's careers and families. Since both versions of the essay contained both career-related
nouns--e.g., job, office, MBA--and family-related nouns--e.g., children, mother, home--, recall for these two word types was scored separately for each subject in order to assess whether there was differential recall for information regarding career and that regarding family.
CHAPTER 4

RESULTS

Data from each of the main dependent measures were analyzed using a series of separate Four-way ANOVA's. In addition, the ratings assigned by the S's to question six of part one of the essay evaluation form and questions one, six, seven, and eight of section 2 of that same form were each, and individually, tested in the same way. The type of essay the subject wrote (ideal career versus ideal relationship), the type of gender-schema prime she received (masculine versus feminine), the type of essay she read (career/family congruence versus career/family conflict) and a median split on chronic self-esteem (high versus low) were the four grouping factors.

Item 1 from the Autobiographical Sketch, which asked for a 0 to 9 rating of the statement "I am determined to establish an interesting and valuable career for myself once I finish my degree"; item 2 from the same form, which asked for a 0 to 9 rating of the statement "I intend to marry and have children within the next five years"; and the number of items agreed with on
the gender prime manipulation (the "Maslach Personality Inventory") were entered in the analysis as covariates. To methods of using the rating of career and family aspirations were tried. First, the difference between the two ratings was computed for each subject and this difference score used as a covariate. Next, one of these ratings was selected for each subject, depending on which type of essay she wrote. If she received the form asking her to write an essay about her ideal career, then her rating of how important establishing a career was to her was entered as a covariate. If she wrote the ideal-relationship essay, then her rating of how important marrying and establishing a family was to her was entered as a covariate. Neither difference scores nor single-item raw scores showed a significant effect in any of the analyses.

For scores from performance on the Digit Symbol task, the ANOVA showed no significant effects of any of the manipulations, all F's < 1.68, p > .1.

For the creativity scores from the Uses for Things test, there were no significant main effects; there was a mariginally significant two-way interaction effect of the gender prime and the median split, F(1, 74) = 3.52, p < .1; there was a significant three-way
significant three-way interaction of type of essay written, type of essay read and the median-split on self-esteem, $F(1,74)=8.10$, $p=.005$. Means for the marginal two-way interaction are not shown. Means for the first significant three-way interaction are shown in Table one.

Table 1.
Means of creativity scores by self-esteem, type of essay written, and type of essay read.

<table>
<thead>
<tr>
<th>High Self-esteem</th>
<th>Essay read</th>
<th>Essay written</th>
<th>relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essay read</td>
<td></td>
<td>career</td>
<td></td>
</tr>
<tr>
<td>conflict</td>
<td>1.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no-conflict</td>
<td>1.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Self-esteem</td>
<td>Essay read</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Essay read</td>
<td></td>
<td>conflict</td>
<td>0.856</td>
</tr>
<tr>
<td>conflict</td>
<td>1.25</td>
<td></td>
<td>1.40</td>
</tr>
<tr>
<td>no-conflict</td>
<td>1.25</td>
<td></td>
<td>1.13</td>
</tr>
</tbody>
</table>

Even though the fourth factor, the gender prime did not significantly interact with the other three as had been anticipated, the pattern of means was in the hypothesized direction. Therefore, tests for significant differences between the means created by this three-way
interaction were conducted using the student's $t$. These tests indicated significant differences between the career/conflict/low (ccl) and the career/no-conflict/low (cnl) conditions, $t(1,10)=1.67$, $p<.05$; between the ccl and the relationship/conflict/low (rccl) conditions, $t(1,15)=-1.83$, $p<.05$; between the ccl and the career/conflict/high (cch) conditions, $t(1,11)=-3.16$, $p<.01$; between the cch and the relationship/conflict/high (rch) conditions, $t(1,17)=2.48$, $p<.05$; and between the cch and the career/no-conflict/high conditions, $t(1,20)=1.95$, $p<.05$. (All tests were uni-directional. Levene tests for differences in variances showed significant difference for each of the first three pairs reported. Therefore, the $t$ values reported for those three tests were calculated using separate variance estimates for the two groups.)

Means for the second significant three-way interaction are shown in Table two.

Table 2.
Means of creativity scores by gender prime type, essay written, and type of essay read.
Feminine prime

<table>
<thead>
<tr>
<th>Essay written</th>
<th>Career</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essay read</td>
<td>1.06</td>
<td>1.03</td>
</tr>
<tr>
<td>conflict</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no-conflict</td>
<td>1.05</td>
<td>1.45</td>
</tr>
</tbody>
</table>

Masculine prime

<table>
<thead>
<tr>
<th>Essay written</th>
<th>Career</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essay read</td>
<td>1.35</td>
<td>1.35</td>
</tr>
<tr>
<td>conflict</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no-conflict</td>
<td>1.29</td>
<td>.970</td>
</tr>
</tbody>
</table>

The pattern of these means was not in line with the hypothesized outcome. Therefore, orthogonal means were tested using Turkey's (a) test. There were no significant differences.

For the measure of recall from the essay read, the ANOVA also included word-type as a within-subject factor, with recall of career-related words and family words entered as separate scores. This analysis showed a significant main-effect of type of essay written, $F(1, 77)=4.54$, $p<.05$; and a significant main effect of word-type (such that more family related words were recalled), $F(1,78)=29.48$, $p<.001$; a significant two-way interaction of essay written and the gender prime, $F(1,77)=4.64$, $p<.05$; a marginal two-way of essay written and essay read; a marginal two-way of word-type and essay read, $F(1,78)= 3.54$, $p<.1$; a significant three-way of word-type, gender prime and essay read, $F(1,78)=4.82$,.
p<.05; a marginal three-way of word-type, essay read and the self-esteem median-split, F(1,78)=2.87, p<.1; and a significant four-way interaction of the four grouping factors, F(1,77)=6.91. Since lower-order effects are difficult to interpret when significant higher-order effects are present, and since there would need to be multiple and confusing tables to list the means for the cells created by all of these significant effects, only the means for the four-way interaction are given, in Table three.

Table 3.
Recall scores for combined number of family and career words by self-esteem, type of essay written, gender prime type, and type of essay read.

<table>
<thead>
<tr>
<th>High Self-esteem</th>
<th>Essay written</th>
<th>relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>career</td>
<td></td>
</tr>
<tr>
<td>Prime</td>
<td>fem</td>
<td>mas</td>
</tr>
<tr>
<td>Essay read</td>
<td></td>
<td></td>
</tr>
<tr>
<td>con</td>
<td>3.8</td>
<td>5.7</td>
</tr>
<tr>
<td>no-con</td>
<td>5.2</td>
<td>5.0</td>
</tr>
</tbody>
</table>


Low Self-esteem

<table>
<thead>
<tr>
<th>Prime</th>
<th>fem</th>
<th>mas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essay read</td>
<td></td>
<td></td>
</tr>
<tr>
<td>con</td>
<td>4.6</td>
<td>5.0</td>
</tr>
<tr>
<td>no-con</td>
<td>4.3</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Comparison of sets of orthogonal means on this measure using t-tests indicated significant differences only between the career/feminine/conflict/high condition and the relationship/feminine/conflict/high condition; and between the career/masculine/no-conflict/low condition and the relationship/masculine/no-conflict/low condition.

For the measure of emotion, there was only a main effect of the type of essay written, $F(1, 76)=3.42$, $p=.07$. The mean self-rating on dissatisfaction/anxiety/agitatedness was 7.73 for women in the ideal-career condition, and 12.23 for women in the ideal-relationship condition.

For the first evaluation of the article analysed, the rating of how well-written, in general if was, there was only a significant effect of the gender prime, $F(1, 77)=4.31$. The mean for those in the masculine-prime condition was about 5.2, while that for women in the feminine-prime condition was about 5.95.
For the second evaluation analysed, that of rated likelihood that the author was male, there was a marginal main effect of the gender prime, $F(1, 77) = 3.23, p = .076$, and a significant main effect of the self-esteem median-split, $F(1, 77) = 5.38, p < .05$. The mean for women in the masculine prime condition was 38, while that for women in the feminine prime condition was 27. The mean for high-SE women was 41, while that for low-SE women was 24.

For the third evaluation, that of the question which asked that subjects give a probability value for how likely they thought it was that most women would agree with the conclusion reached in the essay (that career and family compliment each other or that they are in conflict), there was a significant two-way interaction of the type of essay written and the median-split, $F(1, 77) = 10.92, p = .001$; a marginal two-way interaction of the gender-prime and the type of essay read, $F(1, 77) = 3.47, p = .07$; and a significant three-way interaction of the gender-prime, the type of essay read and the median-split, $F(1, 77) = 5.66, p < .05$. The means created by the significant three-way interaction are shown in Table four.
Table 4
Ratings of probability that most women would agree with the content of essay read by self-esteem, gender prime type, and type of essay read.

<table>
<thead>
<tr>
<th>High Self-esteem</th>
<th>Gender prime</th>
</tr>
</thead>
<tbody>
<tr>
<td>feminine</td>
<td>masculine</td>
</tr>
<tr>
<td>Essay read</td>
<td></td>
</tr>
<tr>
<td>conflict</td>
<td>75.1</td>
</tr>
<tr>
<td>no-conflict</td>
<td>52.7</td>
</tr>
<tr>
<td>Low Self-esteem</td>
<td></td>
</tr>
<tr>
<td>Essay read</td>
<td></td>
</tr>
<tr>
<td>conflict</td>
<td>56.7</td>
</tr>
<tr>
<td>no-conflict</td>
<td>73.4</td>
</tr>
</tbody>
</table>

Finally, for the item which asked subjects to estimate the likelihood that most men are willing to share child-care and home-making duties equally with their spouses, there was a significant main-effect of the self-esteem median-split, $F(1, 77) = 7.80, p < .01$; a significant three-way interaction of the gender prime, the type of essay read and the median-split, $F(1, 77) = 11.29, p = .001$; and a significant four-way interaction, $F(1, 77) = 5.48, p < .05$. The means for the cells created by the four-way interaction are shown in
Table 5.

Mean ratings of probability that most males are willing to share homemaking and child-care equally with spouses by self-esteem, type of essay written, gender prime type, and type of essay read.

<table>
<thead>
<tr>
<th>High Self-esteem</th>
<th>Essay written</th>
<th>relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>career</td>
<td>fem mas</td>
</tr>
<tr>
<td>Prime</td>
<td>fem mas</td>
<td>fem mas</td>
</tr>
<tr>
<td>Essay read</td>
<td></td>
<td></td>
</tr>
<tr>
<td>con</td>
<td>66 53</td>
<td>83 35</td>
</tr>
<tr>
<td>no-con</td>
<td>52 60</td>
<td>55 80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low Self-esteem</th>
<th>Essay written</th>
<th>relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>career</td>
<td>fem mas</td>
</tr>
<tr>
<td>Prime</td>
<td>fem mas</td>
<td>fem mas</td>
</tr>
<tr>
<td>Essay read</td>
<td></td>
<td></td>
</tr>
<tr>
<td>con</td>
<td>48 51</td>
<td>31 36</td>
</tr>
<tr>
<td>no-con</td>
<td>47 48</td>
<td>60 35</td>
</tr>
</tbody>
</table>
CHAPTER 5

DISCUSSION AND CONCLUSIONS

Three measured factors showed no effects in any of the analyses. The subjects' subjective reports of importance of career and family to self were not significant covariates for any dependent measure. There were no effects of any of the manipulations on performance on the digit symbol test.

The results of the analyses of the Uses-for-Things test provides evidence that conflict situations can, under some circumstances, enhance creativity. However, conflict alone is not enough to do this, since there was no main effect of the type of essay read. The presence of two significant three-way interactions which do include this factor indicates that the impact of conflict on creativity differs depending upon an individual's chronic and situationally-induced tendencies and what set of goals attention is focused on. The focus-of-attention manipulation, the social norm information and the women's pre-existing levels of self-esteem interacted to influence performance on the
test of creativity such that the career/conflict/high condition yielded the best performance and the career/conflict/low condition produced the worst. For women of high self-esteem, normative information indicating that having both a career and a family would be difficult seemed to lead to heightened creativity when their attention was focused on their hopes and ideas about career; but to lowered creativity when their attention was focused on their ideas and hopes about family. For women of low self-esteem, creativity seemed to increase when a perception of family/career conflict was combined with focus of attention on desires relative to a relationship; but seemed to decrease when the conflict norm was combined with focus of attention on career ideals.

This outcome lends some support to the idea that self-esteem levels are at least partially reflections of the general way in which an individual gains satisfaction in the world. Individuals of high self-esteem, according to this interpretation, gain satisfaction mainly through personal achievement. Individuals low in self-esteem, on the other hand, gain satisfaction mainly via social interactions.

Focus of attention and the social-norm
information also interacted significantly with the gender prime manipulation to affect performance on this task such that the relationship/feminine/no-conflict condition lead to the best performance and the relationship/masculine/no-conflict condition, the worst. The hypothesis of highest performance with the career/masculine/conflict combination was not found. However, the results do support the argument that femininity and relationship-orientation fit. Situational factors which promote these tendencies and which indicate cultural support of combining career and family aspirations facilitate creative performance in women.

As indicated earlier, Whitley (1983), in his review of the research on gender roles, reports that higher levels of masculinity are strongly associated with higher self-esteem in both males and females. Given this and the fact that both masculinity and high-SE are associated with achievement orientation, while femininity and low-SE are not, masculinity and high SE were expected to have similar effects on performance, as were femininity and low-SE.

Comparison of the patterns of means of creativity scores for the cells created by the two three-way interactions seems to demonstrate, however, that
self-esteem and masculinity are not completely redundant with each other. If they were, we could expect to see the same pattern of means for the interaction which includes SE women as for that which includes the gender-prime manipulation. This isomorphism does seem to hold, weakly, for those conditions which include the ideal-career essay. When we turn to the ideal-relationship essay conditions, though, we note a reversal of the patterning of high and low creativity scores between the three-way cells which include self-esteem level, and those which include the gender prime.

There are at least three points to consider relative to this. First, the effect is weaker for the interaction which includes the gender prime, such that there is only one (marginal) significant difference between the means in pairwise comparisons. Secondly, given Whitley's conclusion that masculinity and high-SE and femininity and low-SE tend to go together, and that all of the cells for the three-way interaction with gender include both high- and low-SE individuals, we would expect some cancellation effects. Finally, it is significant that the major differences between the two sets of cells from the two three-way interactions occur
in those conditions which include the writing of the relationship essay.

The gender prime, when paired with the relationship focus-of-attention manipulation is likely to have peculiar effects simply because gender roles carry very specific prescriptions relative to relationships: the masculine role stereotype seems to include being the protector of the family and the main mediator with the world, while the feminine role stereotype seems to include being protected and insulated from the world (c.f., Darley, 1976). Moreover, it is reasonable to presume that women receive self-esteem enhancement from their partners in relationships for "feminine" behavior while the masculine pattern may lead to higher SE in the majority of other situations. Thus, when attention is focused on relationship ideals, even high-SE women may tend to react to conflict passively, especially when other situational cues also tend to elicit feminine tendencies.

Overall, the results for the creativity measure seem to indicate that when a strong possibility of conflict exists between two desired social goals, focus of attention, especially when it is congruent with active tendencies and interests, is what determines whether or
not the conflict will enhance flexibility of thinking and, so, creativity. Thus, Freud's (c.f., Getzel & Jackson, 1969) notion of creativity being an outcome of conflict and John-Steiner's (1985) notion of creative generation as the product of "dialogues in the mind" seem to both be correct, but not always so. (But, with regard to Freud's notion, see also the discussion of the outcome on the measure of emotion, below.) The outcome of the "dialogue" or conflict may be enhanced creativity or it may be reduced creativity, depending on the interplay of internalized social/cultural role prescriptions and values, acute social-situational factors which trigger or suppress the activation of these, and on relatively stable individual characteristics such as self-esteem.

In general, it seems that high self-esteem individuals are more likely to show increased creativity in conflict situations than are those of low self-esteem. Activation of masculine tendencies also seems to make it more likely that conflict will lead to creative responses. Moreover, enhanced creativity as a response to conflict is more likely when attention is focused on goals and aspirations (agentic for high-SE and masculinity, communal for low-SE and femininity) central to chronic or situationally-induced tendencies.
For the test of recall of information from the essay read, there was a four-way interaction of the three manipulations and existing levels of self-esteem. The effects on memory were the same for information from the essay specific to family and for that specific to career. The best recall was in the relationship/feminine/conflict/high-SE and the career/masculine/no-conflict/low-SE conditions, while the poorest occurred in the career/feminine/conflict/high and the relationship/masculine/no-conflict/low conditions.

Pair-wise comparisons indicated that only subjects in those four cells show evidence of changed memory. For high-SE women, the career/feminine/conflict condition seems to have lead to a diminution of retention, while the relationship/feminine/conflict condition seems to have produced enhanced recall. For low-SE women, the career/masculine/no-conflict condition seems to have enhanced recall, while the relationship/masculine/no-conflict condition seems to have reduced it. High-SE women are career oriented. When their attention was focused on career goals, the combination of the feminine prime and the conflict essay seemed to lead them to repress the threatening information in the essay. That
the feminine prime should be part of this effect is sensible because femininity is associated with a lack of confidence in ability to achieve (Crandall, 1974; Nash, 1978), and with a stronger tendency toward repression (Freud, 1914). The conflict essay was necessary to the creation of a sense of threat to self. However, the fact that memory was very good in the relationship/feminine/conflict/high condition indicates that repression took place only when attention was focused on career goals. Since low-SE women in the same condition did not show the same effect, this is another indication that high-SE is related to career orientation.

On the other hand, the feminine prime, relationship focus-of-attention and the conflict-essay may have provoked an interest in the issue of coordinating career and family. The feminine prime and the relationship focus of attention should have increased interest in issues relating to relationships, but, since these are not central to these women's self conceptions, the conflict essay would not be highly threatening. Why, then, did this effect not occur in the career/masculine condition? Hastie (1981) discusses studies which have shown that incongruous perspectives sometimes lead to better recall. If high-SE, masculine tendencies and
career orientation actually go together, then focus on relationship goals and feminine orientation would be unusual for women with high-SE and this incongruous perspective may have been behind the high recall observed in this condition.

I would apply the same argument to the outcome of the career/masculine/no-conflict condition for low-SE women: the career/masculine combination lead to an incongruous perspective, heightened interest, and better recall. For the low recall scores in relationship/masculine/no-conflict condition, I would postulate that the essay simply held little interest for them. The masculine prime would run counter to the relationship focus of attention. They would not tend to normally be very career oriented, and nothing about the situation would have changed that. Thus, in keeping with the line of argument begun above in the section on the analyses of the creativity scores, the discussion in the essay read would be unlikely to provoke any great interest on their part, and effort at comprehension and retention would be minimal.

Only the type of essay written significantly affected the measure of emotion. Women in the ideal-relationship condition evinced much more emotional
arousal than did women in the ideal-career condition. This is an intuitively reasonable outcome, since one would expect emotions of all types to be more strongly associated with concentration on relationships since intimate relationships are, by definition, emotional. The lack of any other effects of the manipulations argues against several concepts which appear in the literature. First of all, there is no evidence from this study that femininity is associated with a tendency toward more emotionality than is masculinity, as Bem (1974), for example, indicates that it is. Secondly, there is no evidence that particular emotional states are tied to specific group or role orientations, as Jung (c.f. Progoff, 1962) and Bartlett (1932), in particular, claim that they are. Thirdly, there is no evidence that the types of changes in cognitive activity observed in this study are tied to changes in emotional state, as theorists such as Lazurus (e.g., 1984) imply that they should be. Finally, the results of this study contradict the specific suggestion by Freud (c.f., Deutsch, 1960) that creativity is largely a function of emotional energy generated by psychological conflict, despite the fact that there is indication in the data that psychological conflicts enhance creativity.
For the item which asked for an evaluation of how well-written the article was, the data give no indication that the two versions of the article differed in style or flow; or that women who received the conflict version disparaged it because of an unwillingness to accept the validity of its content.

For the item which asked for a rating of the likelihood that the article's author was male, again there was no indication that subjects reacted to the two versions of the article differently. However, the results provided some support for differential effects of the gender-prime conditions, since women with the masculine prime rated the likelihood of the author being male higher than did women in the feminine prime condition, with this difference reaching a marginal level of significance. Moreover, high-SE women gave significantly higher ratings on this item than did low-SE women, supporting Whitley's conclusion that masculinity and high levels of self-esteem are associated for women as well as for men.

For the rating of whether or not the subject thought that most women would agree with the woman quoted in the essay (with the quotes indicating, in the conflict essay, that having a career and a family at the same time
is difficult for most women; and, in the no-conflict essay, that it is not), both high- and low- SE individuals who had the feminine prime differed significantly in their ratings depending on whether they were in the conflict or the no-conflict condition. High- and low- SE individuals also differed significantly from each other in both the conflict and the no-conflict conditions. The highest ratings of agreement occurred in the feminine/conflict/high and the feminine/no-conflict/low conditions. The feminine/no-conflict/high and masculine/conflict/high conditions produced virtually the same low rating. The ratings of subjects in the feminine/conflict/high-SE condition differed significantly from those of subjects in the masculine/conflict/high-SE condition. None of the other comparisons was significant.

Part of this pattern of results seems intuitively sensible. For low-SE women given the feminine prime and high-SE women given the masculine prime, the conflict essay seemed to produce a tendency to discount the content of the essay. This makes sense, as the evidence of likely conflict between career and family should be anxiety provoking and since one way to reduce anxiety would be to discount the evidence. But, if this is so,
why should the feminine/no-conflict/high condition result in equally low ratings, and why would the feminine/conflict/high condition have yielded such a high mean rating, given that the likelihood of conflict was also indicated for this latter group?

With the feminine prime and the conflict essay, high-SE women seem to have been more prone to see consensus among women than when given the feminine prime and the no-conflict essay. Now, Sherman, Presson & Chassin (1984) and Turner (1985) report that threats to self increase the likelihood of the false consensus effect (F.C.E.--Ross, Greene & House, 1977), which is the tendency to see others as likely to agree with one's own opinions or one's own actions. The explanation offered for why this occurs is that the F.C.E. is partially an effort to protect self-esteem by perceiving high social support via reference group cohesion. The consensus, in this case, is a positive thing from the point of view of the subject.

In the study at hand, the false "consensus" in the feminine/conflict/high-SE condition represents an "agreement" by a group of individuals with an opinion by a third party which the subjects, themselves, presumably do not share (I hark back once again to the "high-SE
equals achievement orientation and self-confidence" argument). Thus, the "consensus" should be a negative thing from the point of view of the subjects, and we can speculate that it represents an effort to distance self from the group. High-SE women may be using the defense of assuming that most women would agree with the essay because most women, like the woman quoted, but unlike themselves, lack the ability to manage both a career and a family.

For the ratings of probability that most males are willing to share child-care and home-making duties, there was a four-way interaction of the three manipulations and the self-esteem grouping factor. The highest ratings here occurred in the relationship/feminine/conflict/high and the relationship/masculine/no-conflict/high conditions. The lowest ratings occurred in the relationship/feminine/conflict/low, the relationship/masculine/conflict/high, and the relationship/masculine/no-conflict/high conditions.

All specific comparisons of conditions containing the career focus-of-attention versus those containing the relationship focus-of-attention were significant for both high- and low-SE individuals except those of career/feminine/no-conflict/high with relationship/
feminine/no-conflict/high and that of career/masculine/conflict/low with relationship/masculine/conflict/low. All comparisons of conditions containing the conflict reading with those containing the no-conflict reading were significant except that of career/feminine/conflict/low with career/feminine/no-conflict/low and that between career/masculine/conflict/low with career/masculine/no-conflict/low. All comparisons of conditions including the feminine prime with those including the masculine prime were significant except the one for career/feminine/conflict/low and career/masculine/conflict/low and that of career/feminine/no-conflict/low with career/masculine/no-conflict/low. All comparisons between high- and low-SE subjects in the same experimental condition were also significant except those between career/masculine/conflict/low and career/masculine/conflict/high and that between relationship/feminine/no-conflict/low and relationship/feminine/no-conflict/high.

One finding which seems to emerge from this welter of outcomes is a clear indication that the ratings of low-SE women were stable, when their attention was focused on career, regardless of condition on the gender prime and reading manipulations. By contrast, high-SE
women's ratings showed some shifts regardless of whether they received the career or the relationship version of the focus-of-attention manipulation. This is similar to the outcome for the creativity test and the combination of these with findings from previous research seems to indicate that only high-SE women are invested enough in careers for there to be effects from changes in situational factors relative to a career orientation; while both high and low self esteem women tend to be fairly strongly invested in establishing a relationship.

Although there was no significant difference in this study between high- and low- SE women on self-reports (item j of the Autobiographical Data sheet which subjects completed before any of the manipulations were accomplished) of intention to establish a career after graduation, the trend was there (the mean for high self-esteem women was 7.90, while that of low self-esteem women was 7.54). Moreover, this lack of effect might be partially due to self-presentational concerns. It seems unlikely that many students would be willing to admit, at least to other than their friends, that progressing toward a career was not a major reason for attending the university.

In the career/feminine/conflict condition,
high-SE women gave higher ratings than low-SE women in the same condition and ratings higher than those for either low- and high-SE women in the career/family/no-conflict condition. The career/feminine/high condition also yielded higher ratings on this item than did the career/masculine/conflict condition. This indicates to me that women in the career/feminine/conflict condition tended to shift their belief about male behavior in order to help themselves believe that they can accomplish what they want to—have both a career and a family.

The fact that this did not occur in the same condition with the masculine prime substituted for the feminine suggests two possible explanations. One is that only with the presence of the feminine prime were these women concerned enough about family to be significantly affected by the conflict essay. The other is that perhaps only with the feminine prime are they inclined to use cognitive defense mechanisms. The first explanation fits with the notion, previously discussed, of high self-esteem, masculinity, and career orientation being closely interconnected, and low self-esteem, femininity, and social group (with the group, in this case and probably most often, in general, being the family).
orientation being closely interconnected. Also recall that the outcome of the creativity test seemed to support this explanation, as did the outcome of the masculine/no-conflict/low conditions on the recall test.

The second explanation seems to fit well with the outcome of the recall test where, it will be remembered, there was indication that high-SE women might be repressing awareness of information from the essay in the career/feminine/conflict condition; and with the discussion of the ratings of probability that most women would agree with the content of the essay, where it was also argued that the outcome of the feminine/conflict/high condition indicated the use of cognitive defense mechanisms. Thus, there is evidence for both explanations, leading to the conclusion that it is possible that both processes might be involved at one and the same time.

The feminine/conflict/high combination yields significantly higher probability ratings than when matched with the ideal-career essay; but the relationship/masculine/conflict/high condition yields probability ratings which are even lower than those observed in the career/masculine/conflict/high condition. I would interpret this to mean that the combination of the
relationship essay and feminine prime increased both concern about relationship issues and tendency to use defense mechanisms, while the relationship/masculine-prime combination reduced both. This same interpretation seems to provide the best explanation of the outcome of the relationship/masculine/no-conflict/low condition.

For the relationship/feminine/conflict/low, the relationship/feminine/no-conflict/low and the relationship/masculine/no-conflict/high conditions, the best explanation seems to be simply that the essay was effective in convincing the women, in line with either what their pre-existing levels of confidence would lead them to expect (the r./f./c./l. condition) or with what their desires would lead them to hope for (the r./f./n./l. condition), or both (the r./m./n./h condition).

One outcome of this particular set of results, which also seems to come through from the study, in general, is an indication that high self-esteem women show more evidence of the use of psychological defense mechanisms than do low self-esteem women. This finding was not hypothesized directly but was implicit in the argument that SE is a measure of the ability of the self-schema to mediate conflicting internal and/or
external forces. Becker's (1974) antropological version of psychoanalytic theory certainly supports this idea. His notion is that self-esteem is a socially derived mechanism through which the individual handles social psychological fears and conflicts. To the extent that the individual has self-esteem, to that extent has he or she been successful at using this particular technique to manage anxiety (Solomon, Greenberg & Pyszczynski, 1985). Thus, there is no surprise in the finding that the high-SE women in this study evinced more of a tendency to alter perceptions, interpretations and evaluations when the situation was threatening to valued goals and beliefs. This outcome supports an important aspect of the theoretical framework of the study.

The overall pattern of results, then, indicates that there is a tendency for clustering of particular cognitive tendencies in a way which can reasonably be described as schematic. Some schemata as, for example, masculinity and femininity, seem to be fairly broad, including information about a variety of types of behaviors, and how these relate to a variety of situations. These can reasonable be characterized as sub-systems, and the more situation- and behavior-specific information which they contain is likely to be
organized into more or less unitized packets within them. Gender schemata and, one would assume some others, also seem to be yoked into bi-polar pairs such that the activity of one is antagonistic to the activity of the other. In each individual, one of this pair of schemata is likely to be chronically more active than the other. However, the effectiveness of the gender-prime manipulation supports the notion that each individual has the potential to exhibit either pattern of behavior.

It also seems clear that gender schemata correspond to a strong social-structural distinction and are largely adopted from social stereotypes. This supports the idea that social-structural features are important in the organization of the mind. The results here show that these socially derived cognitive structures can be triggered into greater activity by environmental cues. Once triggered, the information which they contain about values and behavioral prescriptions seems to interact with information from the environment to channel individual cognitive activity.

Though the evidence from this study is less direct with regard to the postulated role of the self-schemata, the outcomes are congruent with the idea that they are largely an epiphenomenon of the chronic
activity by subsystems, and that they may serve as a master control structure over these. Self-esteem seems, at least in women, to be a good measure of strength of orientation toward career and family. In addition, it was shown to be at least a partial mediator of the interplay of cognitive sub-systems and environmental forces, helping to determine how this interplay will be manifested cognitively and behaviorally.

There may be important practical implications to the results of this study (though, of course, more research is needed to help establish the internal and external validity of the results). For instance, casual personal observations and media reports have convinced me that many male managers are aware that women are more likely to experience conflicts between career and family. This may sometimes lead some male executives to be reluctant to hire women. However, the results of this study indicate that, for some women under some circumstances, such conflicts can produce effects (heightened creativity and, perhaps, increased motivation for other types of cognitive performance) which might actually be of benefit to organizations. Knowledge of this might help to counteract bias. Awareness of these findings might also help with the management and
self-management of women (and others, to the extent that the results can be generalized to other groups) under conflict. Knowing that certain characteristics and internal states tend to lead to undesirable reactions to conflict and that certain others tend to lead to desirable reactions might allow for interventions designed to reduce the likelihood of the one, and increase the likelihood of the other.

In the theory and design of this research, I have tried to merge concepts from various traditions within psychology and the other social sciences. In this regard, I have consciously paralleled the process of convergence of social influences which I believe structures individual thinking. Just as this project is the manifestation of the ripples and backwash produced by the meeting of multiple and diverse ideas, trends and values, so too are less formal cognitive products. If the data are complex and their meaning somewhat elusive, this is to some extent because the transactions of the social and the individual are also multitudinous and fluid. If this research does not provide final answers, it is hoped that it will at least provoke further questions. There will never be a panacea of cognition, for each bit of understanding which we add carries the
potential to reshape the whole.
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