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A FUNCTIONAL UTILITY MODEL OF COGNITIVE COMPLEXITY

By

Barbara Ann Woike

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ABSTRACT

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This study investigated the impact of affective experiences linked to implicit motives on the complexity with which individuals process social information. It was predicted that two dimensions of cognitive complexity serve different functions that allow perceivers to attain motivational satisfaction. Two general hypotheses were tested. The type hypothesis predicted that the arousal of the power motive would be linked to more differentiated processing, whereas the arousal of the intimacy motive would lead to more integrated processing. The level hypothesis predicted that subjects would use more simple complexity when there was no incentive to understand the information thoroughly and use more elaborated complexity when there were a reason for careful processing.

Power- and intimacy-motivated women and men were asked to recall vividly either an event that led them to feel very

happy (i.e., one that led to motive satisfaction) or a common, everyday experience (as a control). Subjects were told that they were selected for the experiment because they were in the process of developing skills related to either power or intimacy that would lead them to be successful later in life. Subjects then viewed a videotape of two students conducting a peer interview and were asked to think about the targets in terms of either power- or intimacy-related abilities. After subjects viewed the tape, they were asked their impression. These impressions were analyzed for the simple and elaborated forms of differentiation and integration.

Results showed that power- and intimacy-motivated subjects in the Positive Arousal/ Congruent Information condition used more differentiation and integration respectively and more simple complexity than elaborated complexity, generally. These findings are discussed in terms of the functional utility of the four kinds of cognitive complexity.

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INTRODUCTION

Theory and research in personality suggest that motivation is at the root of many complex patterns of affect, thought, and behavior (e.g., Aronoff & Wilson, 1985; McClelland, 1985). According to McClelland (1985), motivational states involve an affective readiness to engage in intrinsically rewarding behavior. By considering these affective states as mediators of cognitive processes, it is possible to understand how specific motivational states influence the cognitive processing of social events. In this dissertation, I suggest that affective experiences related to different social motives affect the kinds of cognitive complexity people use to process social information. In particular, I predict that different kinds of complexity serve specific functions that allow individuals to achieve motivational satisfaction.

For decades, psychologists have attempted to identify the bases for variations in the complexity with which individuals construe people, objects, and topics (e.g., Harvey, Hunt, & Schroder, 1961; Schroder, Driver, & Streufert, 1967; Streufert & Streufert, 1978). An event

that one person views in a relatively simple fashion may be viewed with a good deal of complexity by someone else, just as the same individual may form a simple construal of a person on one occasion and a complex one on another.

Theorists of many perspectives (e.g., Kelly, 1955; Paulhus, 1991; Pratt, 1991; Schroder, Driver, & Streufert, 1967; Woike & Aronoff, 1992a) have suggested that cognitive complexity is an important aspect of social cognition which may serve many purposes that are integral to psychological functioning. Cognitive complexity may provide a deeper, more thorough understanding of the social environment (e.g., Woike & Aronoff, 1992a). Complex thinking may also allow perceivers to have more prediction and control through a richer understanding of both the nature of a given situation and their possible courses of action in it (cf., Kelly, 1955). And, perceivers also may become more involved in situations and events through complex thinking; and, this greater involvement can serve a variety of functions depending on the nature of the situation (cf., Csikszentmihalyi, 1990). Hence, functional utility may be a basis for explaining the variability in the complexity of cognitive processing that a person engages in across situations and the complexity level of different observers in the same situation.

Psychologists have been studying cognitive complexity for decades and have developed a variety of measurement

techniques. Woike (1989a, 1989b) reviewed these scoring systems and found that two kinds of distinctions could be made within the complexity construct, one of type and the other of level. Both are based on qualitative differences in how information is structured.

The type distinction is based on a common contrast within the concept of complexity (e.g., Goldstein & Blackman, 1978). Two types of complexity are typically identified: differentiation, which refers to the number of pieces used to form an impression; and integration, which refers to the number of connection between those pieces. The levels distinction is based on the degree of complexity that is reflected in an impression of a person, topic, object (Woike, 1989a, 1989b). Two levels of complexity can be identified. Simple complexity refers to perceiving different attributes and forming simple links between them, but not perceiving more complicated and intricate relationships among and between the attributes of a given person, topic, or object. By contrast, elaborated complexity refers to making contrasts and comparisons among attributes and perceiving dynamic relationships and complex connections between attributes. That is, elaborated complexity involves moving beyond the perception of simple characteristics to the perception of more complex patterns and relationships within a given stimulus set.

When these two kinds of distinctions are considered

together, a typology with four components (called four qualities here to avoid confusion with the type distinction) of complexity is created. First, simple differentiation refers to perceiving attributes and characteristics of stimulus set. Second, simple integration involves perceiving simple connections and exemplars related to stimulus attributes and characteristics. Third, elaborated differentiation refers to perceiving contrasts and comparisons among the stimulus attributes. Fourth, elaborated integration involves perceiving dynamic relationships among the stimulus attributes.

I expected the complexity of cognitive processing to be linked to motivation in two ways. First, the type of complexity (i.e., differentiation versus integration) should be linked to motives that may be met by perceiving things as separate and conflicting, or as connected and similar. I suggest that through the perception of separate, different, and contrasting attributes, differentiation may provide a means for perceivers to meet needs related to competing against, having power over, and achieving separation from other people, objects, and topics. Integration, on the other hand, may provide a means for perceivers to met needs related to resolving differences, being connected to and making contact with other people, objects and ideas through the perception of connections, similarities, and interrelationships. Second, the level of cognitive

complexity (i.e., simple versus elaborated) should be influenced by the perceiver's degree of motivation to understand the information. If the perceiver has no motivation to understand the situation and there are no situational demands for careful processing of the social information, then perceivers should use simple complexity to meet the minimal requirement of forming a social impression. If, on the other hand, the situation is motive-relevant to the perceiver and/or the situational demands careful processing, then perceivers should use elaborated complexity to gain a more thorough understanding of the situation.

In considering these two hypotheses and the four qualities of complexity, each quality can be seen as having its own specific function. First, because simple differentiation involves perceiving the simple, separate attributes and characteristics of the stimulus set, it should generally be used more by perceivers who have no motivation to gain a deeper understanding of the information and who do not find it useful to see the connections among the attributes. Second, simple integration involves perceiving simple connections and exemplars related to the stimulus attributes and characteristics; therefore, it should generally be used more by perceivers who have no motivation to gain a deeper understanding of the information and who find it useful to perceive exemplars linked to these attributes. Third, because elaborated differentiation

involves perceiving contrasts and comparisons among the stimulus attributes, it should generally be used more by perceivers who have motivation to gain a deeper understanding of the stimuli and who find it useful to see contrasting or distinct characteristics among the stimuli. And fourth, elaborated integration involves perceiving dynamic relationships among the stimulus attributes; therefore, elaborated integration should generally be used more by perceivers who have motivation to gain a deeper understanding of the stimuli and who find to useful to see connections or similarities among the stimuli.

Thus, Woike (1989a) and Woike & Aronoff (1992a, 1992b, 1992c) have suggested that these are different qualities of complexity serve different functions. The purpose of this study is to investigate if these four kinds of complexity are linked to those specific functions. A clear definition of implicit motives is key to understanding how these affective states can mediate these four qualities of cognitive complexity. In the McClelland (1985) model, affective states are described as facilitating motive-related behavior in the sense that they provide a kind of "readiness" to engage in motive-satisfying activities. In this dissertation, I suggest that these affective states also facilitate motive-related cognitive processing (i.e., motive-related cognitive complexity).

What are Implicit Social Motives?

In research on personality motivation, McClelland (1980, 1981, 1985) and colleagues (McClelland, Koestner, & Weinberger, 1989) have made a distinction between operant (or implicit) and respondent (or explicit) motives. According to McClelland, motives reflect dispositions defined as recurrent preferences for particular qualities of affective experience (such as "feeling strong" for the need for power or "feeling close" for the need for intimacy). Motives tapped through operant measures are "implicit" in the sense that individuals are usually not aware of them. For instance, a person may experience recurrent desire to have impact on others (i.e., the need for Power; Winter, 1973), but typically will not be able to articulate the desire as such. For instance, the person may explain his or her behavior of repeatedly interrupting the proceedings of a meeting as an effort to make important points, not to evoke a strong affective response (i.e., have impact) on others. Implicit motives appear to be more closely linked to particular qualities of affective experience rather than explicit scripts or schemas related to the self-concept (see McClelland, et al. , 1989, for a review).

According to the McClelland (1985) model of implicit motivation (also see Weinberger & McClelland, 1990), a sequence of responses is first triggered by a learned cue

that represents an opportunity to engage in a motivationally-arousing experience. This gives rise to an emotionally charged anticipatory goal state in which the motive is activated by the situation which, in turn, brings about an impulse to act, followed by learned behaviors that lead to a motivational "kick." This "kick" is brought about by a specific hormone pattern (norepinephrine for n Power and dopamine for n Intimacy) which corresponds to specific affective experiences. The role of affect is introduced at two points in the model: the anticipatory goal state and the specific affect that follows the sequence of responses. The anticipatory affect helps the individual stay on track so that he or she can eventually experience the specific or goal-related affect (i.e., motivational satisfaction). In short, the model proposes that people engage in learned behaviors to bring about a "kick" or affective experience that is the specific outcome to satisfying a particular motive.

Individuals engage in specific kinds of behaviors to bring about these affective outcomes. Through repeated experience, patterns of behavior develop that allow the individuals to regularly experience this affect (Weinberger & McClelland, 1990). However, an alternative to engaging in specific behaviors that are linked to motivational satisfaction, individuals may also have developed specific cognitive strategies to bring about motivational

satisfaction. Although the link between implicit motives and cognitive processes has not been studied extensively, McClelland et al. (1989) suggest that implicit motives are in fact related to specific cognitive processes; and, there is some research to support this claim. For instance, McAdams and McClelland (1983) found that individuals remembered words related to their particular implicit motives more than words that were not motive-related. Woike (1991) found that the content of individuals' reported most memorable experiences was related to their specific implicit motives (e.g., achievement, intimacy).

Moreover, Aronoff and colleagues (e.g., Aronoff & Wilson, 1985; Battistich, Assor, Messé, & Aronoff, 1985) have argued that the variability in cognitive processes can be explained by identifying the relevant personal and situational factors. According to this line of reasoning, when the situation engages the motives of the perceiver, cognitive processing will be used for goal-directed thoughts and actions. Woike and Aronoff (1992a) used this theoretical framework to explain the variability in the complexity with which perceivers processed social information. In this study, the use of complexity varied with the congruency (or match) between the perceivers' implicit motives and the situation. (This study will be discussed in greater detail later.)

Other research suggests that the interaction of personality motives (although not necessarily implicit motives) and situations can lead to a variety of differences in the cognitive processing of social events. For instance, Assor, Aronoff, and Messé (1981) demonstrated that the personality variables of dominance and dependency interact with situational factors (in this case, the attributes of a stimulus person) to affect the person perception process. They found that dominance-motivated perceivers evaluated low status targets more favorably than high status targets, while dependency-motivated perceivers evaluated high status targets more favorably than low status targets. Another experiment by Battistich and Aronoff (1985) demonstrated that dominance-motivated people seek information that deals with the assertive properties of the target, whereas dependency-motivated people seek information that deals with the affiliative properties of the target.

This research suggests that individuals do in fact develop cognitive strategies to select information from the social environment that may allow them to satisfy their implicit (as well as explicit) motives. And most central to the present investigation, complexity may be important in helping individuals experience motivational satisfaction (Woike & Aronoff, 1992a). To expand this idea, I suggest that the specific qualities of complexity may be employed to satisfy particular implicit motives (Woike & Aronoff, 1992a,

1992b, 1992c). Individuals may use certain types of cognitive complexity to bring about or maintain motivational satisfaction. That is, specific types of cognitive complexity are linked to affective states that correspond to particular implicit motives and that individuals may engage in specific kinds of thinking to bring about these affective outcomes.

Selecting Implicit Social Motives: Power vs. Intimacy

In considering the implicit social motives that would affect the complexity of cognitive processing, it appeared that two very different implicit motives reflect a contrast that is central to many perspectives on personality (e.g., Angyal, 1951; Bakan, 1966; Chodorow, 1974; Gilligan, 1982; Leary 1957). This distinction is characterized well in Bakan's (1966) concepts of agency and communion, which refer to the need for independence and control and the need for connectedness and belonging, respectively. Important aspects of these personal orientations have been studied extensively in research programs examining the need for power and the need for intimacy. In this work, the need for power (n Power) is described as a recurrent preference to have impact, control, and influence over another person, group, or the world at large (Winter, 1973), whereas the need for intimacy (n Intimacy) refers to a recurrent

readiness to experience warm, close, and communicative exchanges with others (McAdams, 1980).

Research on the power motive has shown that power-motivated individuals tend to experience power arousal as a feeling of strength, vigor, and energy (McClelland, 1985). Physiological changes that correspond to the arousal of n Power include increases in epinephrine and norepinephrine which seem to be the source of this "energized" subjective state (McClelland, 1989).

When McAdams (1982, 1985) asked power-motivated people to describe a "peak" life experience, they told personal and emotionally-involving stories with themes centered on (a) enhanced perception of their own physical or psychological strength, (b) exertion of influence or control over others, (c) vigorous activity, and (d) an increase in fame or prestige. Power-motivated individuals engage in behavior that involves doing things to create and maintain this positive affective experience of having impact on others. For instance, they seek out positions of influence such as holding elected offices, and careers in which they can direct the behavior of others in accordance with preconceived plans and with the use of positive and negative sanctions, such as executive, teacher, or psychologist, (McAdams, 1990). They are also more forceful, active and influential in small groups, accumulate more prestigious possessions, write more letters to newspapers and get into

more arguments than those not high in n Power (McAdams, 1990). These behaviors may maintain a state of excitement, which is the affective "kick" that is pleasurable and rewarding for the power-motivated individual (Weinberger & McClelland, 1990).

In contrast, the need for intimacy (n Intimacy) refers to a recurrent readiness to experience warm, close, and communicative exchanges with others (McAdams, 1980). Intimacy-motivated people in states of arousal seem to experience positive affect close to that of happiness. There is no research to date on the physiological changes that correspond to the arousal of n Intimacy, but research on the need for affiliation (n Aff), which is akin to n Intimacy, suggests that arousal involves physiological changes such as increases in dopamine which may contribute to a "happy/loving" subjective state (McClelland, 1989). In addition, mutual eye gaze behavior associated with intimacy may also produce neurohormones that lead to increased immune functioning and physical well-being (Argyle & Cook, 1976; McAdams, 1985; McClelland, 1985, 1989).

When McAdams (1982, 1985) asked intimacy-motivated people to describe a "peak" life experience, they described personal and emotionally-involving experiences centered on (a) interpersonal interaction, (b) increases in loving/liking or emotional bonds between people, (c) communication and sharing with others, (d) sympathy and

showing concern for others, and (e) touching and physical closeness. Intimacy-motivated individuals engage in behavior that involves being in a state of happiness and togetherness or oneness with others rather than doing things to force intimacy with others (McAdams, 1985). For instance, they tend to use the word "we" more, engage in more eye contact, and make fewer demands on others in group discussions (McAdams, 1990). They are described by their friends as being more "natural," and "loving" and less "dominant." Hence, these behaviors may maintain states of positive affect that are pleasurable and rewarding to intimacy-motivated people.

To affectively arouse the power and intimacy motive in the laboratory, researchers (e.g., McClelland, 1985; Woike & Aronoff, 1992a, 1992c) have constructed experimental situations that provide an opportunity to engage in experiences that bring about the affective states that are linked to specific kinds of motivational satisfaction. For instance, Woike and Aronoff (1992a) created experimental situations in which power- and intimacy-motivated subjects anticipated interacting with others in ways that were arousing to their motives. Subjects in the motivationally-congruent condition were more involved in the experience than other subjects. In addition, this experimental manipulation affected the complexity with which they processed the information in order to understand the

situation.

In another experiment, Woike and Aronoff (1992c) found that when power- and intimacy-motivated individuals were asked to recall vividly an experience that made them feel very happy, they wrote stories with power and intimacy themes, respectively. In other words, happiness was defined differently for each person. This experimental technique allows subjects to recall personal and emotionally involving experiences that led to a sense of happiness and satisfaction, regardless of what the content of those experiences might be. The technique allows people to "self-arouse" their own motive-related affective state. Thus, the technique of vivid recall of personal experiences does in fact seem to induce power- and intimacy-related affect, just as these techniques have been used to induce more general mood states (e.g., happiness, good moods) in a general population of subjects (see Forgas, 1992). But curiously, positive motive-relevant affect has been shown to be linked to a more careful processing strategy (e.g., Woike & Aronoff, 1992a), or what Forgas (1992) calls a <u>motivated</u> processing strategy, defined as one designed to achieve specific, potentially rewarding judgmental outcomes. In contrast, plain positive affect or "good mood" not necessarily related to specific implicit motives, has been shown to be linked to what Forgas (1992) calls a <u>heuristic</u>

processing strategy in which subjects simplify and short circuit more substantive processing of the information.

The Role of Cognitive Complexity

The ways in which people use the different forms of cognitive complexity to structure their impressions of others may be linked to these two very different motivational states that are related to power and intimacy (Woike & Aronoff, 1992a, 1992b, 1992c). Cognitive complexity is expected to be linked to these implicit motives in two different ways. First, different types of cognitive complexity may allow individuals to structure their social experiences in ways that bring about motivational satisfaction. Motivationally-related affective states should lead power-motivated individuals to use cognitive complexity in ways that give them the feeling of strength and individuality. Intimacy-motivated people should use cognitive complexity in a way that allows them to experience feeling close and connected to others.

Second, a higher level of cognitive complexity may provide a more thorough understanding of the situation. If such understanding can help to achieve motivational satisfaction, then it may be quite useful. By contrast, lower levels of cognitive complexity may allow individuals to obtain simplified impressions of the situation when there

is no need to understand it more thoroughly to achieve motivational satisfaction, but when there is still a requirement for some sort of cognitive response.

The Type Hypothesis: Differentiation vs. Integration

The construct of cognitive complexity consists of two broad cognitive processes: differentiation and integration (e.g., Goldstein & Blackman, 1978; Schroder, Driver, Streufert, 1967). Differentiation typically refers to the number of different aspects an individual perceives in a given stimulus group (e.g., Schroder, et al., 1967). The perception of a social object is developed and formed from its separate and distinctive qualities. The perceiver takes a whole stimulus set and separates it into different attributes, exceptions, comparisons, contrasts, and restrictions. Hence, the differentiation process involves special attention to (a) differences rather than similarities, (b) the ways in which objects and people can be perceived separately rather than collectively, (c) the features that can be used to make distinctions between and among stimulus groups, and (d) the comparisons, restrictions, and contrasts that can be made within a stimulus set.

By contrast, integration typically refers to a way of perceiving and forming impressions that involve the presence

of connections or links between differentiated stimuli (Schroder, et al., 1967; Tetlock & Hannum, 1984). The integration process involves focusing on similarities between and within a given stimulus group. The perceiver takes a stimulus set and forms similarities, extensions, and elaborations. The integration process is also marked by the ability to perceive dynamic and causal relations between objects in the stimulus group. Thus, the integration process involves special attention to (a) how differentiated stimuli are related within and between stimulus groups, (b) relationships between targets and objects, and (c) how targets and objects influence and affect one another.

Although both differentiation and integration processes are commonly understood to provide together a richer more meaningful perception of the social environment, they are conceptually and operationally very different processes. Differentiation involves perceiving social objects as different, separate, independent, and/or opposing. By contrast, integration involves perceiving social objects as similar, connected, interdependent, and/or congruous. I suggest, all things being equal, that differentiation processes may potentially be linked to a sense of agency, more so than integration processes, whereas integration processes may be more readily linked to a sense of communion than differentiation processes.

However, theory and research (e.g., Goldstein & Blackman, 1978) maintain that both differentiation and integration are necessary for complex thinking about a topic. Using only one of these components predominantly would not be an adaptive way to process social information because perceivers may find it useful to see the pieces as well as the connections between those pieces. Only seeing pieces or only connections may not be as useful. Therefore, I expect the differences in type of complexity used in the cognitive processing of power- and intimacy-motivated individuals in affective states to be relative, (i.e., the amount of differentiation compared to the amount of integration).

Many theoretical perspectives converge on distinctions similar to the differentiation-integration contrast (e.g., Bakan, 1966; Chodorow, 1978; Gilligan, 1982; Lyons, 1983; Miller, 1976; Pollak & Gilligan, 1982). For instance, Gilligan (1982) and Lyons (1983) use the terms separate and connected to describe two different experiences of the self: one as autonomous (i.e., separate from others) and the other as in relationship (i.e., connected to others). Belenky, Clinchy, Goldberger, & Tarule (1986) extended these definitions to include the perceiver's relationship to other objects and topics in addition to other people. They describe two kinds of "procedural knowing," or what they refer to as "positions in which [individuals] are invested

in learning and applying objective procedures for obtaining and communicating knowledge." (p. 15) Out of procedural knowing, two kinds of knower-object relationships can develop.

First, separate knowing is the process of separating oneself from the object through critical thinking and the application of rules of exclusion. "Presented with a proposition, separate knowers immediately look for something wrong--a loophole, a factual error, a logical contradiction, the omission of contrary evidence" (p. 104). In relation to the world, separate knowing is essentially adversarial. Separate knowers use their knowledge to defend themselves against others. Another feature of separate knowing involves applying an impersonal perspective through the perception of separation between the self and the object. "To be objective, here, means to speak dispassionately, to exclude your own concerns and to adopt a perspective that your adversaries may respect, as in their own self-interest" (p. 109).

By contrast, connected knowers develop procedures for gaining access to other people's knowledge. At the heart of this process is the capacity for empathy or the ability to see the other person's point of view as similar to one's own experience. Connected knowers begin with the facts about others and then shift the focus to other people's ways of thinking. While separate knowers seek to delimit the

"personality of the subject" because it slants the perception by adding "noise," connected knowers see the "personality of the subject" as adding to the perception. Belenky et al. (1986) describe the process of connected knowing as follows:

> "Connected knowers begin with an interest in the facts of other people's lives, but they gradually shift the focus to other people's ways of thinking. As in all procedural knowing, it is the form rather than the content of knowing that is central. Separate knowers learn through explicit formal instruction how to adopt a different lens--how, for example to think like a sociologist. Connected knowers learn through empathy. Both learn to get out from behind their own eyes and use a different lens, in one case the lens of a discipline, in the other the lens of another person." (p. 115)

> "...[connected knowers] do not always find it easy to enter perspectives very different from their own. This requires real skill and effort. It is important to distinguish between effortless intuition of subjectivism (in which one identifies with the positions that feel right) and the deliberate, imaginative extension of one's understanding into

> positions that initially feel wrong or remote. Connected knowing involves feeling, because it is rooted in relationship; but it also involves thought. (p. 121)

Connected knowers purposefully develop connections between themselves and others. They seek to understand people's ideas on the other people's terms rather than their own terms. Through this process, they develop many connections on many different levels between themselves and the outside world.

Belenky et. al. (1986) point out that although its procedures have not yet been elaborately codified, connected knowing is just as procedural as separate knowing. That is, a great deal of skill and effort are involved in the process. These authors also suggest that there is a need to study these forms of understanding from an empirical perspective. The differentiation-integration distinction may be a useful way to understand these perspectives, particularly because this contrast is based on measurement systems that have been used in a great deal empirical work.

Moreover, the separation-connection contrast is similar to the power-intimacy contrast. Separate knowers are much the same as those who have the need for power in that they perceive and understand their social environments in ways that allow them to be individualistic and have impact and

control over others. Connected knowers, on the other hand, are similar to those who have the need for intimacy because they seek to know and understand their social worlds in ways that allow them to be connected to others. Hence, these two different theoretical perspectives describe a common contrast in the social motives, concerns, orientations, and goals of individuals. This contrast should be useful in explaining how these different orientations are linked to cognitive processing of social events.

How might differentiation processes allow people to feel powerful (and separate)? Viewing social objects as separate, contrasting, and at odds has been said to be characteristic of an agentic or "separate" orientation (Belenky, et al., 1986; Gilligan, 1982; Lykes, 1985; Lyons, 1983). Differentiation processes may be more useful for an agentic orientation because making impartial judgments often involves separating one thing from the other. Critical thinking and decision making are procedures of seeing differences and relative differences between things. These procedures may also involve applications of restricted perspectives and decision rules. Thus, this way of thinking can allow people to maintain a sense of power and mastery over people, objects, and issues.

How might integration processes allow intimacy-motivated people to feel close (and connected)? Viewing social objects as interrelated and part of a whole is said

to be characteristic of an communal or "connected" orientation (Belenky, et al., 1986; Gilligan, 1982; Lykes, 1985; Lyons, 1983). Integration processes may be more useful for a communal orientation because seeing commonalities, similarities, and relationships may be a basis for creating cooperation between people. Empathy and seeing the other person's point of view involves acknowledging similarities and the potential for mutual influence. Thus, this way of thinking can allow people to maintain a sense of communion and connectedness with people, objects, and issues.

Evidence for the Type Hypothesis

The type hypothesis states that in situations involving the potential for motivational satisfaction, power- and intimacy-motivated individuals will use the type of complexity that is most likely to lead to motivational satisfaction. Specifically, in such situations, power-motivated individuals should use more differentiation (as compared to integration) and intimacy-motivated individuals should use more integration (as compared to differentiation).

There are two kinds of evidence to support the hypothesis that differentiation and integration are linked to agentic and communal orientations, respectively. First,

theory and research on gender differences (see Brody, 1985) suggests that men frequently develop an agentic orientation, whereas women tend to develop a communal orientation. These respective orientations are reflected in gender differences in the complexity of cognitive processing (Woike & Aronoff, 1992b). Secondly, a pilot study (Woike & Aronoff, 1992c) and a reanalysis of a published study (Woike & Aronoff, 1992a) provide support for the type hypothesis for women and men with different motivational orientations. Both motives (i.e., power and intimacy) and gender were found to be linked to differential use of the types of complexity.

The need for agency (power) and the need for communion (intimacy) is often applied to understanding gender differences (Bakan, 1966; Chodorow, 1978; Gilligan, 1982; Lyons, 1983). Theorists (e.g., Bakan, 1966; Chodorow, 1978; Gilligan, 1982; Lyons, 1983; Miller, 1976; Pollak & Gilligan, 1982) have suggested that men and women perceive social situations quite differently based on their underlying social concerns. For instance, Gilligan (1982) and colleagues (Pollak & Gilligan, 1982) have argued that women tend to construe self and others in terms of interdependent communities of care, whereas men tend to focus on conflicts among autonomous agents. Gilligan's (1982) work on moral development suggests that women may understand and make decisions by perceiving their specific responsibilities to others as embedded in a social network.

Men, by contrast, may conceive of issues as conflicts among abstract principles. Furthermore, Gilligan and others have maintained that women may adopt a more intimate, communal orientation to the world in general, as compared to men (Chodorow, 1978; Miller, 1976; Pollak & Gilligan, 1982). These theorists suggest that men, in contrast, may find such a communal perspective threatening and, thus, may tend to engage in activities to maintain a sense of independence and emotional distance.

Research on gender differences suggests that there are differences in the development of the expression, recognition, and experiences of emotion that correspond to these two interpersonal orientations (see Brody, 1985 for a review). Findings of gender differences in several areas of emotional functioning, including nonverbal sensitivity (e.g., Hall 1978; Rosenthal et al., 1979); expressiveness, (Buck, 1977); the quality of defenses (Brody, Rozek, & Mutin, 1986); and cognitive correlates of recognition abilities (e.g., Rosenthal, et al., 1979) suggest that with development, boys increasingly restrict their range of emotional expression (Buck, 1977; Feldman & White, 1980; Saarni, 1982; Shennum & Buegental, 1982), whereas girls increasingly inhibit the expression and recognition of socially unaccepted emotions, such as anger (Feldman & White, 1980; Shennum & Buegental, 1982). Thus, women may develop emotional capacities that foster interpersonal

relatedness, whereas men may develop capacities for dealing with emotions that allow them to maintain personal independence, and perhaps emotional distance.

This contrast may also be reflected in the development of cognitive capacities that allow perceivers to meet their respective needs. Women may develop a special capacity to use integration processes to foster and maintain a sense of communion with others. By contrast, men may develop a special capacity to use differentiation processes to create and maintain a sense of agency and independence from others.

The idea that individuals develop "cognitive styles" akin to personality dispositions is not a new one (see Goldstein & Blackman, 1978). Theorists (e.g., Gilligan, 1982) have in fact explained the agency-communion contrast in social perception from a trait perspective. Recently, Lykes (1985) proposed that women's social perceptions across a wide range of topics is rooted in the perception of embeddedness and interrelationships, more so than men's social perception. She gave men and women a series of social perception measures (e.g., TAT, inkblot) to measure to this difference. The results showed that the measures of connectedness (which were mostly structural rather than content-based) correlated with each other, but women did not generally have more integrative social perceptions. This finding suggests that these differences in cognitive complexity may not be stable across all situations. Rather

than assuming that women and men do not use integration and differentiation respectively, it may be that these differences emerge only under conditions in which differentiation and integration processes have the most functional utility.

The Person X Situation approach to social perception (Aronoff & Wilson, 1985) suggests that the specific concerns that the perceiver brings to the situation should determine whether or not the social environment is viewed as providing opportunities for motivational satisfaction. When the properties of a given situation affect the motives of the perceiver, he or she should be more interested in that situation and this greater interest should be reflected in the complexity with which information is processed. Taking this perspective, Woike & Aronoff (1992b) suggest that differential use of differentiation and integration is most likely to be found in situations that prompt the agentic or communal social concerns of the perceiver. Thus, it is the interaction of the characteristics of the perceiver (including gender, implicit motivation, and/or developed capacities to use differentiation and integration processes) and the demands of the situation that leads to the most functional cognitive response.

Woike and Aronoff (1992b) reasoned that if men and women deal with emotional experiences differently in ways that are related to their social concerns, then these

affective states may prompt women and men to use different types of complexity. Women may use more integration in order to maintain a sense of connection and relatedness with others. Men, by contrast, may use more differentiation in order to maintain a sense of independence and perhaps, emotional distance. In a study designed to test this hypothesis, Woike & Aronoff (1992b) had women and men go through a mood induction procedure in which they were asked to recall a personal experience that either made them feel very happy or very angry (or that happened yesterday, as a control condition). These subjects then performed a standard social impression task which was coded for cognitive complexity. In general, the results showed that affective states led men to process social information using more differentiation and women processed social information using more integration. Woike and Aronoff (1992b) suggest that these affective states prompted the agentic and communal concerns of men and women, respectively. Differentiated processing may be useful to men because it allows them to maintain their sense of separateness and restrict their emotional involvement. Integrated processing, on the other hand, may be more useful to women in situations in which they desire to maintain a sense of connectedness and contact with others.

From another perspective on the agency-communion contrast, McAdams (1985) and colleagues (McAdams, Brand,

McNamara, & Lensky, 1988) have suggested that it is the person's motivation rather than his or her sex that underlies this difference in social orientation. Researchers (e.g., McAdams, et al., 1988; Winter, 1988) have found that the power motive is more predominant among men, while intimacy motivation is more predominant among women. It follows, then, that motivational differences (as well as gender differences) may be linked to the differential use of differentiation and integration processes. Therefore, it may be a combination of the characteristics of the perceiver (including gender, implicit motives, and cognitive capacities) interacting with the perceiver's immediate affective experience and the characteristics of the situation that create differences in the complexity of cognitive processing. I suggest the following sequence: A situation triggers the arousal of affect specific to the implicit motive. If the characteristics of the situation are linked to the affect goal (i.e., feeling strong or feeling close), then the perceiver will engage in specific kinds of perceptual/cognitive strategies to bring about motivational satisfaction. Thus, I expect that the arousal of specific motives in combination with the characteristics of the situation will lead to differential use of differentiation and integration processes.

More specifically the type hypothesis states that when the power-motivated individual perceives environmental cues

related to power that present an opportunity to feel strong, this activates the power motive and brings about an impulse to act, followed by learned cognitive strategies that may lead to the affective experience of feeling strong. One of the ways in which power-motivated people may attempt to achieve motivational satisfaction is to use more differentiated processing. If differentiated processing allows individuals to make impartial judgements, apply restricted perspectives, and perceive differences, then such processing may allow power-motivated individuals to have a greater sense of power and mastery over the situation, which may in turn allow them to achieve motivational satisfaction.

Similarly, the intimacy-motivated individual processes cues related to intimacy and that present an opportunity to feel close. This activates the intimacy motive and brings about an impulse to act, followed by learned cognitive strategies that lead to the affective experience of feeling close. One of the ways in which intimacy-motivated people may attempt to achieve motivational satisfaction is to use more integrated processing. Through integrated processing intimacy-motivated individuals can see similarities, connections, and relationships, which may allow them to have an increased feeling of closeness to and understanding of others, and subsequently to achieve motivational satisfaction.

To explore this hypothesis in a pilot study, Woike & Aronoff (1992c) had power- and intimacy-motivated women recall a positive, emotionally-involving life experience (designed to put them in a state of motivational arousal) or a ordinary event that happened yesterday (designed to be a control condition) and then view a videotape of two job candidates involved in a peer interview under conditions in which subjects were told that they were chosen for the experiment because they had personalities similar to the job candidates' who were described as either power- or intimacy-oriented. It was expected that those who were in a state of motivational arousal (after they recalled a pleasant experience) and then received incongruent information (i.e., power [intimacy] -motivated subjects who were told that they had personalities characteristics related to intimacy [power]) would be experiencing greater difficulty reaching motivational satisfaction than those who were in a state of positive arousal and received congruent information, because they believed they were chosen out of a large group of people as those who were most likely to be in the process of developing skills that were in a sense opposite to their personal concerns and aspirations. This "mismatch" of information was expected to create a situation that made motive satisfaction more difficult. If power- and intimacy-motivated individuals do in fact use the types of complexity to bring about motivational satisfaction, then they should

increase their differential use of differentiation and integration in this incongruent situation in order to achieve motive satisfaction. That is, power-motivated subjects were expected to use more differentiation to reestablish a sense of feeling strong, while the incongruency was expected to lead intimacy-motivated subjects to use more integration to reestablish a sense of feeling connected to others. By contrast, congruent information was expected to sustain individuals' experience of satisfaction rather than create a need to reestablish it; therefore, individuals who were asked to recall a pleasant experience and then received congruent information were not expected to intensify their use of differentiation and integration processes. The findings generally supported these predictions. In motivationally-arousing and incongruent information conditions, power-motivated women used more differentiation than did intimacy-motivated women and intimacy-motivated women used more integration than did power-motivated women.

Thus, it appears that power- and intimacy-motivated individuals, while under motivationally-arousing conditions in which they are experiencing difficulty reaching motivational satisfaction, do in fact use more differentiated and integrated processing, respectively. Moreover, the motivation of the perceiver may have a greater (or lesser) influence on the sequence of events that lead to

differential use of these types of complexity than gender. But, because this study used only females, it was not able to explore this hypothesis.

To expand the type hypothesis to include gender differences, it is important to consider the fact that social situations that arouse power and intimacy motives are often related to gender. Behaviors that allow people to feel strong and independent are often considered more appropriate males, while behaviors that allow people to feel close and intimate are often considered more appropriate for females (e.g., Block, 1973; Chodorow, 1974). Therefore, the same situation may trigger the arousal of affect related to these implicit motives, but the situational characteristics may differentially make it more difficult to achieve motivational satisfaction for men and women. For instance, women who want to satisfy a need for power may not be able to engage in the same kinds of behaviors that lead to the motive satisfaction of feeling strong as men can. Likewise, men who wish to satisfy a need for intimacy may not be able to engage in the same kinds of behaviors that lead to the motivational satisfaction of feeling close as women can. Thus, power-motivated women and intimacy-motivated men may develop different strategies to meet their respective needs. These strategies may be more cognitive than overtly behavioral because it may be easier to be sanctioned for gender-inappropriate behavior than gender-inappropriate

cognition. Thus, gender-atypical women and men (i.e., power-motivated women and intimacy-motivated men) may find the differential use of differentiation and integration processes to be particularly useful.

A reanalysis of the data from an initial study (Woike & Aronoff, 1992a) found evidence to support this view. In this experiment, power- and intimacy-motivated men and women viewed a videotape of two targets involved in a peer interview under conditions in which they anticipated to be interacting with the targets in a way that was either congruent or incongruent with their implicit motives. They formed impressions of the targets which were then coded for cognitive complexity. A reanalysis of the data from this study (the initial findings will be presented in the next section) revealed that in congruent conditions, power-motivated women used more differentiation than power-motivated men and intimacy-motivated men used more elaborated integration than intimacy-motivated women.

Thus, all these findings suggest that when power- or intimacy-motivated individuals are in a state of motivational arousal, but have not yet reached motivational satisfaction, they will engage in specific cognitive strategies to attain such satisfaction. Under these circumstances, power-motivated individuals should use more differentiated complexity and intimacy-motivated individuals should more integrated complexity.

The Level Hypothesis: Simple vs. Elaborated Complexity

Woike (1989a) reviewed the different systems for scoring cognitive complexity and concluded that there are two level of both differentiation and integration. The simple forms of complexity involved perceiving different attributes (i.e., simple differentiation) and forming simple links between them (i.e., simple integration). The elaborated forms of complexity involved making contrasts and comparisons among attributes (i.e., elaborated differentiation) and perceiving dynamic relationships and complex connections between attributes (i.e., elaborated integration).

Simple complexity involves perceiving people, objects, and topics through their separate characteristics and simple exemplars of those attributes, therefore it should be used in situations in which there is no motivation for a deeper understanding of the person, object, or topic. The elaborated forms of complexity, on the other hand, involve perceiving people, objects, and topics through their contrasting and interrelated characteristics, and should be used in situations in which there is a motivation for careful processing that will lead to a deeper understanding of the person, object, or topic.

Many lines of research concur that the perceiver processes social information that is personally involving

more thoroughly than other types of information (e.g., Aronoff & Wilson, 1985; Battistich, Assor, Messé & Aronoff, 1985; Chaiken, 1980; Csikszentmihalyi, 1990; Forgas, 1992; Kelly, 1955; Langer, 1989; McArthur & Baron, 1983; Petty & Cacioppo, 1986). Research also suggests that certain factors determine "deeper" processing of the social environment (e.g., Craik & Lockhart, 1972; Mueller, 1979) and that individuals who are most engaged by the situation will form richer construals of that situation (Woike & Aronoff, 1992a).

From a general social-psychological perspective, theory and research on affective states and social cognition suggests that immediate affective experiences can generally influence social cognitive processing in important ways (e.g., Bodenhausen, in press; Forgas, 1992; Schwarz, 1990). Schwarz (1990) posits a functional analysis of affective states which states that a particular emotion is likely to trigger cognitive strategies that are adaptive for the situations that elicit that emotion.

To use this perspective to understand implicit motivational arousal as a mediator of cognitive processing, I suggest the following sequence of events. An event triggers the arousal of affect related to a specific implicit motive. This leads the perceiver to engage in specific kinds of perceptual/cognitive strategies (and behaviors) to bring about motivational satisfaction. The

arousal of specific motives in combination with the characteristics of the situation should lead to differential use of simple and elaborated complexity. In motive-arousing situations in which satisfaction is not yet achieved, perceivers should intensify their efforts to understand the situation in order to attain such motive satisfaction. Thus, in motive-arousing situations in which satisfaction is possible but not yet achieved, perceivers should increase their use of elaborated complexity. In motive-arousing situations in which the affective goal is already achieved, perceivers should use more simple complexity because there is no need to engage in effortful processing to experience motivational satisfaction.

Evidence for the Level Hypothesis

The levels hypothesis states that perceivers, regardless of their specific personality (or implicit) motivations, will use more simple and elaborated complexity depending on their need to understand the information in order to reach motive satisfaction. Perceivers will use simple complexity when their incentive to understand the information is low, but they will use elaborated complexity when their motivation to understand the information is high.

There are three kinds of evidence described below which support the hypothesis that the level of cognitive

complexity is linked to the degree of motivation to understand the information. First, studies in social psychology demonstrate that people use more elaborated complexity in situations that specifically demand more careful processing of information (e.g., Tetlock, 1983). Secondly, studies in social psychology also demonstrate that general forms of affective arousal can lead to greater use of cognitive processes similar to simple complexity unless perceivers have an incentive to engage in careful processing (e.g., Forgas, 1992). Third, a study pertaining to implicit motives demonstrates that when people anticipate events that are likely to lead to motive satisfaction, they use more elaborated complexity to understand that information (Woike & Aronoff, 1992a).

First, a good deal of research in social psychology demonstrates that situational demands can influence the level of complex cognitive processing. For instance, Tetlock (1983) and colleagues (e.g., Tetlock & Kim, 1987) have demonstrated that making people accountable for their decisions on social issues by increasing their need to justify their views leads to a higher (or more elaborated) levels of complex processing. By contrast, there is a good deal of evidence (see Fiske & Taylor, 1991) to demonstrate that when there is no incentive to process information carefully, perceivers use heuristics or methods of cognitive processing defined by Woike (1989b) as simple complexity.

For instance, perceivers have been found to reduce their impressions of targets to a small group of attributes and traits and associated behaviors. The use of these attributes can be understood as instances of simple differentiation. Behavioral exemplars connected to these traits are similar to what Woike (1989a) calls simple integration.

Second, studies in social psychology (see Bodenhausen, in press; Forgas, 1992; Schwarz, 1991) also demonstrate that arousal of general positive affect (i.e., good moods) leads to more heuristic and less careful processing than neutral or negative moods. Research (see Isen, 1987; Murray, et al., 1990) also demonstrates that happy people are more likely to perceive different attributes in a given topic (i.e., simple differentiation) and more unique but simple connections between them (i.e., simple integration) than people in bad or neutral moods. Thus, it appears that individuals who are experiencing affective states with no motivation to process information carefully will use more simple complexity. Moreover, it could be that people in such mood states are more interested and involved in their own private affective experiences than the information provided by the experimental situation.

Finally, Woike and Aronoff (1992a) studied implicit motives as mediators of the complexity of cognitive processing from an interactional perspective. They found

that when power- and intimacy-motivated people who anticipated to be interacting with the targets in a way that was congruent with their underlying motives, they formed impressions using more elaborated complexity than those who were not in such states of motivational arousal. They argued that processing information in a deeper, more elaborated way may provide a more thorough understanding of the anticipated event. A more thorough understanding would allow perceivers to attain motivational satisfaction. Subjects in the congruent conditions did not use more simple complexity, however. It appears to be the readiness to engage in motivationally-relevant experiences that leads to more elaborated complexity.

Thus, it appears that more elaborated complexity will be used by perceivers when there is a personal reason to understand the information thoroughly. By contrast, in situations in which there is no need for thorough and careful processing, simple complexity will be used to obtain the "gist" of the information.

To summarize the findings of past research, particularly the three previous studies (Woike & Aronoff, 1992a, 1992b, 1992c), different types of complexity do in fact appear to serve specific functions. First, differential use of differentiation and integration processes are most likely to occur when (1) the situation prompts or arouses agentic/communal concerns, (2) there is

an opportunity to satisfy these needs and (3) satisfaction is difficult to reach and/or cannot be attained through easier means. In these situations, agentic (or power-motivated) individuals use more differentiated processing, while communal (or intimacy-motivated) individuals use of more integrated processing. Second, differential use of simple and elaborated complexity occurs in situations that vary the relevance or need to understand the information. Simple complexity is used in situations that do not demand a thorough understanding of the situation and elaborated complexity is used in situations that do call for a thorough understanding of the situation.

The Proposed Experiment and its Predictions

In this experiment, power- and intimacy-motivated women and men were asked to recall vividly either an event that lead them to feel very happy (i.e., one that led to motive satisfaction) or a common, everyday experience (as a control). Subjects were told that they were selected for the experiment because they were in the process of developing skills related to either power or intimacy that would lead them to be successful later in life. Subjects then viewed a videotape of two students conducting a peer interview and were asked to think about the targets in terms of either power- or intimacy-related abilities. After

subjects viewed the tape, they were asked their impression. These impressions were coded for the simple and elaborated differentiation and integration.

Two general hypotheses were tested. First, the Type Hypotheses predict that power-arousal should be linked to more differentiated processing, whereas intimacy-arousal should lead to more integrated processing. Perceivers who vividly recall an experience that led to motive-satisfaction and then receive incongruent information should be experiencing a block or disruption in the affective experience that was created by the recall of the motive-satisfying event and should therefore use specific types of cognitive complexity to process the information in order to restore this sense of satisfaction. Thus, Type Hypothesis 1 predicts that Power-motivated perceivers who recall a motive-satisfying event and receive incongruent information should use more differentiation than integration. Type Hypothesis 2 predicts that Intimacy-motivated perceivers who recall a motive satisfying event and receive incongruent information should use more integration than differentiation. I have also suggested that individuals with atypical gender-motive combinations (i.e., power-motivated women and intimacy-motivated men) may find it more difficult to reach motivational satisfaction. Thus, Type Hypothesis 3 states that Power-motivated women who recall a motive-satisfying event and receive incongruent information

should use more differentiation than integration. Type Hypothesis 4 states that Intimacy-motivated men who recall a motive-satisfying event and receive incongruent information should use more integration than differentiation.

Second, the Level Hypotheses predict that for power- and intimacy-motivated subjects in motivationally-arousing states in which there is no incentive to understand the information thoroughly should not process information in an elaborated manner. Those who are in motivationally-arousing states in which there is an incentive to understand the information more carefully should process the stimuli with more elaborated complexity. Thus, Level Hypothesis 1 states that perceivers who recall a motive-satisfying experience and then receive congruent information should use more simple complexity than elaborated complexity. By contrast, Level Hypothesis 2 states that perceivers who recall a motive-satisfying experience and then receive incongruent information should use more elaborated complexity than simple complexity.

CHAPTER 2

METHOD

Overview of the Procedure

Female and male undergraduates participated in two sessions which involved research described as concerning "social impressions." In the first session, they wrote six TAT stories. In the second session, subjects high in power or intimacy motivation participated in a two-part experiment. In the first part, they were asked to either recall a single event that was pleasant and that caused them to feel very happy (i.e., motive-satisfying) or to recall a single event that happened yesterday and that was ordinary (neutral). Then, in the second phase, subjects were told that they were selected for the experiment because their test results showed that they were in the process of developing skills related to either power- or intimacy-related activities that would lead them to be successful later in life. Subjects then viewed a videotape of two students conducting a peer interview and were asked to consider the targets for a job described as being either power- or intimacy-related because they themselves were

believed to be in the process of successfully developing such abilities. After they viewed the videotape, they were asked to write a thoughtful paragraph describing their choice of the person who they thought was best suited for the job. These responses were be coded for simple and elaborated levels of differentiation and integration.

Subjects

Approximately 600 introductory psychology students from the Michigan State University subject pool subjects were pre-screened for power and intimacy motivation. All subjects received class credit for their participation. From this large sample, the distributions of power and intimacy scores were examined and selection criteria were derived based on the sample distribution and the selection criteria used in a previous investigations (i.e., Woike & Aronoff, 1992a, 1992c). The criteria for high-intimacy, low-power and high-power, low intimacy are described below. Subjects whose power and intimacy scores met these criteria were called back to participate in the experimental session for which they received five dollars. One hundred and twenty-one subjects were recruited to participate in the experimental session.

The Initial Testing Session

The first session involved administering the Thematic Apperception Test to find individuals who are high in power and low in intimacy motivation and whose who are high in intimacy and low in power motivation. Subjects participated in groups of 20 to 60 persons in a neutral classroom setting. The experimenter greeted the subjects and gave them the following instructions:

> "Today you will be participating in a study about social impressions. In this session, you will write some imaginative stories to pictures. We may call you back to participate in some other psychology experiments next term. Please read the consent form and sign it if you would like to participate in the study."

A consent form can be found in Appendix A. The consent forms were be collected and the TAT booklets were passed out. The experimenter read aloud the instructions on the TAT cover sheet (see Appendix A). All subjects were shown 6 TAT slides which were projected on to a large screen. These slides have been used in past research because they potentially cue power and intimacy motives (McAdams, Lester,

Brand, McNamara & Lensky, 1988). These pictures include the following:

1. Two people sitting on a park bench near a river.
2. A man sitting at a desk upon which sits a photograph of a family.
3. A (male) ship's officer conversing with another man.
4. Two (female) scientists in a laboratory.
5. A man and a woman on a trapeze.
6. An older man, a younger woman, a dog, and horses walking through a field.

Pictures (1) and (2) can be found in McClelland and Steele (1972) and (3), (4), (5) and (6) can be found in McClelland (1975).

All subjects were shown the same six pictures in the same order under neutral classroom conditions. The testing followed the standard group administration procedure and standard instructions used in this type of assessment (Atkinson, 1958). Each picture was projected onto the screen for 20 seconds. Subjects then had five minutes to write each story. All subjects wrote their stories in a booklet composed of a cover sheet and six blank pages. (An example of the TAT booklet can be found in Appendix A.) All subjects will be shown the 6 slides in the order used in previous studies (e.g. McAdams, 1982, 1985; McAdams, Lester, Brand, McNamara & Lensky, 1987).

After all the TAT pictures were shown and participants had written all six stories, they were thanked for their participation and reminded that they may be getting a call to participate in more research some time in the future.

Selection of Power and Intimacy Motivated Subjects

The stories written to the TAT pictures were coded using the standard scoring procedures developed for the need for power (Winter, 1973) and the need for intimacy (McAdams, 1984). Coders were trained in the assessment of power and intimacy motivation through coding manuals (McAdams, 1984; Winter, 1973). These manuals explain the coding procedures in detail and provide practice stories that allow coders to compare their scores with an "Expert Scoring" key. All coders achieved a reliability of r = .90 or higher before scoring the stories written by subjects in the study. Their reliability scores were computed by correlating the coders scores with the expert coding provided in the manual for the practice stories.

The TAT protocols were scored by these coders in order to determine the sample of subjects who manifested the two motives most strongly. From these scores, separate distributions were derived for males and females on each motive. One hundred and twenty-one persons whose motive scores were in the top third on one motivation and the lower

half on the other were selected for participation in the experiment. Similar to a study by Woike and Aronoff (1992a) which entailed a similar selection procedure, females had the following scores: high power = 7-17, low intimacy = 0-6, n = 29; low power = 0-6, and high intimacy = 7-24, n = 34; and males had the following scores: high power = 7-19, low intimacy = 0-6, n = 31; low power = 0-6, and high intimacy = 6-11, n = 27.

Procedure of the Experimental Session

Research assistants unaware of the subjects' motive scores scheduled them in groups of 2 to 6 persons; motivation and sex of subjects were not controlled in scheduling. Each group was randomly assigned to either the motive-arousing or neutral condition and either the congruent or incongruent information condition. The experimenter was blind to subjects' motivation throughout the experiment.

Subjects were told the session would be in two phrases through the following directions:

> "Last Fall (or Summer) term you participated in a study in which you completed a number of questionnaires and wrote some imaginative stories to pictures. We chose you out of the 600 people who participated in those studies because, based on your responses, we

believe you are the kind of people who have some special qualities that we are particularly interested in. I'll explain this greater detail once we get started.

For today's study, first, in an effort to get to know you a little better in the short time we have, we would like you first to describe one of your life experiences. Then you will be given some instructions and asked to watch a videotape of two people who have participated in a previous part of the study and asked your impressions of them. If you would like to participate, please read and sign the consent form."

The experimenter collected the consent forms and passed out the Life Experiences Questionnaire and read the instructions aloud (see Appendix A). Subjects had 10 minutes to complete the Life Experiences Questionnaire. After 10 minutes, the experimenter returned and gave the following instructions that provided descriptions of the subjects and the targets that are related to either power or intimacy:

"Our research as well as the research of other psychologists has found that there are two kinds of people who have special characteristics that lead them to be successful later in life.

"The first type of person enjoys and does well at being a leader to others. They enjoy giving entertaining speeches and persuading others to agree with their opinions on issues that they care about. Through their experiences, these men and women develop a sense of knowing how to make important decisions that affect others. And they typically pursue careers in which they have a great deal of decision-making power.

"The second type of person enjoys and does well at being a close friend to others. They enjoy working together cooperatively and sharing ideas with people who they care about. Through their experiences, these men and women develop the ability to draw people about and understand their needs. And they typically pursue careers in which they can demonstrate a great deal of empathy and consideration for others.

"I want to stress the fact that both kinds of people have been found to be equally successful and happy. They just have different abilities and take different approaches to dealing with people.

[Power description] Of course, you have been chosen as part of the group of individuals who enjoys being a leader to others.

[Intimacy description] Of course, you have been chosen as part of the group of individuals who enjoys being a

close friend to others.

"I'm going to show you a videotape of two people named Kim and Eric conducting what is called a peer interview in which two people interview each other for a job as a research assistant in the psychology department. Two years ago, we videotaped a number of these peer interviews with different students and found that people liked Kim and Eric the best. We have been using some excerpts of their peer interview to ask these two types of people to test their knowledge and abilities in their given area of expertise.

"The first group of people that I described is being asked to think about Kim and Eric in terms of their leadership ability and social power, while the second group is being asked to think about Kim and Eric in terms of their empathic abilities and social sensitivity.

[Power description] "Since we believe you are in the process of developing strong leadership abilities, we would greatly appreciate your insights into Kim and Eric. Specifically, do you think they would be successful at a job that calls for developing a sense of knowing how to make important decision that affect others?

[Intimacy description] "Since we believe you are in the process of developing excellent social sensitivity, we would greatly appreciated your insights into Kim and Eric. Specifically, do you think they would be successful at a job that calls for developing the ability to draw people out and understand their needs?

The experimenter then showed the 7-minute videotape of the peer interview. After the subjects watched the videotape, the experimenter gave them each an impression task sheet (see Appendix A) and read the instructions aloud. Subjects were given 10 minutes to write their impressions in response to the question. After 10 minutes, the experimenter collected the impressions and explained, "Now we have a short questionnaire to find out more about the people who are participating in these studies." The experimenter handed-out the Participant Information Sheet (see Appendix A). After subjects completed this last measure, they were debriefed and given payment for their participation.

The Selection of the Impression Task

To obtain a sample of the complexity with which information is processed under motive-arousing conditions, a task was required that was unstructured enough to allow the

subjects to form their own impressions in a subjective way but still required more than just a superficial level of cognitive processing. A decision-making task was most suitable because it required subjects to make a choice and justify it. In addition, it has been used quite successfully in past research (Woike & Aronoff, 1992a, 1992b 1992c). The instructions on the impression information task were designed to get subjects to think in a thoughtful way and to encourage them to use different sorts of information from the videotape and job description in different ways without giving them specific guidelines of how to structure their decision.

Subjects wrote a response to the following question during a 10-minute period:

> "Think about what you have seen of Eric and Kim. Think about the kind of job we have described. Since both people and jobs are complex and hard to pigeon-hole, they need to be thought of in relation to each other in different ways and on different levels. Take a moment or two to gather your thoughts and then decide who is most suitable for the job. What kinds of qualities and behaviors were shown on the videotape that lead you to believe that this person is the best for the job? Please carefully state your reasons for taking this position."

Videotape Presentation of Target Persons

A 7-minute videotape that was composed of segments of the same female and male undergraduate conducting various stages of the peer interview and working on a task together. These two actors were chosen because they appeared to be in similar appearance, size, attractiveness, pleasantness, and intelligence. The two actors had conducted a series of peer interviews and interactive tasks. From this sample of approximately 6 hours of videotape, segments were edited to create a videotape in which both actors performed the interview and related tasks with equivalent competency and equal participation. The tasks were performed to be balanced, containing equal amounts of power and intimacy behavior. In making this videotape, students studied an outline describing initiation and affiliation behaviors derived from the Interaction Process Analysis (IPA) coding systems (Bales, 1950). This outline provided suggestions for demonstrating initiation and affiliation behaviors in the interview context. The final videotape was edited to be used in the experiment.

To insure that the actors did not differ in the amount of power or intimacy behaviors, the videotape was coded by two assistants trained in the use of the Interaction Process Scores (IPS) system for analyzing interpersonal behavior (Borgatta & Crowther, 1965). Power-oriented behaviors,

defined by the initiation axis of the IPS system, included the following categories: (4), acknowledges, understands, recognizes; (6), procedural suggestion; (7), suggests solution; (8), gives opinion; (11), gives orientation; (12), draws attention; (13), asks for opinion, and (14), disagrees. As expected, there was not a significant difference, t (7) < 1, in the amount of initiative behaviors between the two actors.

The intimacy behaviors, defined by the affiliation axis of the IPS system, included the following scoring categories: (1), social acknowledgment; (2), shows solidarity through raising the other's status; (3), shows tension release, laughs; and (5), shows agreement, concurrence, compliance. As expected, there was not a significant difference t (3) < 1, in the amount of affiliation behaviors used by the two actors. Inter-coder reliability was high, r = .98 for the combined initiation and affiliation categories.

Design

The design of this experiment is composed of four independent variables each with two levels. The study was a 2(Motivation: power versus intimacy) X 2(Sex: female versus male) X 2(Arousal condition: positive versus neutral) X 2(Information condition: congruent versus

incongruent) factorial design. The number of subjects per cell ranged from 6 to 9.

Coding the Impressions

Coders were trained to score the impressions for differentiation and integration with the Categories of Complexity scoring manual (Woike, 1989b). A concise version of this scoring manual can be found in Appendix B. All coders achieved at least .80 reliability for four categories of complexity (i.e., simple differentiation, simple integration, elaborated differentiation, and elaborated integration) on the prepared practice materials. Reliability was determined by comparing their scores with the expert scoring key of the practice paragraphs.

In coding the paragraphs from the experiment, trained coders were assigned to work in coder pairs so that each paragraph was scored by two independent coders. If there are large disagreements (i.e., more than three points), the paragraph was given to a third coder and the mean of the two scores in closest agreement was used for the analysis. The scores for each subject on the categories of complexity were derived by taking the mean of the coders' scores after recoding. The inter-rater reliabilities (n = 121) for the four categories of complexity were r = .91 for simple differentiation, r = .88 for elaborated differentiation, r =

.77 for simple integration, and $\underline{r}$ = .94 for elaborated integration.

CHAPTER 3

RESULTS

Overview of the Results

The analyses and results are presented in six sections. First, to investigate if participants in the Positive Arousal condition were experiencing the positive affect associated with motive satisfying experiences, subjects' ratings on a mood rating questionnaire were analyzed. Secondly, to examine if subjects did in fact recall experiences that were associated with their implicit motives, the responses to the life experience questionnaire were subjected to a content analysis. In the third section, the tests of the hypotheses are described. The planned comparisons of the means relevant to these predictions are described in the fourth section. The fifth section describes the simple effects tests that were performed to find the bases of the statistically significant interactions found when testing the hypotheses. These findings are then summarized in a final section.

Analysis of the Participant Information Questionnaire

It was predicted that individuals in the Positive Arousal condition would report more happiness than those in the Neutral Arousal condition. A 2(Sex: male versus female) X 2(Motive: power versus intimacy) X 2(Arousal Condition: positive versus neutral) X 2(Information Condition: congruent versus incongruent) Analysis of Variance (ANOVA) was performed on the ratings of happiness. Contrary to expectations, the main effect for mood condition was not statistically significant, F (1,105) < 1, ns. This analysis did yield a nonpredicted Motive X Information Condition interaction, F (1,105) = 5.64, p <.02, however. Examination of the means, presented in Table 1, revealed that intimacy-motivated subjects in the Congruent Information condition reported less happiness than did Intimacy-motivated individuals in the Incongruent Information condition and Power-motivated subjects in either condition. No other effects approached significance.

Table 1

Reported happiness as a function of motivation and information condition.

	Information Condition	
	Congruent	Incongruent
Motive		
Power	6.65b	6.41b
Intimacy	5.54a	6.85b

Note: Noncommon subscripts indicate that means differ at $p < .05$.

Content Analysis of the Responses to the Life Experiences Questionnaire

It was predicted that when Power- and Intimacy-motivated individuals were asked to recall vividly an personal experience that caused them to feel happy, their emotional experiences would be linked to their respective power and intimacy concerns. Based on the scoring system used by McAdams (1982), power-motivated individuals should recall happy events that pertain to (a) enhanced perception of their own physical or psychological strength, (b) exertion of influence or control over others, (c) vigorous activity, and (d) an increase in fame or prestige. By contrast, intimacy-motivated individuals should recall happy events that pertain to (a) interpersonal interaction, (b) increases in loving/liking or emotional bonds between people, (c) communication and sharing with others, (d) sympathy and showing concern for others, and (e) touching and physical closeness. The responses from the life experiences questionnaire were scored for these categories so that each protocol received a score ranging from 0 to 4 on power-related imagery and a score ranging from 0 to 5 on intimacy-related imagery. These protocols were scored by two coders who were unaware of the hypotheses or motives of the subjects. Inter-rater reliability was high, r (119) =

.98.

It was predicted that Power-motivated subjects in the Positive Arousal condition would have more power-related imagery than all others and that Intimacy-motivated subjects in the Positive Arousal condition would have more intimacy-related imagery than all others. A 2(Sex: male versus female) X 2(Motive: power versus intimacy) X 2(Arousal Condition: positive versus neutral) X 2(Information Condition: congruent versus incongruent) Analysis of Variance (ANOVA) was performed on the power imagery scores. This analysis yielded a nonsignificant Motive X Arousal interaction, F (1,105) = 1.55, p <.22. However, planned comparisons of the means in Table 2 demonstrated that Power-motivated subjects in the Positive Arousal condition had more power imagery than all other, as predicted, (ps ranged from <.02 to <.0001).

Table 2

Power imagery as a function of motivation and arousal condition.

	Arousal Condition	
	Positive	Neutral
Motive		
Power	1.17a	.26b
Intimacy	.78b	.17b

Note: Noncommon subscripts indicate that means differ at $p < .02$.

A 2(Sex: male versus female) X 2(Motive: power versus intimacy) X 2(Arousal Condition: positive versus neutral) X 2(Information Condition: congruent versus incongruent) Analysis of Variance (ANOVA) was performed on the intimacy scores. As expected, this analysis revealed a Motive X Arousal Condition interaction, F (1,105) = 6.88, p <.01. Examination of the means in Table 3 showed that Intimacy-motivated individuals in the Positive Arousal condition had more intimacy imagery in their life experiences than all others, (ps ranged from <.001 to .0001). (These analyses revealed a number of other significant effects that were not relevant to the hypotheses; see Appendix C for a summary of these nonpredicted findings.)

Table 3

Intimacy imagery as a function of motivation and arousal condition.

	Arousal Condition	
	Positive	Neutral
Motive		
Power	.77b	.70b
Intimacy	1.72a	.57b

Note: Noncommon subscripts indicate that means differ at least p. <.001.

One of the underlying assumptions of the experiment is that individuals in the Positive Arousal condition would recall experiences related to their implicit motives; therefore, each protocol was examined individually for the presence of these motive-relevant themes. This analysis found that in the Positive Arousal condition, the protocols of fifty-three out of sixty of power-motivated subjects contained power imagery and the protocols of fifty-one out of sixty-one of the intimacy-motivated subjects contained intimacy imagery. The results of analyses performed, as described below, with these seventeen subjects eliminated (n = 104) generally yielded parallel effects and similar mean patterns, but these results were less significant. In the smaller sample, cell sizes ranged from 3 to 9 within the 2 X 2 X 2 X 2 design, while the cell sizes ranged from 6 to 9 in the larger sample. Therefore, the larger sample was used to increase statistical power. (This decision has implications for interpreting the results which will be discussed later.)

Testing the Hypotheses

The six hypotheses detailed on pages 42-44 were tested through a 6-factor Mixed Model Analysis of Variance with Motive, Sex, Arousal Condition, Information Condition as between-subject variables and type and level of complexity as within-subject variables. Each of the six variables has two levels.

Two general predictions were tested. First, the Type Hypothesis predicted that the arousal of the power motive should be linked to more differentiated processing, whereas the arousal of the intimacy motive should lead to more integrated processing. Specifically, Type Hypothesis 1 predicted that Power-motivated perceivers who recalled a motive-satisfying event and received incongruent information would use more differentiation than integration. Type Hypothesis 2 predicted that Intimacy-motivated perceivers who recalled a motive satisfying event and received incongruent information should use more integration than differentiation. Thus, hypotheses 1 and 2 would be supported by a Motive X Arousal Condition X Information Condition X Type interaction.

It was also predicted that individuals with atypical gender-motive combination (i.e., power-motivated women and intimacy-motivated men) may experience more difficulty

reaching in motivational satisfaction. Specifically, Type Hypothesis 3 stated that Power-motivated women who recalled a motive-satisfying event and received incongruent information should use more differentiation than integration. Type Hypothesis 4 stated that Intimacy-motivated men who recalled a motive-satisfying event and received incongruent information should use more integration than differentiation. This effect would be demonstrated through a Sex X Motive X Arousal Condition X Information Condition X Type interaction.

Second, the Level Hypotheses predicted that power- and intimacy-motivated subjects in motive-arousing states in which there is no incentive to understand the information thoroughly should not process information in an elaborated manner, whereas those who are in motive-arousing states in which there is an incentive to understand the information more carefully should use more elaborated complexity. Specifically, Level Hypothesis 1 stated that perceivers who recalled a motive-satisfying experience and then received congruent information should use more simple complexity than elaborated complexity. Level Hypothesis 2 stated that perceivers who recalled a motive-satisfying experience and then received incongruent information should use more elaborated complexity than simple complexity. This finding would be demonstrated in a Motive X Arousal Condition X Information Condition X Level interaction.

These hypotheses were tested through a 2(Sex: female versus male) X 2(Motive: power versus intimacy) X 2(Arousal Condition: positive versus neutral) X 2(Information Condition: congruent versus incongruent) X 2(Level: simple versus elaborated) X 2(Type: differentiation versus integration) Analysis of Variance (ANOVA). In this mixed model design, Motive, Sex, Arousal Condition, and Information Condition were between-subject variables and type and level of complexity were within-subject variables.

As predicted from Type Hypotheses 3 and 4, this analysis revealed a Sex X Motive X Arousal Condition X Information Condition X Type interaction, F (1,105) = 4.34, p <.04. Six other statistically significant effects all subsumed under this 5-way interaction, also were found. First, there was a significant Motive X Arousal Condition X Information Condition X Type interaction, F (1,105) = 5.48, p <.02, as predicted. Second, the Sex X Motive X Information Condition X Type interaction, F (1,105) = 5.09, p <.03 was significant. Third, there was a significant Motive X Information Condition X Type interaction, F (1,105) = 7.40, p <.008. Fourth, a Sex X Motive X Type interaction, F (1,105) = 6.82, p <.01 was significant. Fifth, the Motive X Type interaction, F (1,105) = 25.00, p <.0001 was also significant. And lastly, there was a significant main effect for Type, F (1,105) = 76.93, p <.001, in which subjects generally used more differentiation (M = 11.67)

than integration (M = 7.71).

This analysis revealed no other effects. Notably, there were no effects for Level of complexity. Moreover, there were no significant between subjects effects, indicating that there were no differences in the total amount of complexity used in the various conditions. In addition, a 2(Sex: female versus male) X 2(Motive: power versus intimacy) X 2(Arousal Condition: positive versus neutral) X 2(Information Condition: congruent versus incongruent) X 2(Level: simple versus elaborated) X 2(Type: differentiation versus integration) Analysis of Variance on the total number of words used by each subject on the impression protocols detected no statistically significant effects.

Planned Comparisons

The means for differentiation and integration in the eight conditions of Sex, Motive, Arousal Condition, and Information Condition can be found in Table 4. To test the Type hypotheses, the means for the relevant variables were examined via planned contrasts.

Type Hypothesis 1 predicted that Power-motivated perceivers who recalled a motive-satisfying event and received incongruent information would use more differentiation than integration. As predicted, power-

motivated individuals in the Positive Arousal/ Incongruent Condition did use significantly more differentiation (M = 12.42) than integration (M = 6.40), F (1,105) = 28.01, p <.0001. Even though the means were in the predicted direction, this finding is not unequivocal because there was a main effect for Type, whereby all subjects used more differentiation.

Type Hypothesis 2 predicted that Intimacy-motivated perceivers who recalled a motive satisfying event and received incongruent information should use more integration than differentiation. Contrary to prediction, Intimacy-motivated individuals in the Positive Arousal Condition/ Incongruent condition did not use more integration (M = 8.89) than differentiation (M = 11.82). But, given the fact that all subjects used more differentiation, the relative use of integration could be interpreted as weak support for this hypothesis.

Type hypothesis 3 stated that Power-motivated women who recalled a motive-satisfying event and received incongruent information would use more differentiation than integration. As predicted, Power-motivated women in the Positive Arousal/ Incongruent Information condition did use significantly more differentiation (M = 10.08) than integration (M = 6.42), F (1,105) = 7.05 , p <.01. Again, this finding is not unequivocal because of the main effect for Type.

Type hypothesis 4 stated that Intimacy-motivated men who recalled a motive-satisfying event and received incongruent information should use more integration than differentiation. But contrary to hypothesis 4, Intimacy-motivated men in the Positive Arousal/ Incongruent Information condition did not use more integration (M = 9.79) than differentiation (M = 11.93). But again, because all subjects used more differentiation, this amount of integration could be viewed as weak support for the hypothesis.

Thus, the results of the planned comparisons show that in the Positive Arousal/ Incongruent Information condition Power-motivated subjects used more differentiation than integration as expected, but Intimacy-motivated subjects in the Positive Arousal/ Incongruent Information condition did not use more integration. However, it appears that all subjects did in fact use more differentiation than integration since there was a strong main effect for Type. Moreover, the large number of simple interactions subsumed under the predicted five-way interaction suggest more complex results than was initially anticipated.

The mixed-model ANOVA did not uncover any effects for Level of complexity. Even though the Motive X Arousal Condition X Information Condition X Level interaction was not significant, planned comparisons were performed to test the level hypotheses.

Level hypothesis 1 stated that perceivers who recalled a motive-satisfying experience and then received congruent information should use more simple complexity than elaborated complexity. As predicted, Power-motivated subjects in the Positive Arousal/ Congruent condition used more simple complexity (M = 12.39) than elaborated complexity (M = 7.98), F (1,105) = 27.30, p <.001. And as expected, Intimacy-motivated subjects in the Positive Arousal/ Congruent Information condition used more simple complexity (M = 10.41) than elaborated complexity (M = 7.53), F (1,105) = 11.64, p < .001.

Level hypothesis 2 stated that perceivers who recalled a motive-satisfying experience and then received incongruent information should use more elaborated complexity than simple complexity. Contrary to prediction, power-motivated subjects in the Positive Arousal/ Incongruent Information condition used more simple complexity (M = 11.34) than elaborated complexity (M = 7.47) and Intimacy-motivated subjects in the Positive Arousal/ Incongruent Information condition used more simple complexity (M = 11.61) than elaborated complexity (M = 9.10).

Table 4

Differentiation (Diff.) and integration (Int.) as a function of sex, motive, arousal condition, and information condition.

	Arousal Condition							
	Positive				Neutral			
	Congruent		Incongruent		Congruent		Incongruent	
	Diff.	Int.	Diff.	Int.	Diff.	Int.	Diff.	Int.
Motive								
Power								
Males	14.05	6.33	14.75	6.37	12.71	5.07	13.14	5.93
Females	12.07	8.29	10.08	6.42	16.37	8.19	10.37	8.69
Intimacy								
Males	10.06	8.94	11.93	9.79	7.67	7.58	9.92	9.00
Females	9.87	7.00	11.72	8.00	6.69	10.50	13.33	7.17

Simple Effects Tests

A simple effects analysis was performed to explore the base of the significant Sex X Motive X Arousal Condition X Information Condition X Type interaction. First, the simple 4-way effects of Motive, Sex, Information Condition and Type within each Arousal Condition were examined.

The Positive Arousal Condition

The analysis for the Positive Arousal Condition revealed three significant simple effects: a main effect for Type, F (1,54) = 49.31, p <.0001; a Motive X Type interaction, F (1,54) = 8.27, p <.006; and a Sex X Motive X Type interaction, F (1,54) = 6.33, p <.01. To explore the basis of the Sex X Motive X Type simple interaction, the simple 3-way effects of Motive, Information Condition and Type within each Sex were examined. The analyses for males in the Positive Arousal condition yielded two significant effects. There was a simple main effect for Type, F (1,28) = 34.86, p <.0001, in which men in the Positive Arousal condition used more differentiation (M = 10.94) than integration (M = 7.42). There was also a Motive X Type simple interaction, F (1,28) = 15.30, p <.0005; Simple effects tests of the means, presented in Table 5, revealed that in the Positive Arousal condition, Power-motivated males used significantly more differentiation than integration, F (1,105) = 96.63, p <.0001. In the Positive

Arousal condition, Intimacy-motivated men used only marginally more differentiation than integration, F (1,105) = 3.49, p <.07. For females in the Positive Arousal Condition, there was only a simple main effect for Type, F (1,26) = 16.58, p <.0004, in which these women used more differentiation (M = 10.94) than integration (M = 7.42). That is, when asked to recall a motive-satisfying experience, both power- and intimacy-motivated women used more differentiation than integration.

Table 5

Males in the positive arousal condition: Type of complexity as a function of motivation.

	Type of Complexity	
	Differentiation	Integration
Motive		
Power	14.40a	6.35a
Intimacy	10.99	9.36

Note: Common subscripts indicate that means differ at $p < .05$.

The Neutral Arousal Condition

The analysis for the Neutral Arousal Condition revealed four significant simple effects: a main effect for type, F (1,51) = 29.57, p <.0001; a Motive X Type interaction, F (1,51) = 17.03, p <.0001; a Motive X Information Condition X Type interaction, F (1,51) = 11.80, p <.001; and Sex X Motive X Information Condition X Type, F (1,51) = 8.68, p <.005.

To explore the basis of these interactions, the simple 3-way effects of Motive, Sex, and Type within each Information Condition were examined. This analysis revealed two significant simple effects for the Neutral Arousal/Congruent Information condition group: a main effect for Type, F (1,25) = 12.31 and a Motive X Type interaction, F (1,25) = 32.16, p <.0001. Subjects in the Neutral Arousal/ Congruent Information condition used more differentiation (M = 11.28) than integration (M = 7.77). Table 6 presents the differentiation and integration means for the power- and intimacy-motivated individuals who were not asked to recall a motive-satisfying experience and received motive-congruent information about themselves. Examination of the means revealed that Power-motivated individuals in the Neutral Arousal/ Congruent Information condition used significantly more differentiation than integration, F (1,105) = 76.84, p <.0001 and intimacy-motivated individuals used significantly more integration

than differentiation, F (1,105) = 4.56, p <.05.

The analysis for the Neutral Arousal/Incongruent Information group revealed a simple main effect for type, F (1,26) = 12.31, p <.002 and a Sex X Motive X Type simple interaction, F (1,26) = 7.91, p <.009. To find the basis of this interaction, the simple 2-way effects of Motive, and Type within each Sex were examined.

Table 6

The Neutral Arousal/Congruent Information Condition: Types of complexity as a function of motivation.

	Type of Complexity	
	Differentiation	Integration
Motive		
Power	14.54a	6.63a
Intimacy	7.18b	9.04b

Note: Common subscripts indicate that means differ at $p < .05$.

For males in the Neutral Arousal/ Incongruent Information condition, there was a simple main effect for type, F (1,11) = 6.34, p <.03, in which these males generally used more differentiation (M = 11.53) than integration (M = 7.46). This analyses also revealed a marginal simple Motive X Type interaction, F (1,105) = 3.80, p <.08. Examination of the means in, presented in Table 7, revealed that Power-motivated males in the Neutral Arousal/ Incongruent Information condition used significantly more differentiation than integration, F (1,105) = 31.92, p <.0001, but there was no difference in the amount of differentiation and integration used by Intimacy-motivated males in the Neutral Arousal/ Incongruent Information condition, F (1,105) < 1, ns.

Table 7

Males in the Neutral Arousal/ Incongruent Information condition: Type of complexity as a function of motivation.

	Type of Complexity	
	Differentiation	Integration
Motive		
Power	13.14a	5.93a
Intimacy	9.92	9.00

Note: Common subscripts indicate that means differ at $p < .05$.

For females in the Neutral Arousal/ Incongruent Information condition, there was a simple main effect for type, F (1,15) = 11.91, p < .004, in which these subjects generally used more differentiation (M = 11.85) than integration (M = 7.93). This analyses also revealed a marginal Motive X Type simple interaction, F (1,105) = 3.87, p <.07. Examination of the means in Table 8 revealed that Power-motivated females in the Neutral Arousal/ Incongruent Information condition did not use significantly more differentiation than integration, F (1,105) = 1.98, ns; but, Intimacy-motivated women did use significantly more differentiation than integration, F (1,105) = 24.41, p <.0001.

Table 8

Females in the Neutral Arousal/ Incongruent Information condition: Type of complexity as a function of motivation.

	Type of Complexity	
	Differentiation	Integration
Motive		
Power	10.37	8.69
Intimacy	13.33a	7.77a

Note: Common subscripts indicate that means differ at $p < .05$.

A Summary of the Findings

The type and level hypotheses were partially supported; but, these results are not unequivocal because there was a main effect for Type in which all subjects used more differentiation than integration. Power- and intimacy-motivated subjects in the Positive Arousal/ Congruent Information condition used more differentiation and integration, respectively, and more simple complexity than elaborated complexity, generally. Simple effects test revealed four main findings. First, after Power-motivated men were asked to recall a motive-satisfying event, they processed information using more differentiation, while Intimacy-motivated men showed no difference between the amount of differentiation and integration. Both Power- and Intimacy-motivated women used more differentiation than integration after they recalled a motive-satisfying event. Second, subjects who did not recall a motive-satisfying event but did receive motivationally-congruent information about themselves tended to use the predicted differential modes of complexity. Power-motivated individuals in the Neutral Arousal/ Congruent Information condition used more differentiation than integration and Intimacy-motivated individuals in the Neutral Arousal/ Congruent Information condition used more integration than differentiation.

Third, Power-motivated males who did not recall a motive-satisfying event but did receive motivationally-congruent information about themselves used more differentiation than integration, while there was no difference in the amount of differentiation and integration used by Intimacy-motivated men in the Neutral Arousal/ Congruent Information condition. And fourth, there was no difference in the amount of differentiation and integration used by Power-motivated women who did not recall a motive-satisfying event but received motivationally-congruent information about themselves. But, Intimacy-motivated females in the Neutral Arousal/ Incongruent Information condition used significantly more differentiation and integration, which is contrary to the general predictions about the differential use of differentiation and integration. These findings will be discussed in terms of the functional utility of the four kinds of cognitive complexity in the next section.

CHAPTER 4

DISCUSSION

This study investigated the role of affective states as mediators of specific cognitive processes in order to understand how motivational states influence the cognitive processing of social events. Affect experiences related to different social motives were proposed to be linked to the kinds of cognitive complexity people use to process social information. Specifically, it was predicted that different types and levels of complexity serve specific functions that allow individuals to gain motivational satisfaction.

The Type Hypothesis predicted that in situations involving the potential for motivational satisfaction, power- and intimacy-motivated individuals would use the type of complexity that is most likely to lead to motivational satisfaction. In such situations, power-motivated individuals were expected to use more differentiation, while intimacy-motivated individuals were expected to use more integration. Specifically, the Type Hypotheses predicted differential use of differentiation and integration under conditions in which individuals were asked to recall a

motive-satisfying experience and then experienced a disruption in positive affect associated with motive satisfaction through receiving motive-incongruent information about their personalities. Power-motivated subjects were expected to use more differentiation in order to restore a sense of feeling strong, whereas intimacy-motivated individuals were expected to use more integration to restore a sense of feeling connected and close under such conditions. The pattern of results did not generally support these predictions, however.

Instead, the pattern of results suggests that differentiation and integration are used in other ways by power- and intimacy-motivated people. The results showed that there was a strong Motive by Type interaction in which Power-motivated individuals used more differentiation than integration and Intimacy-motivated individuals used more integration than differentiation. This suggests that the link between these two implicit motives and the two types of complexity may be more fundamental than was originally expected. Of course, this interaction was qualified by several higher-order effects.

Perhaps most consistent with the hypotheses was the finding of differential use of differentiation and integration in the Neutral Arousal/ Congruent Information condition. Individuals who did not recall a motive-satisfying event but did receive motivationally-congruent

information about themselves and their abilities seemed to use the predicted modes of complexity. Power-motivated individuals in the Neutral Arousal/ Congruent Information condition used more differentiation than integration and Intimacy-motivated individuals in the Neutral Arousal/ Congruent Information condition used more integration than differentiation. Curiously, this pattern was predicted in the opposite conditions (i.e., Positive Arousal/ Incongruent Information). It was predicted that individuals who were in the Positive Arousal condition and received Incongruent information would have to work harder to achieve motivational satisfaction.

Why might power- and intimacy-motivated individuals use more differentiation and integration respectively in situations in which they are told they were in the process of successfully developing skills that were related to their underlying motives? One reason might be that the congruent condition asked power- and intimacy-motivated individuals to think about the targets in ways that pertained to their underlying motives. In order to do this, they used the mode of cognitive complexity predicted to be associated with each motive. In the Congruent condition, Power-motivated individuals thought about the targets in terms of their different and contrasting attributes, whereas intimacy-motivated individuals focused on the connections and similarities between the targets.

The congruent situation may also have been seen as an opportunity to engage in a motive satisfying experience in itself. These individuals were in a situation in which they were told that experts had selected them out of a large group of people as those who were most likely to be successful at and in the process of developing skills related to their underlying motives. Thus, the individuals in the Neutral Arousal/Congruent Information condition may have been in the process of experiencing motive satisfaction during the impression formation task. Once the individual's motives were aroused by the Congruent Information, they may have then used differentiation (or integration) processes to sustain a sense of feeling strong (or close to others).

Women and men in the Neutral Arousal/ Incongruent Information condition showed a different pattern of use of the types of complexity. Power-motivated males who did not recall a motive-satisfying event but were told they were in the process of successfully developing interpersonal skills related to intimacy used more differentiation than integration. In contrast, there was no difference in the amount of differentiation and integration used by Intimacy-motivated men in the Neutral Arousal who were told they were in the process of successfully developing skills related to power. Likewise, there was no difference in the amount of differentiation and integration used by Power-motivated women in the Neutral Arousal condition who were told that

they were in the process of successfully developing interpersonal skills related to intimacy. But, Intimacy-motivated females in the Neutral Arousal who were told that they were in the process of successfully developing social skills related to power used significantly more differentiation than integration, which is contrary to the general predictions about the differential use of these types of complexity.

Thus, Intimacy-motivated females and Power-motivated males who received incongruent information both used more differentiation than integration. In both cases, this information was, in a sense, doubly incongruent. The message was clearly incompatible with their underlying implicit motives, but it was also incongruent with gender expectations for these individuals. Intimacy-motivated women were told they were developing skills related to having power over others and power-motivated men told they were in the process of developing skills related to social sensitivity. Therefore, it is possible that they found these messages more disruptive or threatening than the power-motivated women or the intimacy-motivated males. Being told that one is similar to others who are clearly dissimilar in not one way, but two ways, may lead to a desire to separate from the situation. Differentiation may serve the function of separating the perceiver from people and social situations that create discomfort. In this way,

perceivers were able to use differentiation to psychologically separate from the situation regardless of their specific motivational orientation.

On the other hand, even though the information was motive-incongruent for power-motivated women and intimacy-motivated men, it was compatible with the typical expectations for their gender. Power-motivated women were told they were in the process of successfully developing interpersonal sensitivity, while intimacy-motivated men were told they were in the process of developing leadership skills. Therefore, power-motivated women and intimacy-motivated men may have found the motive-incongruent information less threatening and disruptive because it was compatible with their gender roles.

In the reanalysis of the Woike and Aronoff (1992a) data, it was found that in congruent conditions in which there was no disruption or threat to motive satisfaction, power-motivated women used more elaborated differentiation than intimacy-motivated men. Comparing the results of Woike and Aronoff (1992a) with the present study, it appears that the differential use of these types of complexity are used by individuals with atypical motive and gender combinations (i.e., power-motivated women and intimacy-motivated men) in situations that provide an opportunity for motive satisfaction, but do not activate their respective gender orientations.

The recall of a happy personal experience (i.e., Positive Arousal condition) did not seem to mediate the complexity of cognitive processing as expected, except for power-motivated males. After Power-motivated men were asked to recall a pleasant life event, they processed information using more differentiation, while Intimacy-motivated men showed no significant difference between the amount differentiation and integration. Both Power- and Intimacy-motivated women used more differentiation than integration after they recalled a positive experience.

It is interesting to compare these results with the findings of the Woike and Aronoff (1992b) study. This study is clearly different from the present research in that it looked at gender effects only. In the Woike and Aronoff (1992b) study, women in the happy arousal condition were found to use more simple integration than men, but men used more elaborated integration than women in this condition. When the use of differentiation and integration was compared <u>within</u> gender and mood conditions, however, the data from Woike and Aronoff (1992b) were consistent with the pattern of results found in the current study: Subjects generally used more differentiation than integration in the positive mood condition. It may be that differentiation, particularly simple differentiation, is easier for subjects to use when they are more interested in their own private affective experience than the social stimuli present. In

addition, cuing one's own affective experience may lead to greater self-focus, which in turn lead to an increase in the perception of the isolated attributes between the self and others.

Originally, it was predicted that the arousal of the power and intimacy motive through the recollection of a positive motive-relevant experience was necessary to bring about these differences in complexity, but the results suggest that this is not the case. Examination of the results showed that much of the differential use of complexity occurred among individuals who were not asked to recall a positive experience. Differential use of complexity varied more between the Motive-Information Congruent Conditions than between the Arousal Conditions. Therefore, it appears that the motive-arousing manipulation that affected the complexity of cognitive processing was in fact the Motive-Information Congruent condition.

The few subjects in the Positive Arousal condition who did not recall positive life experiences that were related to their implicit motives were retained in the sample to increase statistical power and because the pattern of results was virtually the same without these subjects, as discussed previously. As a caveat, it is conceivable that the Positive Arousal condition may have evoked a general positive mood rather than motive-related affects. But given the fact the most of the significant findings were in the

Neutral Arousal condition rather than the Positive Arousal condition, this issue does not seem critical.

How do these results compare with the findings of the Woike and Aronoff (1992c) study? As explained previously, Woike and Aronoff (1992c) had power- and intimacy-motivated women recall a positive, emotionally-involving life experience (Positive Arousal) or a ordinary event that happened yesterday (Neutral Arousal) and then view a videotape of two job candidates involved in a peer interview under conditions in which subjects were told that they were chosen for the experiment because they had personalities similar to the job candidates' who were described as either power- or intimacy-oriented, thereby creating a Congruent/ Incongruent Information condition. In the Positive Arousal/ Incongruent Information condition, Power-motivated women used more differentiation than did intimacy-motivated women and intimacy-motivated women used more integration than did power-motivated women. This pattern of results was not present for women (or men) in the present study. Moreover, unlike Woike and Aronoff (1992b), the types of complexity were compared <u>within</u> sex, motive, arousal, and information conditions in the present study, rather than between these conditions.

The level hypotheses predicted that for power- and intimacy-motivated subjects in motive-arousing states in which there was no incentive to understand the information

thoroughly should not process information in an elaborated manner, whereas those who are in motive-arousing states in which there is an incentive to understand the information more carefully should use more elaborated complexity. Examination of the data revealed that the level hypotheses were partially supported. Both power- and intimacy-motivated perceivers who recalled a motive-satisfying experience and then received congruent information did in fact use more simple complexity than elaborated complexity, as predicted. But, power- and intimacy-motivated perceivers who recalled a motive-satisfying experience and then received incongruent information did not use more elaborated complexity than simple complexity. As mentioned previously, it appears that individuals in the Positive Arousal/ Incongruent condition used differentiation to separate themselves from the situation rather than to try to understand it more carefully.

In general, the results from this study and the three previous investigations (Woike & Aronoff, 1992a, 1992b, 1992c) suggest that the differentiation-integration and the simple-elaborated distinctions within the construct of cognitive complexity are useful ones. Theorists from many perspectives have described distinctions in social orientation that are similar to the power-intimacy contrast (e.g., Bakan, 1966; Franz & White, 1985). Some have further maintained that these orientations are related to

differences in social perception (e.g., Gilligan, 1982; Lykes, 1985). To extend this idea, I have suggested that these social orientations are linked to specific social-cognitive processes that function to allow perceivers to met the respective social needs. Specifically, individuals concerned with power and individual action tend to perceive their social worlds as made up of separate, distinct, contrasting, and conflicting entities; and, individuals concerned with intimacy tend to construe their social reality as made up connections, similarities, interrelationships and resolutions among and between social entities.

Based on the findings from these four investigations, it can be concluded that differential use of these types of complexity are most likely to occur under certain conditions. First, as was predicted in the present study, differentiation may be used by power-motivated perceivers to achieve a sense of feeling strong in situations in which motivational satisfaction is difficult to reach. This was demonstrated by the power-motivated individuals in the Positive Arousal/ Incongruent condition of the present investigation; they used more differentiation than integration under these conditions. Also, Woike and Aronoff (1992a) found that power-motivated women who anticipated interacting with the targets in the power-related way used more differentiation processing, presumably to attain motive

satisfaction.

Likewise, integration processes may be used by intimacy-motivated perceivers to achieve a sense of feeling close in situations where motive satisfaction is difficult to reach. Supporting this, Woike and Aronoff (1992a) found that intimacy-motivated men who anticipated interacting with the targets in the intimacy-related way used more integrated processing as a means to reach motive satisfaction.

Second, differentiation processes may be used by power-motivated perceivers who wish to augment or sustain their experience of motivational satisfaction, such as the power-motivated individuals in the Neutral Arousal/ Congruent Information condition of the present study. Likewise, it integration may be used by intimacy-motivated perceivers to augment or sustain their experience of motivational satisfaction, as was demonstrated by intimacy-motivated individuals in the Neutral Arousal/ Congruent Information condition of the present study.

Third, it appears that differentiation may be used by perceivers to psychologically separate themselves from social situations that created discomfort, as was demonstrated in the present study, and the Woike and Aronoff (1992b) study. In the present study, perceivers who were in conditions that were incongruent with their gender and predominant social motives used more differentiated processing. The general finding from the Woike and Aronoff

(1992b) study was that men used more differentiation when in affective states as compared to men in the control condition.

The level hypotheses states that differences in the degree of complexity used to form an impression are linked to the perceiver's motivation to understand the information. As researchers in the area of social cognition have suggested, people generally do as much cognitive processing as is necessary to meet their purposes (e.g., Fiske & Taylor, 1991; Forgas, 1992; Tetlock, 1983). The results of the Woike and Aronoff (1992a) study demonstrated that power- and intimacy-motivated perceivers used more elaborated complexity when they anticipated interacting with the targets in motive-congruent ways. And, in the present study, power- and intimacy-motivated perceivers in the Positive Arousal/ Congruent Information condition used more simple complexity because there was no reason to think carefully in order to attain motive satisfaction.

In sum, these four studies suggest that affect, that is, general mood as well as motive-specific affect is closely intertwined with the use of different types of cognitive complexity. I conclude, as many theorists (e.g., Fiske & Taylor, 1991; Forgas, 1992; McClelland, et al., 1989), have suggested, that more work that investigates the mutual influence of affect and cognition is needed to understand this important aspect of psychological

functioning. In particular, attention must be given to identifying the correspondence of motive-related affect and the complexity with which information is processed in order to understand how individuals meet their needs through this basic social perception process.

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APPENDIX A

EXPERIMENT MATERIALS

MICHIGAN STATE UNIVERSITY

Department of Psychology

DEPARTMENTAL RESEARCH CONSENT FORM

1. I have freely consented to take part in a scientific study being conducted
by:_____
under the supervision of: Joel Aronoff
Academic Titles: Professor of Psychology

The research will require that I write a short description of a personal experience and perform some social impression tasks that ask me to form impressions of others. Participation in this experiment will take approximately one hour.

2. The study has been explained to me and I understand the explanation that has been given and what my participation will involve.

3. I understand that I am free to discontinue my participation in the study at any time without penalty.

4. I understand that the results of the study will be treated in strict confidence and I will remain anonymous. Within these restrictions, results of the study will be made available to me at my request.

5. I understand that my participation in the study does not guarantee any beneficial results to me.

6. I understand that, at my request, I can receive additional explanation of the study after my participation is completed.

Signed:_____
Date:_____

EXERCISE IN IMAGINATION

Name_____ Sex___ Student#_____
Number_____
Phone(clearly)_____

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

An important personal asset is imagination. This test gives you an opportunity to use your imagination, to show how you can create ideas and situations by yourself. In other words, instead of presenting you with answers already made up, from which you have to pick one, it gives you the chance to show how you can think things on your own.

On the following pages, you are to make up and write out a brief, imaginative story for each of the six pictures that will be presented on the screen. You will have five minutes for each story. There is one page for each story (in any case, please do not write more than about 150 words per story.) To help you cover all the elements of a story plot in the time allowed, you will find these questions repeated at the top of each page:

1. What is happening? Who are the people?
2. What has led up to this situation? That is, what has happened in the past?
3. What is being thought: What is wanted? By whom?
4. What will happen? What will be done?

Please remember that the questions are only guides for your thinking: you need not answer each specifically. That is, your story should be continuous and not just a set of answers to these questions. There are no "right" or "wrong" stories. In fact, any kind of story is quite all right. You have a chance to show how quickly you can imagine and write a story on your own. Try to make your stories interesting and dramatic. Show that you have an understanding of people and can make up stories about human situations. Don't just describe the pictures, but write stories about them.

Each picture will be projected onto the screen for 20 seconds, then turn the page and write the story suggested to you by the picture. After 5 minutes, another picture will be projected onto the screen. Turn the page, and write the story suggested to you by the picture and so on for all six pictures. I will announce that it is time to move on before I show the next picture.

Picture # 1-6

1. What is happening? Who are the people?
2. What has led up to this situation? That is, what has happened in the past?
3. What is being thought: What is wanted? By whom?
4. What will happen? What will done?

Life Experiences Questionnaire

We are interested in studying the relationship between memory and emotion. Today we are interested in happiness. To study the relationship between memory and happiness, we would like you to recall a single positive and pleasant event in your life that caused you to feel very happy at the time it occurred. Use the rest of this sheet (and back if necessary) to write down the event as you now remember it. In particular, please describe how the event came about--as vividly as you can. In fact, before you begin writing, take a few minutes to try to re-experience this event as vividly as possible. Then, take about 10 minutes to write your description. (Your description will be confidential and anonymous.)

Life Experiences Questionnaire

We are interested in studying the relationship between memory and personal experiences. Today we are interested in common, everyday personal experiences. To study the relationship between memory and personal experiences, we would like you to recall the events that happened to you yesterday that seemed to be small, everyday events at the time they occurred. Use the rest of this sheet (and back if necessary) to write down the events as you now remember them. Before you begin writing, take a few minutes to think about these events. Then, take about 10 minutes to write your description. (Your description will be confidential and anonymous.)

Think about what you have seen of Eric and Kim. Think about the kind of job we have described. Since both people and jobs are complex and hard to pigeon-hole, they need to be thought of in relation to each other in different ways and on different levels. Take a moment or two to gather your thoughts and then decide who is most suitable for the job. What kinds of qualities and behaviors were shown on the videotape that lead you to believe that this person is the best for the job? Please carefully state your reasons for taking this position. Take about 10 minutes to write your impression.

PARTICIPANT INFORMATION SHEET

Instructions. It is helpful to us to know a little bit about your background and current psychological characteristics in order to understand more about the types of people who are participating in the study. Please answer each question below.

A. Age: _____ years

B. Sex: Male Female (circle one)

C. Class Level (circle one)

(1) Freshman (2) Sophomore (3) Junior (4) Senior (5) Other

D. List below are several descriptors of psychological qualities. Please indicate how much feel each term describes you right now. Do this by circling a number on the scale from 0 (not at all) to 9 (extremely much) that reflects how much each quality applies to you at this time. Please be completely honest; your responses are anonymous.

	not at all									extremely much
alert	0	1	2	3	4	5	6	7	8	9
distracted	0	1	2	3	4	5	6	7	8	9
calm	0	1	2	3	4	5	6	7	8	9
energized	0	1	2	3	4	5	6	7	8	9
depressed	0	1	2	3	4	5	6	7	8	9
joyful	0	1	2	3	4	5	6	7	8	9
assertive	0	1	2	3	4	5	6	7	8	9
anxious	0	1	2	3	4	5	6	7	8	9
happy	0	1	2	3	4	5	6	7	8	9
friendly	0	1	2	3	4	5	6	7	8	9
confused	0	1	2	3	4	5	6	7	8	9
irritated	0	1	2	3	4	5	6	7	8	9

Information to Participants

Currently, a great deal of research in psychology concerns social information processing. Researchers are studying the various ways in which we encode (or take in) stimuli from the environment. For instance, some experimenters study how well individuals remember certain events or how people store and retrieve new information. The experiment that you have just participated in is one such study.

Psychologists agree that differences in motivation and other types of social orientations can have a great impact on how we differentiate and categorize one person from another (as well as one situation from another). That is, a person's social orientation can have a great impact on how he or she perceives the environment. For example, a person with a high need for achievement might be better able to remember information related to a class project or some other achievement related task than a person who has different concerns.

We all know that we have different personalities and different "points of view" from others. In this experiment, we were especially interested in how people's general attitudes influence their views and first impressions of people and social situations. By asking you to first write imaginative stories and then form an impression of the people on the videotape we will be able to learn more about how information is categorized and how distinctions are made between people and social situations.

Thanks very much for participating in today's experiment. We will be happy to answer any questions that you might have at this time or you may speak with Barbara Woike in 424 Baker Hall regarding this study.

APPENDIX B

OUTLINE OF THE CATEGORIES OF COMPLEXITY CODING MANUAL

The Categories of Complexity

Barbara A. Woike

Differentiation processes

Simple differentiation.

Simple differentiation involves the naming or listing of attributes (or simple descriptors), called new aspects (NAs). The perceiver sees new aspects or aspects that are unrelated to any other aspect that the perceiver uses in the impression. New aspects may be further defined by a context. For instance, the perceiver may state, "Eric is a good leader." Or she may state, "Eric is a good leader in competitive activities." Both of these examples are scored as NAs. Sometimes the perceiver will use new aspects to describe things that are not directly related to the target(s). For instance, the perceiver may state, "Interviews are stressful." or "The question Kim asked was stupid." In these examples, the attributes "stressful" and "stupid" are scored as NAs.

Examples:

1. Eric seemed like a **very friendly person** [NA].

2. Kim showed much **enthusiasm** [NA] and **confidence throughout the interview** [NA]. She also **showed authority** [NA] and **proposed ideas when working out problems** [NA].

3. Kim seems like **bright** [NA] and **interesting** [NA] person and she **works well on cooperative tasks** [NA]. Eric is **very good at telling stories** [NA]. Their performance on the videotape was **exceptional** [NA].

4. Kim, although she **looked good** [NA], **did not show too much leadership ability** [NA].

Forms of elaborated differentiation.

1. Relative comparison (RC) refers to a comparison of relative standing between two subjects, objects or targets along a single dimension on which they are perceived as being different or unequal. Words such as "more," "better," "best," "less," or "too" may signify that two or more targets, subjects, or objects are being compared in this way.

Examples:

1. Kim seemed **a little more personal** [RC] than Eric during the interview.

2. I feel Eric is the **stronger** [RC] leader.

3. Kim is **too emotional** [RC].

4. Eric and Kim had **more than just superficial conservation**[RC].

2. Contrast (C) is a differentiated comparison that employs two opposing aspects. The contrasting aspects may be (a) on a bipolar dimension (e.g. dominant/submissive; active/passive), or (b) uni-dimensional opposites (e.g. masculine/feminine; interested in work/interested in social happenings), or (c) an aspect and its negation (interested in sports/not interested in sports; intellectual/not intellectual). Contrasts may be made (a) between targets, (b) within a single target, (c) between two situations or contexts, and (d) between target(s) and situation(s). Key phrases that may indicate that a contrast is being made include: but, although, whereas, while, and on the one hand.

Examples:

1. Kim seems **dominant** [1/2 C] but Eric **isn't dominant** [1/2 C] at all.

2. She not only **shared many of her own ideas** [1/2 C], but she was also a **good listener** [1/2 C].

3. I could see Eric **as a member of a group involved in discussion about themselves** [1/2 C] but I don't think he has **the initiative to be the leader** [1/2 C].

3. Restriction of meaning refers to a statement that restricts, makes more precise, or delimits another statement by confining attributes to a particular context, perspective, condition, or criterion.

Examples:

1. **From an employer's point of view** [RM], Eric seemed especially courteous.

2. **Since most people put their best foot forward during interviews** [RM], they didn't seem to have any negative qualities.

3. They talked about many things, but **the most important thing to consider is their ability to understand people** [RM].

4. **Judging from qualities displayed on the videotape** [RM], Kim seemed superior to Eric.

Integration processes

Simple integration.

Simple integration involves drawing a link with a previously mentioned related aspect called a supporting aspect (SA). A supporting aspect must be specifically connected to a previous aspect or structure. This can be accomplished in a number of similar ways. First, a supporting aspect may extend coverage to another context or object. For example, the perceiver may introduce a new aspect and then explain how the target might use it or possess it in a hypothetical context. This must be an additional context which extends meaning rather restricts it. Or, in some cases, the perceiver may introduce a new aspect and then explain how this attribute is related to another target or situation. In these cases, a supporting aspect is scored when a link (or relation) is drawn between that attribute and another attribute, situation, possibility, or example. Similarly, a supporting aspect may bring in other element(s) to connect with the target attribute. For example, the perceiver may introduce a new aspect, then show a relationship between that particular new aspect and other supporting aspects.

Examples:

1. First of all, she seems to be more **confident in herself** [NA]. **She tells of her good qualities as a softball player** [SA] **and the will to achieve a goal.** [SA].

2. Kim seemed more **mellow** [NA] than Eric. **In conflict situations, Kim is apt to stay cool-headed** [SA].

3. **The type of job he had at the hospital** [NA], I think **a safe assumption can be made that he also works well with people** [SA].

4. Eric also **shared his humanitarian side when he spoke about his job at the hospital** [NA] **by saying "the money's not great, but the people make it worthwhile** [SA]."

5. Kim is a **mature person** [NA] **therefore she will be able to take on responsibility** [SA].

6. Eric **excels in leadership situations** [NA], **especially those involving intermural sports** [SA].

Forms of elaborated integration.

1. Causal links (CLs) pertain to integration expressed through the perception of one subject, target or object influencing another. Four subcategories of integration are classified under this general category.

A. When the perceiver sees a dynamic relationship between the targets, he or she mentions them as (a) interacting with one another, (b) influencing one another, or (c) sharing a common experience that is clearly dynamic.

Examples:

1. **Eric was nervous to be around Kim** [CL].

2. **Kim made him feel more at ease** [CL].

3. **Kim shared some stories of her life because of Eric** [CL].

B. When the perceiver sees a dynamic relationship between the target(s) and perceiver, he or she mentions that the target's actions are in some way affecting him or her.

Examples:

1. **Eric's nervousness made me realize that Kim was best for the job** [CL].

2. **I laughed at Eric's story about the softball pitcher** [CL].

3. **When I heard Kim talking about her waitressing jobs I could really relate** [CL].

C. When the perceiver expresses the possibility of interaction with the target(s), the perceiver (a) mentions a hypothetical interaction between perceiver and target(s) or (b) compares his or her own attributes with those of the target(s) in some way.

Examples:

1. **If Eric were my research assistant, we probably would not get along too well** [CL].

2. **Kim seems like she would be fun to be with** [CL].

3. **My personality is similar to Kim's so I think Eric and I would be compatible** [CL].

D. Simple Link is expressed through the perception of influence that is not directly related to the target's influence. This can be expressed as: (a) one aspect influencing another aspect, or (b) a situation, context or object influencing a target(s)

Examples:

1. **Eric's wanting to lead made Kim act more submissively** [CL].

2. **The camera seemed to make them self-conscious** [CL].

3. **Kim's questions made Eric nervous** [CL].

2. Similarity (SM) refers to the perception of commonality between two targets. An aspect is used to illustrate a commonality between two or more subject(s), target(s), or object(s). The perceiver describes them as having some aspect in common.

Examples:

1. **Both Kim and Eric seemed hard-working** [SM].

2. **Neither Kim nor Eric has what it takes to be a leader** [SM].

3. **Working as a counselor involves the same skills as any other people-oriented job** [SM].

4. **Eric and Kim are like most college students in terms of their future plans** [SM].

3. Matching characteristics (MC) refers to integrating the information provided by the job description with the characteristics of the target(s). The perceiver explains how aspects of the target(s) are congruent or incongruent with the job characteristics. There are three kinds of matching. First, there are statements that describe the characteristics of the target and use them to expand on his or her hypothetical behavior in the job context. Second, there are statements that match the characteristics of the target and the characteristics of the job. And third, there are statements of the criteria of the job following an explanation of why or why not the target would be suitable.

Examples:

1. Eric seems like a born-leader [NA]. **I can see him running research groups** [MC].

2. Kim is more suitable because she is interesting [NA] and holds together conversation [NA] **which would be a plus working with people in a personnel position** [MC].

3. **For this job, I need someone who cares** [MC], Kim is the most [RC] considerate [NA].

4. Resolution of the impression (RS) refers to the use of a general theme that persists through the entire impression and serves to guide the process of deciding who is best for the job. The perceiver shows integrated thinking by using his or her choice to create a resolution of differentiated and integrated structures between and among the targets.

Examples:

1. **All this leads me to believe that Kim and Eric would handle their responsibilities in their own unique ways** [RS].

2. **Both Kim and Eric are talented people, but Kim clearly has the edge for a number of reasons related to social sensitivity** [RS].

3. **Eric is the only logical choice; he demonstrated his suitability in every situation he was presented with** [RS].

APPENDIX C

ADDITIONAL ANALYSES

Other Findings

Responses from the Life Experiences Questionnaire

A 2(Motive) X 2(Sex) X 2(Arousal Condition X 2(Information Condition) Analysis of Variance (ANOVA) on the power imagery scores, also revealed a marginal main effect for Motive, F (1,105) = 3.72, p <.06, in which Power-motivated individuals used more power imagery (M = .72) than did Intimacy-motivated individuals (M = .47). There was also a strong main effect for the Arousal condition, F (1,105) = 35.48, p <.0001, in which those in the Positive Arousal condition wrote experiences that contained more power imagery (M = .97) than did those in the Neutral Arousal condition (M = .21). There was also a main effect for Sex, F (1,105) = 4.58, p <.03, in which males used more power imagery (M = .68) than did females (M = .40). The main effects for Sex and Arousal Condition were qualified by a Sex X Arousal Condition interaction, F (1,105) = 6.29, p <.01. Examination of the means in Table 1a show that males in the Positive Arousal condition had more power imagery than females in the Positive Arousal Condition; and all individuals in the Positive Arousal Condition had more power imagery than those in the Neutral Arousal condition.

Table 1a

Power imagery as a function of sex and arousal condition.

	Arousal Condition	
	Positive	Neutral
Sex		
Males	1.20a	.15c
Females	.74b	.27c

Note: Noncommon subscripts indicate that means differ at $p < .05$.

The 2(Motive) X 2(Sex) X 2(Arousal Condition) X 2(Information Condition) ANOVA on the intimacy imagery scores, revealed a main effect for Motive, F (1, 105) = 5.39, p <.02, in which intimacy-motivated individuals wrote experiences that contained more intimacy imagery (M = 1.42) than did Power-motivated individuals, (M = .73). There was also a main effect for Arousal Condition, F (1,105) = 9.60, p <.002, in which individuals in the Positive Arousal condition used more intimacy imagery (M = 1.24) than did individuals in the Neutral Arousal condition, (M = .63). These main effects were qualified by the predicted Motive X Arousal Condition interaction, F (1, 105) = 6.88, p <.01, described on page 66. There was also a strong main effect for Sex, F (1,105) = 11.64, p <.0009, in which females had more intimacy imagery (M = 1.27) than did males (M = .60). This main effect was qualified by a Sex X Arousal Condition interaction, F (1,105) = 4.34, p <.04. Examination of the means in Table 2a showed that females in the Positive Arousal condition had more intimacy imagery than all others.

Table 2a

Intimacy imagery as a function of sex and arousal condition.

	Arousal Condition	
	Positive	Neutral
Sex		
Males	.71b	.49b
Females	1.77a	.78b

Note: Noncommon subscripts indicate that means differ at $p < .05$.