Linking Motives and Emotions: A Test of McClelland's Hypotheses

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McClelland (1985) hypothesized that motives and emotions are linked in specific ways, with each primary emotion relevant to only one motive. Two studies were generally supportive of the specific links hypothesized by McClelland. In Study 1, participants visualized success at satisfying each of three motives (achievement, affiliation-intimacy, and power); after each visualization, they reported their emotional state. As predicted, levels of interest and surprise were high after the achievement visualization but levels of excitement and focus were also high. Happiness and love were high after the affiliation-intimacy visualization (as predicted) but happiness was also high after the achievement visualization. Levels of anger, disgust, and confusion were highest after the power visualization. In Study 2, participants recalled instances of happiness, sadness, anger, and feeling challenged. Anger stories were most likely to be about power, sadness stories about affiliation-intimacy, and challenge stories about achievement. The most frequent happiness stories were about either affiliation-intimacy or achievement.

What role do emotions play in goal-setting and in motivated behavior? Most theorists agree that affect is closely linked to motives and motivated behavior; however, disagreement exists as to the nature of this relationship. Are individual emotions relevant to all motives or only to a certain subset?

Many emotion theorists believe that all (or nearly all) emotions are relevant to each motive. For example, Johnson-Laird and Oatley (1992) argue that the five primary emotions are involved in all goal-directed behavior in the following way:

> Happiness [is associated] with perception of improving progress towards a goal; sadness when a goal is lost; anger when a plan is blocked; fear when a goal conflict or a threat to self-preservation occurs; disgust with a perception of something to reject; and desire with a perception of something to approach. (p. 209)

In other words, we can feel happiness after sinking a difficult putt on the golf course (an achievement goal), winning an argument (a power goal), or spending time with a loved one (an affiliative goal). Similarly, we can also feel sad or angry in any motivational domain, provided that we have failed to reach a goal (sadness) or that our progress toward a goal is being blocked (anger).

In contrast to this view, motivation theorist David McClelland (1985; Weinberger & McClelland, 1990) believed that each primary emotion is paired with, and relevant to, one and only one motive. For example, he argued that anger is not equally likely to appear in every motivational domain or context; rather, it has a special link to power motivation.

McClelland's extensive body of work focused on implicit social motives—partly unconscious networks of cognitive/affective associations that drive or induce behavior. He made a clear conceptual and empirical distinction between implicit and self-attributed motives (McClelland, Koestner, & Weinberger, 1989). Implicit motives are typically measured by coding open-ended material for themes or images related to the motives of

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interest. Self-attributed motives, on the other hand, are measured by administering questionnaires that ask participants about their goals and values. The two measures of motives generally are not correlated. McClelland et al. (1989) argued that implicit motives may be both more primitive and more closely linked to affect and emotion than are self-attributed motives.

Of the 20 or so implicit motives originally described and studied by Murray (1938), 3 came to be seen as primary—power, affiliation-intimacy, and achievement motivation. Power motivation involves a concern with having impact on other people or on the world at large. Affiliation-intimacy motivation involves a concern with developing friendly and/or loving connections with others. Achievement motivation involves a concern for excellence, for doing one's best.

McClelland's writing on emotion stressed the fact that emotions are mediated by the limbic system (a phylogenetically old portion of the brain), in contrast with higher order cognitions, which are mediated by the neomammalian cortex and neocortex (McClelland, 1985, pp. 116-117). In that sense, then, emotions were seen by McClelland as being more primitive than cognitions. Although he acknowledged that affective experience can be "modified and modulated enormously by cognitive events taking place in the cortex of the brain" (McClelland, 1985, p. 117), his theory was concerned less with these more contextual modifications and modulations than with the (in his view) more primitive and universal underlying motive-emotion linkages.

McClelland believed that there is a small set of fundamental motives and a small set of fundamental emotions, with specific theoretically predicted linkages between the two. To determine the fundamental emotions, McClelland relied on the facial expression work of Ekman (1972) as well as other theories of primary emotions (e.g., Izard, 1979; Tomkins, 1962, 1963). He posited that there are six innate and universal emotions, three positive (interest-surprise, anger-excitement, and joy-happiness-pleasure) and three negative (fear, disgust, and sadness-distress) (McClelland, 1985, p. 125).[1] Each of the positive emotions was hypothesized to be associated with one of the three primary motives: interest-surprise with achievement motivation, anger-excitement with power motivation, and joy-happiness-pleasure with affiliation-intimacy motivation. McClelland also mentioned "feeling loved" and "loving" as emotions that might be linked with affiliation-intimacy (McClelland, 1985, p. 137).

The theoretical basis for these linkages derives from the assumption that "natural incentives" (such as being cuddled by a parent) will automatically give rise to specific affective states (such as happiness). These natural incentives become linked over time (via classical and operant conditioning) to more complex social stimuli and are the basis for the development of individual differences in motive dispositions. Thus, the linkages between motives and emotions in adults are assumed to derive from hard-wired linkages between specific incentives and affective reactions that have been present since infancy.

This theoretical framework also encompasses the negative emotions, but the specific hypothesized linkages between motives and negative emotions were not well elaborated by McClelland. He wrote only that the negative emotions may be associated with the avoidance motives (e.g., fear of failure, fear of rejection, fear of success, fear of power). Building on this short description, Winter (1996, pp. 652-657) reasoned that there should be both a positive and a negative emotion associated with each of the three primary motives. He speculated that sadness might be linked with affiliation-intimacy, disgust with achievement, and fear with power.

Although none of these hypotheses have been systematically tested (and McClelland refers to his classifications as "preliminary and tentative"; 1985, p. 139), supportive evidence for some of the links can be found in both the motivation and the emotion literatures. In particular, a number of studies suggest that a person's motive profile is associated with the more frequent experience of relevant emotions. Also, the thematic content of recalled emotion memories seems to depend, at least in part, on which emotion is being recalled. Results from these two lines of research are reviewed below.

LINKS BETWEEN MOTIVES AND AFFECTIVE EXPERIENCE

Power motivation. People high in power motivation are more likely to be angry, excited, and/or afraid. For example, men high in power motivation were more likely to mention being angry when recounting an autobiographical memory of an unpleasant experience (McAdams, 1982). People high in power motivation also show more activation of the sympathetic nervous system (McClelland, 1982)—more readiness for both "fight" (anger) and "flight" (fear) responses. Evidence from outside the motivation literature also suggests that power is connected to anger. In a study conducted by Averill (1982), people reported that their motives for expressing anger were often power related (e.g., to change or control someone's behavior, to gain revenge). Tiedens and colleagues also have found that anger is linked with high status in a power hierarchy (Tiedens, 2000; Tiedens, Ellsworth, & Mesquita, 2000).

Affiliation-intimacy motivation. People scoring high in intimacy motivation report higher levels of subjective well-being (McAdams & Bryant, 1987; Zeldow, Daugherty, & McAdams, 1988) and they smile and laugh more (McAdams, Jackson, & Kirshnit, 1984), suggesting that they may experience more happiness and joy. Further evidence comes from van Hoof (1972), who noted that smiling (a sign of happiness) is associated with friendliness (the hallmark of affiliation and affiliative relationships).

Achievement motivation. Data for the links between emotional experience and the achievement motive are sparse. However, when chance for success at a task is reasonable, people scoring high on achievement motivation show more persistence, suggesting that they may be able to sustain the emotion of interest when others cannot (McClelland & Koestner, 1992). Also, the development of achievement motivation is presumed to depend on exposure to stimuli that are just different enough to elicit surprise (McClelland, 1985). Finally, a recent meta-analysis of the educational literature (Schiefele, Krapp, & Winteler, 1992) found that interest in a particular subject predicted achievement (grades or test scores) in that subject, a result that is consistent with a link between interest and achievement motivation.

THEMATIC CONTENT OF MEMORIES OF EMOTIONAL EXPERIENCES

Recent work by Woike and colleagues is partially supportive of McClelland's hypothesized links between motives and emotions. In one study (Woike, Gershkovich, Piorkowski, & Polo, 1999, Study 2), participants recalled past experiences of happiness, pride, relief, anger, fear, and sadness; these stories were then coded for themes of agency (achievement and power) and communion (affiliation and intimacy). Woike et al.'s hypothesis was that for all emotions, the dominant theme of the memory would be congruent with the participant's motive profile; that is, no matter what the emotion, agentic individuals would write about agentic themes and communal individuals would write about communal themes. For some emotions (happiness, anger), this hypothesis was supported. For other emotions, however, it was not (e.g., both agentic and communal individuals were more likely to recall communal sadness memories). In addition, there were other indications in the data that some emotions might "pull" toward a particular motive theme. For example, although agentic people were more likely to write agentic than communal stories for both happiness and pride episodes, only 75% of the happiness stories were agentic, as compared to 94% of the pride stories. If motive theme for both types of emotion memory was determined solely by the individual's motive profile, we would expect percentages of agentic stories to be equally high for both happiness and pride. It instead appears that whereas an individual's motive profile does affect the motive theme of the memory reported, this motive theme is also partly determined by intrinsic links between certain motives and certain emotions.

A similar explanation helps us understand the results of an earlier study (Woike, 1994) in which participants wrote about either a happy or a neutral ("common, everyday") memory. Again, there was evidence that motive disposition partly determined motive theme of the memory—participants high in intimacy motivation wrote more "happy" stories with intimacy themes than did participants high in power motivation. On the other hand, there was also evidence for some of the particular linkages between motives and emotions that McClelland hypothesized. For example, power-motivated participants in the happy condition reported more anger and excitement than did intimacy-motivated participants in the happy condition, suggesting that there may be an intrinsic link between power motivation and anger/excitement.

Cross-cultural work on the antecedents of emotional experience also supports, at least in part, McClelland's pairings between emotions and motives. In an ambitious study involving nearly 800 participants in eight countries (Scherer, Wallbott, & Summerfield, 1986), college students were asked to recall recent episodes when they felt happiness, sadness, fear, and anger. The antecedents of these emotion episodes were sorted into a variety of categories (Summerfield & Green, 1986). Although the codes used do not correspond directly to the three motives included in McClelland's theory, a rough assessment of motive type can nevertheless be made. Nearly half of the happiness episodes (47%) and nearly two thirds (62%) of the sadness episodes were related to affiliation and intimacy. For fear, physical aggression (14% of episodes) was one of the most prevalent categories; affiliation-intimacy themes were present in only 7% of episodes. Although the classifications of the antecedents of anger were more difficult to categorize in terms of power, achievement, and affiliation-intimacy motives, it is probable that many of the incidents labeled as "failure of others" (to act in socially sanctioned ways) were power actions. Of the anger stories, 55% were classified under this heading; in contrast, "failure to reach goals" (an achievement category) accounted for only 6% of the episodes.

Finally, Shaver, Schwartz, Kirson, and O'Connor (1987) asked undergraduates to write detailed descriptions of either typical or personal experiences of fear, sadness, anger, love, and joy. For both joy and sadness

experiences, many of the emotion antecedents were related to affiliation-intimacy (e.g., death of a loved one, loss of a valued relationship, belonging, receiving affection). In contrast, anger descriptions emphasized power-related antecedents (physical or psychological threat, aggression, loss of power or status) and responses (shouting, cursing, complaining, threatening, physical attack). Fear descriptions also included components related to power (loss of control, threat of harm) as well as some components that would probably not be so classified (threat of social rejection, being in an unfamiliar situation).

OVERVIEW OF THE PRESENT STUDIES

Past work suggests, then, that there may be intrinsic links between certain motives and certain emotions. Most of the evidence to date, however, is either indirect or is derived from studies designed to test other theories (e.g., theories about autobiographical memory). In the studies described below, we provide the first direct and comprehensive tests of McClelland's hypotheses, and we do so using two distinct approaches. First, we test the hypothesis that a given motive is associated with only a subset of emotions. In Study 1, we asked participants to visualize successful power, achievement, and affiliation-intimacy experiences and (after each visualization) to report their emotional state(s). Most emotion theories would predict that happiness should result from each of these visualizations, albeit perhaps varying in intensity depending on the motive profile of the individual. In contrast, McClelland's theory predicts that different emotions will result from each visualization—anger and excitement from the power visualization, interest and surprise from the achievement visualization, and happiness and a feeling of loving and being loved from the affiliation-intimacy visualization.

We also test McClelland's hypotheses about motive-emotion linkages from the opposite direction; that is, we investigate whether a specific emotion is preferentially associated with only one motive. In Study 2, participants recalled times when they experienced particular emotions; these autobiographical stories were then coded for dominant motive theme. We predict that specific motive themes will be more prevalent when recalling specific emotions (e.g., most happiness stories will be about affiliation-intimacy and most anger stories will be about power) and that this will be true in spite of differences in participants' motive profiles.

STUDY 1

In Study 1, the experimenter led participants through a guided visualization in which they recalled a specific positive, successful episode related to each of three motives: power, achievement, and affiliation-intimacy. After each visualization, participants provided ratings of their emotions. Motive scores for each participant also were assessed.

Method

PARTICIPANTS

Participants were 35 women and 28 men who were enrolled in an introductory psychology course at a large state university. The total sample included 68 participants; however, 5 participants were excluded because they did not complete the second session of the study. Participants received partial course credit for their participation. Most participants (78%) were White; there were also 6% African American, 14% Asian American, and 2% Latino/Latina. The mean age was 18.84 (*SD* = 1.05); ages ranged from 18 to 22.

PROCEDURE

The study consisted of two separate 1-hour sessions involving small groups of participants (between 1 and 6). In the first session, implicit social motives were measured. In the second session, participants completed three separate visualization exercises (for achievement, affiliation-intimacy, and power); after each, they also provided ratings of their emotions. On both days, additional instruments were administered at the end of the session; those data are not presented here.

IMPLICIT SOCIAL MOTIVES

A research version of the Thematic Apperception Test (TAT) (Morgan & Murray, 1935) was used to measure implicit social motives. Participants wrote imaginative, fictional stories about picture cues. Five pictures were presented in the following order: ship's captain, two women in chemistry laboratory, couple by bridge, man at desk, and trapeze artists. Pictures are reproduced in Smith (1992, pp. 633-637).

Stories were scored for achievement, affiliation-intimacy, and power motivation using Winter's (1994) running text system. A detailed description of the development of the running text scoring system can be found in Winter (1991). Briefly, achievement motivation is scored whenever there is an indication of a standard of excellence. Five types of images score for achievement: (a) adjectives that positively evaluate performance; (b) goals or performances that are described in ways that suggest positive evaluation; (c) mention of winning or competing with others; (d) failure, doing badly, or lack of excellence, if negative affect or a concern to do better is expressed; and (e) unique accomplishment. Affiliation-intimacy motivation is scored whenever there is indication of establishing, maintaining, or restoring friendship or friendly relations. Specifically, the following four types of images score: (a) expression of positive,

friendly, or intimate feelings toward others; (b) sadness or other negative feeling about separation or disruption of a friendly relationship, or wanting to restore it; (c) affiliative companionate activities such as parties or friendly small talk; and (d) friendly nurturant acts such as consoling or sympathetic concern. Power motivation is scored whenever there is an indication of impact, control, or influence. There are six scoring categories: (a) strong, forceful actions that inherently have impact on other people or the world at large; (b) control or regulation; (c) attempts to influence, persuade, convince, make or prove a point, or argue; (d) giving help, advice, or support that is not explicitly solicited; (e) impressing others or the world at large, or mention of fame, prestige, or reputation; and (f) any strong (positive or negative) emotional reaction in one person or group to the action of another person or group.

Winter's running text system is a codification and simplification of the original TAT scoring systems for intimacy (McAdams, 1980), affiliation (Heyns, Veroff, & Atkinson, 1958), achievement (McClelland, Atkinson, Clark, & Lowell, 1953), and power (Winter, 1973). It can be used on any open-ended material that is not formulaic or purely factual, including TAT stories and "running text" such as speeches or interviews. Because the running text scoring criteria for affiliation motivation incorporates elements of both the older affiliation system and McAdams's (1980) system for scoring intimacy motivation, Winter refers to this motive as "affiliation-intimacy"; we follow that convention in this article. Correlations between running text motive scores and motive scores obtained by using the original scoring systems are on the order of .60 to .70 (Winter, 1991). One of the advantages of the running text system is that it is an integrated scoring system that allows all three motives to be scored at once, without loss of reliability.

All scoring was done by the first author, who has previously demonstrated a category agreement of .90 with expert-scored materials, for all three motives. Stories for the first TAT picture were scored first, followed by stories for the second TAT picture, and so forth. For each story, scoring began with a different randomly chosen participant and continued in numerical order until all protocols were scored. Stories were labeled with a code number; the coder was unaware of any other information about the participants. To correct for verbal fluency of participants, scores for each of the three motives were expressed as motive images per 1,000 words.

VISUALIZATION EXERCISE

Participants completed three separate visualization exercises. For each one, the experimenter first asked the participants to think about a particular experience, either one related to achievement, affiliation and intimacy, or power. The experimenter then read the following instructions (cf. Rusting & Nolen-Hoeksema, 1998, p. 796):

> For the next few minutes, try to re-experience the memory you've retrieved as vividly as you can. Picture the event happening to you all over again. Picture in your "mind's eye" the surroundings as clearly as possible. See the people or objects; hear the sounds; experience the events happening to you. Think the thoughts you actually thought in that situation. Feel the same feelings you felt then. Let yourself react as if you were actually there right now.

Then the experimenter paused for 1 minute to allow the participants to experience the memory fully. The participants were then instructed to turn the page and report the emotions they were feeling at that moment.

All participants performed their visualizations in the same order: power, achievement, affiliation-intimacy. For the power visualization, participants were instructed to "think about a time when you were able to persuade someone to do something, or to convince someone of something (to bring them around to your point of view)." For the achievement visualization, they were instructed to "think about a time when you succeeded at a difficult task. Some examples of this might be doing very well on an academic test or assignment, or giving a stellar performance in an athletic or theatrical context." Finally, for the affiliation-intimacy visualization, participants were instructed to "think about a time when you were relaxing with friends, either one friend or several, participating in an enjoyable activity, or just hanging out together."

EMOTION RATINGS

Following each visualization, participants reported on 37 emotions—"how much of each feeling you are experiencing right now." About half of these emotion words were taken from Ketelaar (1994); the rest were written for the present study. Participants gave their responses using a 7-point scale ranging from 1 (*not at all*) to 4 (*moderate amount*) to 7 (*extremely much*). (See Table 1 for a complete list of emotions.)

From this list, scales were constructed to represent each of the emotions discussed by McClelland: anger, excitement, interest, surprise, loved/loving, happiness, sadness, disgust, and fear. In addition, two other emotion scales were constructed: confusion and focus. Decisions about scale composition were based mostly on theoretical and conceptual distinctions; however, a series of exploratory and confirmatory factor analyses were performed to aid in this process. Adjectives that did not fit well with any of the scales were dropped from further

TABLE 1: Cronbach's Alpha for Emotions Experienced During Guided Visualizations, Study 1 ($N = 63$)

	Visualization		
	Achievement	*Affiliation-Intimacy*	*Power*
Interest (interested, riveted, bored)	.47	.54	.58
Surprise (astonished, surprised)	.73	.79	.48
Loved/loving (loved, loving)	.75	.86	.84
Happiness (joyful, cheerful, delighted, elated, happy, pleased)	.90	.92	.90
Anger (angry, annoyed, grouchy)	.53	.90	.70
Excitement (calm, excited, tranquil, exhilarated)	.75	.44	.57
Disgust (disgust, repulsed)	.80	.93	.84
Sadness (gloomy, sad)	.73	.74	.81
Fear (afraid, scared, fearful)	.88	.89	.79
Confusion (distracted, muddled)	.60	.55	.38
Focus (focused, in the zone)	.59	.62	.56

NOTE: Six emotions were not included in any scale: sluggish, alienated, tired, serene, distressed, and offended.

TABLE 2: Means and Standard Deviations for Emotions Experienced During Guided Visualizations, Study 1 ($N = 63$)

	Guided Visualization		
	Achievement	*Affiliation-Intimacy*	*Power*
Interest	4.30_{a} (1.22)	4.63_{a} (1.22)	3.65_{b} (1.28)
Surprise	3.08_{a} (1.61)	2.13_{b} (1.53)	2.13_{b} (1.23)
Loved/loving	4.17_{a} (1.83)	5.07_{b} (1.66)	3.34_{c} (1.96)
Happiness	5.27_{a} (1.50)	5.06_{a} (1.41)	3.60_{b} (1.43)
Anger	1.41_{a} (0.70)	1.40_{a} (0.89)	2.36_{b} (1.26)
Excitement	4.98_{a} (1.38)	3.85_{b} (1.15)	3.64_{b} (1.19)
Disgust	1.21_{a} (0.66)	$1.29_{a, b}$ (0.86)	1.70_{b} (1.30)
Sadness	1.50_{a} (0.93)	$1.67_{a, b}$ (1.16)	2.06_{b} (1.44)
Fear	1.50_{a} (0.94)	1.38_{a} (0.88)	1.69_{a} (1.04)
Confusion	1.75_{a} (1.05)	1.90_{a} (1.02)	2.54_{b} (1.24)
Focus	4.82_{a} (1.60)	3.80_{b} (1.61)	3.45_{b} (1.43)

NOTE: Within each row, subscripts that differ from each other indicate a difference of $p < .01$. Standard deviations are in parentheses. Scores can range from 1 to 7, with higher numbers indicating greater emotion intensity or amount.

consideration. These included *alienated*, *offended*, *distressed*, *sluggish*, *serene*, and *tired*.[2]

Coefficient alphas were computed for each of the 11 emotions, separately for each of the three visualizations (see Table 1). The average (across visualization) alphas ranged from .51 for confusion to .91 for happiness; the overall average was .71.

Results and Discussion

Implicit motive scores were approximately normally distributed for all three motives. The mean for achievement motivation was 8.58 images/1,000 words (SD = 5.02), the mean for affiliation-intimacy motivation was 8.67 (SD = 4.05), and the mean for power motivation was 8.79 (SD = 4.58).

Means and standard deviations for each of the emotions are reported in Table 2 and graphed in Figure 1. Paired t tests were performed to compare the levels of each emotion. To protect against Type I errors, a more conservative alpha (p = .01) was used. In general, McClelland's predictions received full or partial support, with the exception of the prediction that excitement would be associated with power motivation. However, there were also emotions not mentioned by McClelland (focus and confusion) that appear to be related to one or more motives.

McCLELLAND'S HYPOTHESES

Power. High levels of anger were experienced during the power visualization, significantly more than during either the affiliation-intimacy or achievement visualizations, which did not differ statistically from each other. Thus, McClelland's hypotheses about anger being especially associated with power motivation received full support. His hypothesis about excitement, however, received no support. Participants reported the most excitement after their achievement visualization. Levels of excitement were significantly lower during the power and affiliation-intimacy visualizations; reports of excitement did not differ for these two visualizations.

Affiliation-intimacy. Happiness and feeling loved and loving were hypothesized to be associated with the motive of affiliation-intimacy. The hypothesis about loved/loving was supported. Levels for this emotion were highest during the affiliation-intimacy visualization and were significantly higher than during both the power and the achievement visualizations. However, the amount of feeling loved and loving was not equal during these latter two visualizations. Instead, the amount of this emotion was greater during the achievement visualization. The hypothesis about happiness received partial support. Higher levels of this emotion were experienced during the affiliation-intimacy visualization than during the power visualization. However, high levels of happiness also were experienced during the achievement visualization.

Achievement. Interest and surprise are the two emotions hypothesized to be associated with achievement motivation. The data for surprise fully support McClelland's theory. Levels of surprise were highest during the achievement visualization and significantly lower during both the power and affiliation-intimacy visualizations. The data for interest, however, only partially support the hypothesis. Levels of interest were high during the achievement visualization and were statistically higher than during the power visualization. However,

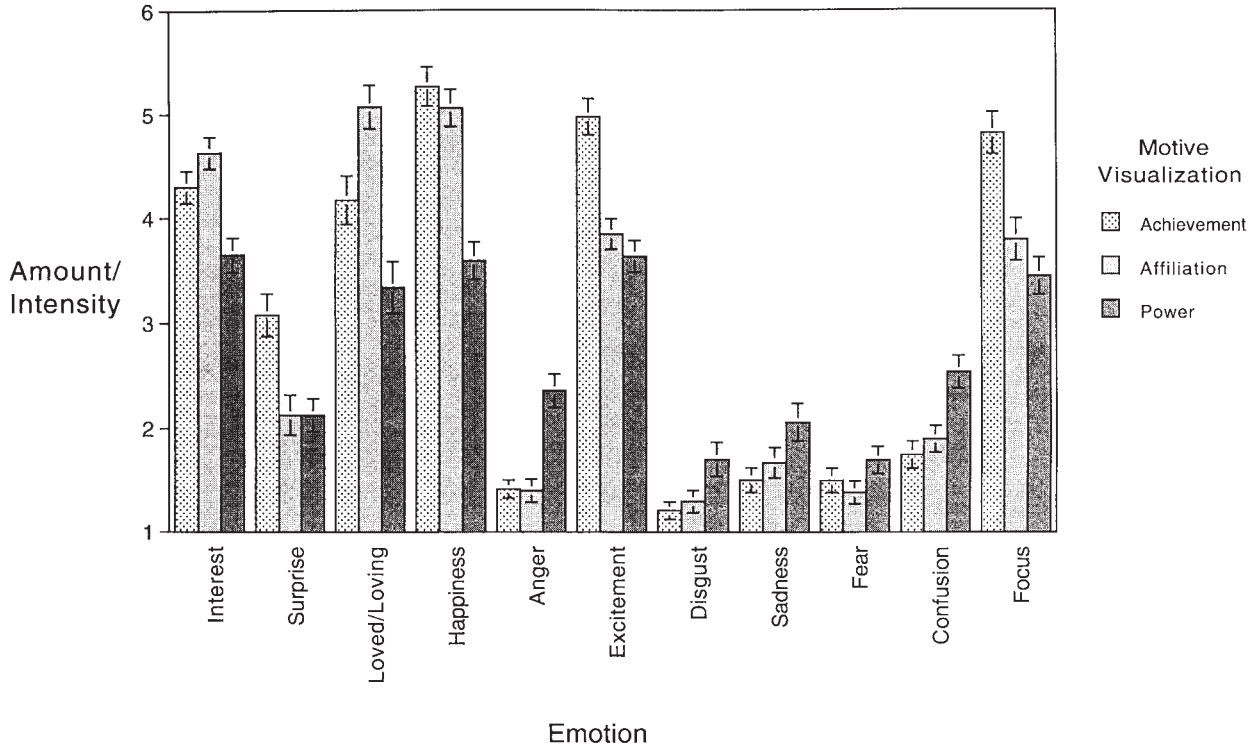

Figure 1 Self-reported amount/intensity of emotion experienced by participant after guided visualization imagining each of three motives in Study 1.

NOTE: Scores could range from 1 (*not at all*) to 4 (*moderate amount*) to 7 (*extremely much*). Error bars represent the standard error of the mean.

levels of interest were equally high during the affiliation-intimacy visualization.

OTHER EMOTIONS

Confusion was significantly higher during the power visualization than during the achievement and affiliation-intimacy visualizations, which did not differ from each other. Disgust was also higher during the power visualization than during the achievement visualization but not (according to our conservative alpha of .01) higher than during the affiliation-intimacy visualization. Fear did not differ across the three visualizations. A large effect was seen for focus. Levels of this emotion were high during the achievement visualization, higher than during either the affiliation-intimacy or the power visualizations, which did not differ from each other.

EFFECTS OF MOTIVE DISPOSITION

One might argue that it is only success at a goal relevant to an individual's motives that would elicit happiness (e.g., see Brunstein, Schultheiss, & Grässmann, 1998; Woike, 1994). In this case, we would expect individuals with strong achievement motives to be especially happy during the achievement visualization, individuals with strong affiliation-intimacy motives during the affiliation-intimacy visualization, and power-motivated individuals during the power visualization. However, we found no correlation between motive score and happiness for any of the three visualizations (achievement: $r = -.05$, $p > .70$; affiliation-intimacy: $r = .19$, $p = .13$; power: $r = .05$, $p > .71$).[3] Thus, in this sample, individual differences in motives had at best a weak effect on the intensity of emotional experience.

CONCLUSIONS

The findings from Study 1 indicate that success at a motive is likely to elicit an emotional experience similar to that postulated by McClelland, with each motive being linked to specific emotions. In particular, success at a power goal was associated with anger, confusion, and disgust; success at an affiliation-intimacy goal was associated with interest, happiness, and feeling loved and loving; and success at an achievement goal was associated with interest, surprise, happiness, excitement, and a sense of being focused. In other words, succeeding at a particular motive was associated with experiencing particular emotions.

In Study 2, we examined these linkages from the other direction; that is, we investigated whether each specific emotion is preferentially associated with one motive (e.g., happiness with affiliation-intimacy, anger with power). To answer this question, we asked partici-

pants to write about memories of experiencing happiness, sadness, anger, and a sense of being challenged. These autobiographical memories were then coded for dominant motivational theme: power, achievement, or affiliation-intimacy. An additional goal of Study 2 was to test the generalizability of the findings from Study 1. In the original study, we instructed participants to visualize success at a very specific motivational goal (e.g., for power motivation, winning an argument). Because participants in Study 2 generated their own autobiographical memories, we were able to rule out the possibility that the findings from Study 1 were an artifact related to the specific motive-relevant goals we asked participants to visualize.

STUDY 2

Method

PARTICIPANTS

Fifty-six undergraduates (26 women and 30 men) who were enrolled in an introductory psychology course at a large state university participated in this study for course credit. The total sample included 60 participants; however, 4 participants did not respond to any of the emotion recall questions. Participants ranged in age from 17 to 22; the mean age was 18.9. Information about ethnicity was not collected; however, the psychology subject pool at this university is predominantly White and middle or upper class.

PROCEDURE

As part of a larger study (five 1-hour sessions), participants wrote about a time when they experienced four specific emotions: happiness, sadness, anger, and feeling challenged. Implicit social motives were measured using a research version of the TAT.

IMPLICIT SOCIAL MOTIVES

As in Study 1, implicit social motives were assessed by administering a five-picture research version of the TAT. The second author and a second coder scored all stories, discussing and resolving their disagreements. This procedure has been shown to yield category agreement of more than .85 with expert scoring for all three motives.

RECALL OF AUTOBIOGRAPHICAL EMOTION MEMORIES

Story-writing occurred during the second session, and the story order was the same for all participants: (a) happy story, (b) sad story, (c) several unrelated measures, (d) angry story, and (e) challenged story. Instructions for each story were as follows:

> In the space below, please write about an occurrence that has made you feel [HAPPY/SAD/ANGRY/CHALLENGED]. This could be an event in your personal life or in the world around you. There are no right or wrong answers. For this event, try to explain what exactly made you feel the emotion. Was there a particular aspect of the event that was particularly important in drawing out the emotion? How did the episode begin, unfold, and end? The event you write about need not be a recent one, but try to pick one that you remember fairly well.

Stories were coded for the dominant overall theme—achievement (standard of excellence), affiliation-intimacy (love, friendship, or friendly relations with others), power (impact, control, or influence), or none of the above (e.g., daily hassles). Two coders independently scored all stories. Cohen's Kappa was .66 ($p < .0005$). Overall interrater agreement (number of agreements divided by the total number of stories) was .75. Interrater agreement figures for each motive category also were computed by using the formula: (2 × number of agreements for Category i)/(Number of times coder A scored Category i + Number of times coder B scored Category i). Interrater agreement figures were .85 for achievement, .82 for affiliation-intimacy, and .70 for power. Disagreements were resolved by discussion. Sample stories from each of the four categories are presented in Table 3.

RESULTS AND DISCUSSION

Scores for affiliation-intimacy and power motives were approximately normally distributed; the distribution for achievement motivation had a slight positive skew (skewness = .667), with 14 out of 56 participants having a score of zero for achievement motivation. The mean achievement motivation score was 4.11 images/1,000 words (SD = 3.69), the mean for affiliation-intimacy motivation was 6.96 (SD = 3.12), and the mean for power motivation was 6.29 (SD = 3.04).

Frequencies of dominant theme for each type of emotion story are reported in Table 4 and graphed in Figure 2. One-way chi-square tests were performed to determine whether the distribution of stories differed significantly from what might be expected by chance (i.e., a uniform distribution with all three motives being represented equally often). For each story type, two chi-squares were computed, one including the "none of the above" dominant theme category and one excluding it. In all cases, substantive conclusions from the two analyses were the same. The chi-squares reported below are from the analyses in which the "none of the above" category is excluded.

In general, McClelland's predictions were supported. However, as in Study 1, at least one emotion mentioned by McClelland was related to more than one motive, and one emotion not mentioned by McClelland (challenged) was associated with one of the motives (achievement).

TABLE 3: Sample Stories From Study 2

Achievement	I didn't get a very good grade on my computer science midterm. This made me mad because it was mainly due to stupid mistakes that I had made. [angry story]
	In a hockey game a few years ago, my team was down 3-4. It was a State Tournament game against the number one team. Although the challenge was against the team as a whole, I also felt a personal challenge to come back. It was one of the best moments of my life when I scored the next two goals and we went on to win 6-4. [challenged story]
Affiliation-intimacy	An event that made me feel happy was last time I went home to see my friends and family. I was very excited to go because I miss them. I hadn't seen anyone from home in a while and I was happy just to be in my house at home again. A dorm is not comparable to home. [happy story]
	A sad occurrence is the death of my grandfather earlier this year. It is painful to lose someone you love because you have grown accustomed to needing that person. The pain has not stopped and I become quite sad at times when I am reminded of him. [sad story]
Power	We were getting off the bus and approaching the dorm door. My roommate was fumbling her keys as she tried to unlock the door. This really obnoxious guy was yelling at her to hurry up and said "Leave it to a chick to do a man's job." I was really angry! He doesn't even know my roommate and is always rude and obnoxious. We went back and forth arguing and insulting all the way down the hall after we got in the door. (I started it.) [angry story]
	I convinced a teacher who gave me a B+ that I deserved an A–. I was able to persuade her to my side through deft tactics which I have developed over the years. She changed the grade and this made me happy. [happy story]
Other	Coming to this university probably has made me very happy. I realized that I would be a thousand times more independent. I would no longer have the burden of my parents looming over me telling me what to do and when to do it. And I could explore different areas of myself and meet a whole new set of friends. The happiness definitely came from the independence, knowing that I was on my own and my own responsibility. [happy story]
	For the past 7 months, every time I went back home for vacation my car broke down. I don't know why my mom doesn't sell it and buy a new one. First of all, I'm the only one in the family who can drive. Second of all, my car is back home in the parking lot just sitting there. My vacations are partially ruined when I go back home. I have to spend at least 2 days getting the car fixed. This really makes me angry. [angry story]

McCLELLAND'S HYPOTHESES

Power. McClelland's prediction that anger and power motivation would be closely associated was supported by the data. Most anger stories (55%) had a power theme; achievement themes (12% of anger stories) and affiliation-intimacy themes (14%) were much less frequent. This overall difference was significant, $\chi^2(2) = 22.58$, $p = .00001$.

Affiliation-intimacy. For happiness, the most frequent dominant theme was affiliation-intimacy (45% of the stories); however, an almost equal number of stories focused on achievement (32%). Only 9% of the stories had a power theme. This overall difference was significant, $\chi^2(2) = 12.88$, $p = .002$. For sadness, the results were even more striking. The majority of participants (75%) wrote stories with affiliation or intimacy themes. Only 7% wrote about achievement, and only 4% wrote about power. This overall difference was significant, $\chi^2(2) = 61.56$, $p < .00001$.

Achievement. Participants did not write stories about the two emotions that McClelland asserts are related to achievement (surprise and interest); thus, tests of his hypotheses about these emotions were not possible in this study.

OTHER EMOTIONS

The emotion "challenged" was not mentioned by McClelland as being associated with any of the three major motives; however, the data from Study 2 show a clear association with achievement motivation. The majority of challenged stories (70%) had an achievement theme. Only a few stories had themes of either affiliation-intimacy (6%) or power (6%). This overall difference was significant, $\chi^2(2) = 49.94$, $p < .00001$.

TABLE 4: Frequencies and Percentages for Motive Themes Present in Emotion Memories, Study 2

	Emotion Memory			
	Happy (N = 56)	*Sad* (N = 55)	*Angry* (N = 51)	*Challenged* (N = 50)
Achievement	18 (32%)	4 (7%)	6 (12%)	35 (70%)
Affiliation-intimacy	25 (45%)	41 (75%)	7 (14%)	3 (6%)
Power	5 (9%)	2 (4%)	28 (55%)	3 (6%)
None/other	8 (14%)	8 (15%)	10 (20%)	9 (18%)
χ^2 including none/other	18.14**	73.36**	25.00**	55.92**
χ^2 excluding none/other	12.88*	61.56**	22.58**	49.94**

*$p < .01$. **$p < .001$.

EFFECTS OF MOTIVE DISPOSITION

Woike's results (1994; Woike et al., 1999) suggest that motive profile is one determinant of the type of autobiographical memory that will be recalled in a study such as this. Scoring high on achievement motivation, for example, would make the recall of an achievement episode

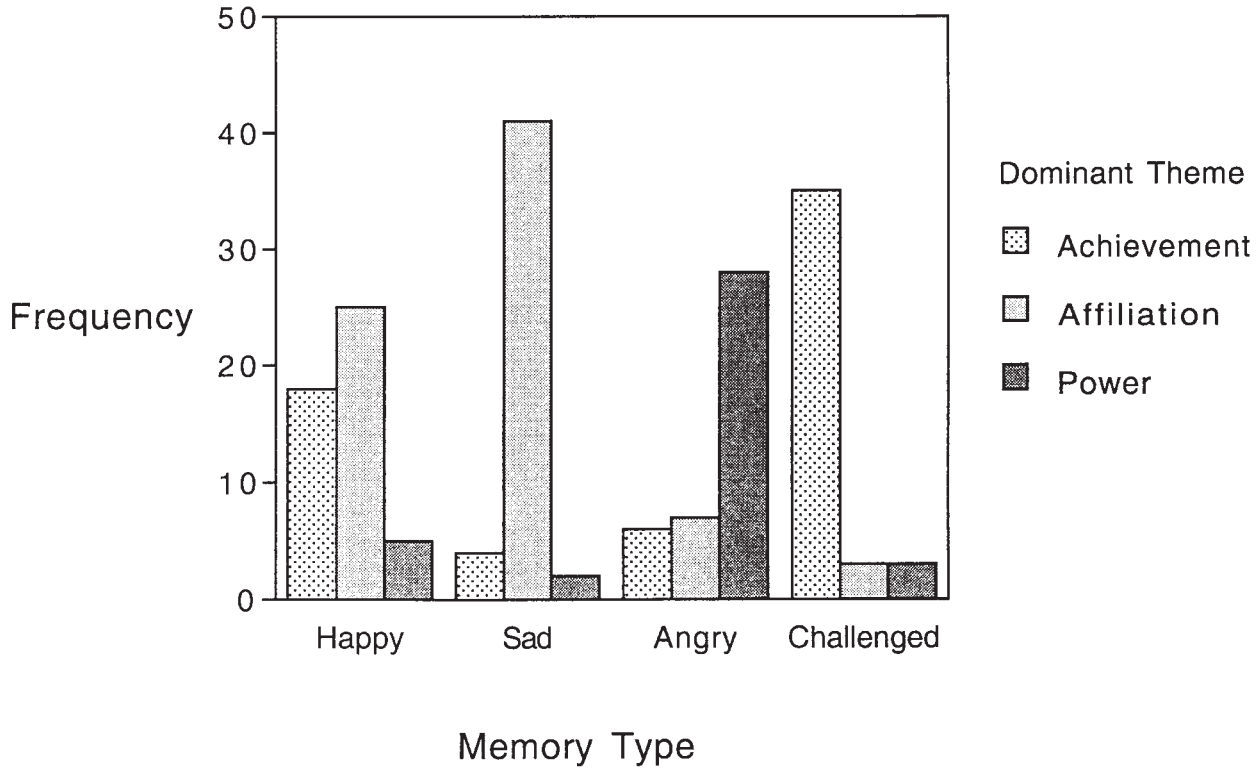

Figure 2 Number of stories with a dominant theme of achievement, affiliation-intimacy, or power for each type of emotion memory, Study 2.

more likely, no matter which emotion is being recalled. Or, to put it another way, people who recalled achievement episodes would be expected to score higher on achievement motivation. To test this hypothesis, we compared average motive scores (for all three motives) for participants who wrote achievement, affiliation-intimacy, and power stories; we did this for each of the four emotion conditions. With one exception, all of these one-way ANOVAs were nonsignificant (all Fs < 1.40, all ps > .25). The exception was the level of affiliation-intimacy motivation across story type in the happiness condition, overall $F(2, 45) = 2.45$, $p < .10$. A post hoc LSD test revealed that levels of affiliation-intimacy motivation were higher in the group of people who recalled affiliation-intimacy stories ($M = 7.45$, $SD = 2.88$) than those who recalled achievement stories ($M = 5.45$, $SD = 3.24$) but not higher than those who recalled power stories ($M = 7.07$, $SD = 2.03$). As in Study 1, then, the effect of motive disposition was at best weak. It is notable that, to the extent this effect was present, it was seen (in both studies) only with the affiliation-intimacy motive.

GENERAL DISCUSSION

Results from the two studies were, in general, supportive of McClelland's hypotheses. Specific motives were linked to specific emotions, and most of these linkages were as predicted by theory. The strongest result was the link between power and anger. In both studies, anger was associated with power, but not with affiliation-intimacy or achievement. This was especially notable in Study 1 because participants were visualizing a time when they were able to persuade someone to adopt their point of view, that is, they were visualizing success at a power goal. Contrary to theories that postulate that anger should arise only when a goal is blocked, this emotion apparently also can be elicited when a goal is achieved—as long as the goal is related to power.

Results for happiness and sadness were also strong, although not unequivocal. In both studies, there was evidence that happiness was associated more with affiliation-intimacy than with power; however, happiness also was associated with achievement. Sadness, however, appeared to be linked more exclusively with affiliation-intimacy, at least in Study 2. This latter result is consistent with data reported by Woike et al. (1999).

Several of McClelland's other hypotheses also received support. The emotion of love was associated with affiliation-intimacy, surprise was linked with achievement, and (to some extent) interest also was linked with achievement. With only one emotion was McClelland's hypothesis completely disconfirmed—excitement was associated with achievement rather than with power.

Winter's (1996) prediction that sadness would be linked to affiliation-intimacy motivation was strongly supported in Study 2, but his predictions about disgust and fear were not borne out in Study 1. Disgust was linked with power rather than with achievement, and fear was not preferentially related to any of the three motives. Note, however, that scores on the negative emotions were generally quite low (due, no doubt, to the fact that participants were visualizing success). The lack of results for fear may be due to a floor effect. If so, greater variance on emotion scores might allow a relationship between power motivation and fear to emerge (although the differences between visualizations were not significant, the sample mean for power was higher than the other two sample means). To better test the relationship between motives and negative emotions, it would be necessary to conduct another study in which participants visualized failure or being blocked in their attempt to achieve a motive-related goal.

Several emotions that were not mentioned by McClelland were found to be differentially associated with one motive. In the first study, confusion was associated with power and a feeling of focus was associated with achievement; in the second study, feeling challenged was associated with achievement. Although it is generally agreed that these three emotions are not basic or primary (and perhaps are not even emotions), the existence of a relationship between these affective states and achievement motivation suggests a more complex picture than that sketched by McClelland.

HAPPINESS, SADNESS, AND AFFILIATION-INTIMACY MOTIVATION

Sadness appeared to be more closely linked with affiliation-intimacy motivation than was happiness, both in this study and in previous research (Summerfield & Green, 1986; Woike et al., 1999). Why would this be? One possibility is that participants focused on one particularly potent form of sadness—grief. Although it is possible to experience grief for the loss of something other than an affiliative bond (e.g., for a job, one's health, or an aspect of one's identity), the prototypical grief experience is, almost by definition, linked with affiliation-intimacy. In fact, some theorists (e.g., Averill, 1968) speculate that grief evolved to strengthen communal bonds. In our sample, nearly half of the affiliative sadness stories were about the death of a relative, close friend, or pet. The fact that these grief episodes were highly salient (and thus easily recalled) does not imply that all types of sadness memories are affiliative in nature. To better understand the role of sadness in the power and achievement domains, it would be useful to conduct additional studies similar to Study 1, but with instructions to imagine failure or loss rather than success. This procedure might elicit a wider variety of sadness memories.

Rather than asking why sadness was related only to affiliation-intimacy, one could also ask why happiness was related to more than one motive. Happiness was predicted to be associated more closely with affiliation-intimacy than with either achievement or power, yet in both Study 1 and Study 2, happiness was linked equally with both affiliation-intimacy and achievement. Perhaps one reason for this is that the subtypes of happiness being recalled were more varied than were the subtypes of sadness. It may be that happiness is a broader and more diverse concept than is sadness, or perhaps some of the most intense (and therefore most salient) types of happiness (e.g., the joy of finding a life partner or of giving birth) have not yet been experienced by these young adults. Note, though, that happiness was not related equally to all three motives. In neither study was there any evidence of a link between power motivation and happiness.

POWER MOTIVATION AND NEGATIVE AFFECT

In his writing, McClelland focused mostly on the theoretical links between motives and the positive emotions. Because he said relatively little about the negative emotions, our predictions concerning negative affect were necessarily more tentative. We did expect, however, that there would be specific one-to-one linkages between motives and negative emotions. To a large extent, that is what we found. In particular, sadness was strongly linked with affiliation-intimacy in Study 2 and anger was linked with power in both studies. However, there also appeared to be a connection between power motivation and negative affect more generally, with power motivation linked not only to anger (in both studies) but also to disgust, sadness, and confusion (in Study 1). It may be that the price of working to achieve power goals is an overall increase in the amount of negative affect experienced.

Freud (1940/1949) hinted at this connection between power motivation and negative emotional states when he wrote, "the question arises whether the satisfaction of purely destructive instinctual impulses can be felt as pleasure" (p. 29). But why wouldn't power make us happy? To answer this question, it may be helpful to speculate on plausible evolutionary functions of power motivation. Biochemical evidence (McClelland, Maddocks, & McAdams, 1985; McClelland, Ross, & Patel, 1985) suggests that power motivation is associated with the fight/flight/fright neurochemical system. Perhaps it evolved as a means whereby we can respond more quickly and appropriately to enemies and other threats. Given that the neural systems that mediate "wanting" are different than those that mediate "liking" (Berridge &

Robinson, 1995), pleasure may be irrelevant to power goals. As long as the "wanting" system is activated, we will strive toward power and therefore have some protection against injury or annihilation from powerful others. Whether power brings us pleasure may be beside the point. On the other hand, if much of one's life becomes focused on meeting power goals, the lack of positive emotion might be keenly felt. One solution to this dearth of positive affect might be to try to fuse power with something that is intrinsically pleasurable (e.g., sex; Zurbriggen, 2000). Indeed, fusing power with the libido seems to be a path chosen by many powerful athletes, business leaders, and politicians.

RELATIONSHIP TO THEORIES OF MOTIVES AND AUTOBIOGRAPHICAL MEMORY

Previous studies of autobiographical memory for emotion episodes (Woike, 1994; Woike et al., 1999) found strong effects of motive disposition on the thematic content of the memories recalled. In contrast, in the present studies, only weak indications of such an effect were seen. Why was there a discrepancy in findings?

One important distinction between the studies reported here and those reported by Woike is that she selected only people who were "pure" agentic or "pure" communal; that is, participants in her studies scored high on achievement and power motivation *and* scored low on intimacy motivation (or vice versa). In contrast, our studies involved people with a full range of scores on all motives, including participants who were high (or low) on both power and affiliation-intimacy. It is possible that the effect of motive disposition on memory theme is present only in people with strong (and unconflicted) motives. In such cases, the strength of the motive disposition may overwhelm intrinsic connections between emotions and motives. For those with weak, competing, or balanced motives, however, the intrinsic links between emotions and motives become visible.

Another way to think about the interplay between motive dispositions and intrinsic motive-emotion links is to imagine them as causal forces that operate simultaneously, codetermining the final response that a person will make. In other words, which emotion memory a person chooses to write about is determined by (among other things) dispositional power motivation, dispositional affiliation-intimacy motivation, dispositional achievement motivation, as well as by the type of motive preferentially associated with that emotion. For example, when people are asked to recall a sadness memory, one causal force determining the particular memory they will generate is the intrinsic link between sadness and affiliation-intimacy. All other things being equal, participants should be more likely to write sadness stories that are about affiliation and intimacy. But there are additional causal forces at work. In particular, people with a high level of a given motive are more likely to write stories about that motive. Therefore, if a person has a high enough score on power motivation, the effect of dispositional power motivation would be stronger than the effect of the intrinsic link between sadness and affiliation-intimacy. In that case, we would expect the person to write about a power-themed sadness memory rather than one related to affiliation and intimacy. If a person was high in both power and affiliation-intimacy motives, those two causal forces might balance out. In that case, when the person's dispositional motives are not pulling them strongly in one direction or another, the intrinsic link between sadness and affiliation-intimacy could come into play. We would then expect the person to write a sadness story that had an affiliation-intimacy theme. Note that although we have sketched an additive model here, it is also possible that the two types of effect (motive dispositions and intrinsic motive-emotion links) interact statistically.

One additional point of interest is that, to the extent that any effect of motive disposition was seen in these data, the effect involved the confluence of affiliation-intimacy motivation and happiness. Perhaps happiness, to a greater extent than other emotions, is diverse and applicable across various domains rather than being so tightly linked to one particular motive.[4] If so, there would then be room for motive disposition to play a stronger role. Further research on this topic is necessary for a fuller understanding of this phenomenon. To be as informative as possible, such research would need a fairly large sample size to ensure that all possible combinations of motives are well represented.

RELATIONSHIP TO OTHER THEORIES OF EMOTION

Although the studies reported here were not designed to directly contrast McClelland's theories with those of emotion researchers like Johnson-Laird and Oatley (1992), we believe they can be helpful in evaluating such theories. The data reported here suggest that a strong view of the domain-generality of emotions—that every emotion can be elicited with equal ease in every motivational domain—is inaccurate. We found that emotions were more likely to be linked with some motives than with others, that these linkages were consistent in two studies employing different methodologies, and that they were mostly consistent with McClelland's theoretical predictions. On the other hand, there was also evidence of some amount of domain generality; for example, the finding that achievement and affiliation-intimacy visualizations elicited similar amounts of happiness. A complete account of the links between motives and emotions will probably need to include both

McClelland's idea of fundamental links between the two as well as additional theoretical elements (e.g., appraisals) that acknowledge the importance of context.

Our results are consistent with recent theorizing by Clark, Pataki, and Carver (1996), in which they argue that emotions serve specific self-presentation goals. Happiness is used for ingratiation, getting people to like you (an affiliative goal); sadness is used for supplication, getting people to help you (also an affiliative goal, although with a power component); and anger is used for intimidation, getting people to do what you want (a clear power goal). Our results are also consistent with recent data from Tiedens (2001) linking anger and power in the political and organizational domains, in which participants perceived angry people as more deserving of power and status than those displaying other negative affects.

PRACTICAL IMPLICATIONS

In addition to the theoretical implications discussed above, there are also a number of practical implications that derive from McClelland's theory and our results. For example, the link between power motivation and anger suggests potential techniques for anger management therapy. Typical advice to people who are too easily angered is for them to try to minimize exposure to situations in which they will feel frustrated by the actions of others. We found, however, that anger was elevated even when participants visualized success at a power goal. This suggests that people who are trying to reduce their feelings of anger might want to minimize exposure to all power situations, even those where they are likely to come out on top. The fact that happiness was associated with success at achievement and affiliation-intimacy goals but not with success at a power goal also suggests the potential usefulness of minimizing power struggles, even if the odds of winning the struggle are high.

Achievement motivation was associated with both focus and with feeling challenged. These results suggest that coaches, teachers, and managers (and athletes, students, and workers) might obtain the highest levels of achievement by maximizing the feeling of challenge; this can best be achieved by setting goals that are difficult but not impossible. To the extent that a feeling of focus overlaps with Csikszentmihalyi's (1996, 1997) concept of "flow," our results suggest that this transcendent state may be more accessible within the achievement domain than when pursuing power or affiliation-intimacy goals.

LIMITATIONS OF THE STUDIES

In both studies, we relied on participant self-reports rather than measuring emotion more directly. In future work, it would be useful to employ alternate methodologies to measure the emotional state of the participants; for example, by taking physiological readings or by coding facial expressions. This would be especially important if motives have a different relationship with emotional knowledge (which, one can argue, is what self-reports measure) than they do with emotional responses.

Both samples were young, middle-class, mostly White college students. Although the distribution of motive scores would not be expected to differ substantially from other populations, specific motive-related goals pursued by this population might differ from those pursued by other populations. More important, there may be situation-specific aspects of how goals are typically pursued that may have affected the findings. For example, among college students, achievement urges are often pursued and satisfied through formal or informal participation in sports activities. To the extent that a sports team is also a group of friends, achievement and affiliation-intimacy may be merged in a way that might not occur if other achievement goals were pursued (e.g., two employees trying to produce the best sales presentation possible). Thus, some specific findings might not generalize to other populations. The overall finding, though—that emotions are linked with specific motives—seems robust.

Another limitation of the first study was that participants only visualized success. Different emotions might arise after visualizing failure, being denied the opportunity to pursue a motive, or even just the experience of "doing" rather than "completing" a motive (e.g., visualizing running a race rather than crossing the finish line). In particular, visualizations of experiences of failure or goal blockage should help us better understand the relationship between negative emotions and motives.

CONCLUSION

In general, McClelland's theory about the linkages between motives and emotions was supported. Specific emotions were preferentially linked to specific motives; support for a link between power motivation and anger was particularly strong. Some details of the theory appear to need refinement or revision, however. In particular, happiness may be linked to a broader set of motives than just those related to affiliation and intimacy. Further work will allow our understanding of motive-emotion linkages to be refined and expanded.

NOTES

1. Note that there is not universal agreement on whether all of these constitute bona fide emotions (e.g., Ortony & Turner, 1990, argue that surprise and interest are not emotions).

2. Sluggish and tired formed a separate "tired" factor, which was judged not to be an emotion and so was not analyzed further. Both offended and distressed loaded on the anger factor but were judged to be conceptually distinct from anger and were not included in that

scale. Substantive results are the same, however, if these two items are included in the anger scale.

3. If happiness and sadness are combined into one scale, the correlation of this scale with affiliation-intimacy motivation in the affiliation visualization becomes marginally significant, $r = .22$, $p = .08$.

4. McClelland (1985) specifically articulated the potential wider applicability of happiness when he wrote "obviously some kind of pleasure can derive from any of the positive incentives [i.e., variety or having impact as well as contact with others], as the research on infant smiling demonstrates" (p. 126).

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