Goal Imagery: Bridging the Gap Between Implicit Motives and Explicit Goals

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ABSTRACT Two studies examined the role of goal imagery (i.e., the perception-like mental representation of the pursuit and attainment of a goal) in establishing congruence between individuals' implicit motives and their inclination to pursue explicit goals assigned to them. Study 1 found that after a goal-imagery exercise, implicit needs for power and affiliation predicted participants' affective arousal and their commitment to a social-interaction goal furnished with power- and affiliation-related incentives. In Study 2, implicit power motivation predicted the level of performance participants achieved in pursuit of a competitive performance goal after a goal-imagery exercise. Without goal imagery, however, participants' motivation to pursue an explicit goal was independent of their implicit motive dispositions in both studies.

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Theoretical Issues

During the past 2 decades, evidence in favor of multiple-system approaches to human information processing has emerged from research on learning and memory (e.g., Paivio, 1986, 1991; Schacter, 1987; Tulving, 1985), attention and perception (e.g., Greenwald, Klinger, & Schuh, 1995; Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977), creativity and problem solving (e.g., Dorfman, Shames, & Kihlstrom, 1996), social cognition (e.g., Bargh, 1989; Hill, Lewicki, Czyzewska, & Boss, 1989; Tversky & Kahneman, 1983), psychopathology (e.g., Brewin, 1989; Brewin, Dalgleish, & Joseph, 1996), and psychotherapy (e.g., Bucci, 1985, 1989).

Based on findings from these diverse areas of research, Epstein (1994) proposed a two-system model of human information processing, the so-called cognitive-experiential self-theory (CEST), that distinguishes between a rational system and an experiential system (for earlier versions of CEST, see Epstein, 1973, 1990, 1991). The rational system operates in the medium of language and abstract symbols, processes information analytically, and guides thought as well as action on the basis of logical reasoning. It is slow but flexible, closely tied to conscious experience, and capable of future-oriented planning and long-term delay of action. The experiential system, in contrast, processes information in a holistic, associationistic fashion. In a given situation, it guides thought and action on the basis of ongoing feelings and prior affective experiences in similar situations. By encoding percepts into images and narratives, the experiential system stays close to the concrete perceptual reality of experience. It processes information rapidly, with an emphasis on immediate action, resides largely outside of consciousness, and is not easily subjected to change. As Epstein (1994) pointed out, although both systems work in parallel and can process information independently, they are capable of communicating with each other by, for instance, the translation of the symbolically encoded content of the rational system into the imagistic format of the experiential system (for related arguments, see Bucci, 1985; Paivio, 1986).

Epstein's (1994) conceptualization of two different modes of human information processing is paralleled by recent advances in motivation theory. Most notably, McClelland and his colleagues (McClelland, Koestner, & Weinberger, 1989; Weinberger & McClelland, 1990) proposed a two-system approach to motivated behavior by drawing a

contrast between an emotion-driven implicit system and a cognition-based explicit system of motivation.

The implicit motivational system is constituted by a relatively small number of nonconscious motives. McClelland (1987) defines motives as recurrent concerns for affectively charged incentives such as having impact on others (the power motive; Winter, 1973), establishing and maintaining positive relationships with others (the affiliation and intimacy motives; Atkinson, Heyns, & Veroff, 1958; McAdams & Powers, 1981), and doing something better (the achievement motive; McClelland, Atkinson, Clark, & Lowell, 1953). Motives are based on emotional learning, and they develop early in life, primarily by nonverbal means, although they may change with regard to their strength and the maturity of their behavioral expression during the life course (McAdams, 1988; McClelland, 1958, 1987; McClelland & Pilon, 1983). They are aroused by environmental cues that signal the availability of a rewarding emotion and seek access to behavior while aroused (McClelland, 1987). Because a person's motives are most directly expressed in his or her free-ranging thoughts and fantasies, the strength of a motive can be assessed by analyzing the contents of fantasy stories individuals produce in response to picture cues akin to Murray's (1943) Thematic Apperception Test (TAT) (see Smith, 1992). Thus, with regard to their emotional, nonconscious, and enduring nature and their expression in fantasy as well as more immediate forms of action, motives feature several of the major characteristics of the experiential system according to CEST (Epstein, 1994).

The explicit motivational system, on the other hand, comprises the multitude of an individual's consciously accessible goals as well as the cognitive strategies and plans he or she chooses to acomplish them. Goals are defined as internal representations of desired future states that guide individuals' thoughts and actions and furnish their lives with meaning and purpose (Emmons, 1996; Klinger, 1977). Developmentally, the ability to delay gratification and the acquisition of language to negotiate goals with one's social environment have been described as important prerequisites for the mental representation of goals and thus for their influence on thought and action (Mischel, Cantor, & Feldman, 1996; Zivin, 1979). Goals vary widely with regard to their content and their formal characteristics, reflecting their unique capability to organize and energize individuals' behaviors flexibly vis-à-vis the changing demands

and affordances of their social environments. Hence, goals bear many of the hallmarks of the rational system as described by Epstein.

Individuals may differ, however, with regard to the extent to which they try to attain a goal and persist in goal-directed action in the face of difficulties. In goal theory, individual differences in people's sense of determination to achieve a goal are accounted for by the concept of goal commitment (Klinger, 1977; Locke & Latham, 1990; Novacek & Lazarus, 1990). Individuals who are highly committed to their goals go to great lengths to attain them and are willing to step up their efforts should the realization of their goals be jeopardized by difficulties and failures (Brunstein & Gollwitzer, 1996). Conversely, individuals with low commitment to a particular goal are not likely to strive for its realization and, if forced to pursue it nonetheless, will not invest much effort into it (Locke & Latham, 1990). The degree of individuals' goal commitment can be assessed either by asking them how important and worthwhile they consider a given goal and how hard they will strive to attain it or, alternatively, by measuring individuals' actual efforts to realize the goal (Locke & Latham, 1990).

Recent studies have indicated that there is only slight (Emmons & McAdams, 1991) or no correspondence between peoples' motives and their goals (Brunstein, Lautenschlager, Nawroth, Pöhlmann, & Schultheiss, 1995; King, 1995). These results are in accordance with McClelland's conceptualization of two independent motivational systems, whereas they lend less support to the notion that goals represent instantiations of an individual's implicit motives (e.g., Emmons & King, 1992; Nuttin, 1984; Wurf & Markus, 1991). For instance, King (1995) measured individuals' needs for power, affiliation, and achievement with a TAT-type procedure and classified the goals reported by participants with regard to how much they were concerned with power, affiliation, and achievement. For each of these three thematic content areas, goal measures and motive measures turned out to be statistically independent of each other. This means that, for example, a participant could have a strong implicit power motive as reflected in the TAT without necessarily showing a high concern with power in his or her self-articulated goals. In addition, Brunstein et al. (1995) recently reported findings suggesting that individuals who are preoccupied with goals that do not fit their motives (e.g., think of a person who is high in the implicit need for affiliation, but preoccupied with power- and achievement-related goals) experience lower levels of emotional well-being than individuals who

primarily focus on the pursuit of motive-congruent goals (e.g., think of a person who is high in the implicit need for affiliation and focuses on the pursuit of communal goals). These findings complement earlier reports of the independence of implicit and explicit measures of motivation (e.g., deCharms, Morrison, Reitman, & McClelland, 1958; McClelland, 1980) and corroborate the view advocated by McClelland et al. (1989) that discrepancies between the two motivational systems may be associated with decreased psychological well-being.

Extending these findings, the aim of our present research was to find a way to increase motive–goal congruence. Because an individual's goals can be changed and may thus be easier to adapt to his or her more enduring motive dispositions than vice versa, we reasoned that a fruitful way of enhancing congruence between motives and goals would be for a person to test the extent to which a potential goal would fit his or her motives before deciding on whether to pursue it. For this purpose, the goal would have to be translated from its native representational format within the rational system into the representational format of the experiential system. We propose that goal imagery, the perception-like mental representation of the pursuit and attainment of a goal, is ideally suited for such translative functions because, similar to the actual experience of goal-striving, it induces the processing of goal-related information by the experiential system.

Evidence for the efficacy of imagery to activate the experiential system comes from several areas of research. As already mentioned, one basic feature of the experiential system is that it processes perceptual information directly, without translation into symbols and language in the manner of the rational system. Recent advances in cognitive neuroscience indicate that imagery involves the same brain areas dedicated to the processing of incoming perceptual information which, in some cases, can even lead to competition between imagery and perception for processing resources (Farah, 1985, 1988; Farah, Peronnet, Gonon, & Giard, 1988; Kosslyn, 1994; Kosslyn et al., 1993; Zatorre & Halpern, 1993). Moreover, as research on the psychophysiological and expressive indicators of specific emotions—such as fear, anger, sadness, or joy—demonstrates, imagining an affectively charged situation can be as emotionally arousing as actually experiencing it (Qualls, 1982–1983; Richardson, 1984; Schwartz, Weinberger, & Singer, 1981; Sirota & Schwartz, 1982). Research pertaining more directly to differences between rational and experiential styles of information processing on emotional states

demonstrates that thinking about an emotionally significant situation in concrete, imagelike ways produces more brain activity characteristic of emotional processing and more pronounced mood changes than thinking about it in an abstract, analytical manner (Kuiken & Matthews, 1986–1987; Strack, Schwarz, & Gschneidinger, 1985, Study 3). Finally, because of its direct link to emotions, psychotherapists consider imagery to be an important tool for the analysis and modification of thought and behavior (e.g., Drobes & Lang, 1995; Leuner, 1986; Shorr, 1983).

Taking these properties of imagery into account in the present research, we propose that engaging in goal imagery helps a person realize what it would mean to strive for a specific goal by experiencing how emotionally satisfying its pursuit and attainment would be for him or her. This experience, in turn, should help the person decide whether to commit himself or herself to the goal or not, depending on whether or not he or she was emotionally aroused by the goal imagery. We furthermore suggest that the emotional impact of incentives encountered during goal imagery will depend on the strength of a person's motives. Thus, imagery related to a power goal, for instance, should only be arousing for individuals with a high power motive, whereas it should lead to little affective arousal in individuals low in power. Hence, the high power person should be more likely to commit himself or herself to the goal and invest effort into its attainment than the low power person. As suggested by the lack of correlation between motives and goals in other studies, though, individuals' commitment to pursue a goal should not be influenced by the incentives inherent in the goal if they do not actively engage in goal imagery.

To test the validity of these propositions, we carried out two studies in which we assigned power-related goals to participants. In both studies, participants' motives were assessed using a TAT-type procedure and goal imagery was varied experimentally, with participants either exploring the incentives of the assigned goal imaginatively or not. Study 1 focused on the interplay between goal imagery and motives with respect to participants' self-reported goal commitment and affective arousal, that is, measures supposed to tap their rational system and experiential system, respectively. Study 2 was carried out in order to determine the joint effect of goal imagery and the power motive on actual effort and performance during goal striving.

Study 1

In our first study, we assigned participants the goal of counseling another person in a directive manner. In the choice of this task we were guided by the assumption that a situation characterized by dynamic social interactions would provide better material for rich and lifelike goal imagery than, for instance, the completion of a paper-and-pencil task. However, social interactions may contain incentives for more than one motive and the nature of their motivating effects might thus be harder to control. To deal with this potential problem, we decided to choose a task that would contain power as well as affiliation incentives but would match the needs only of individuals high in both motives. Directive counseling meets these requirements because it centers around helping another person, and helping is a common denominator of the needs for power and affiliation. Helping someone can be an instrumental activity to establish friendly social contact with another person as well as for exerting some form of benign influence on her or him. However, directive counseling also requires the individual to keep the upper hand and not agree with everything the other person says, as well as to curb his or her desire to exert more direct forms of social influence in favor of a form of influence that takes the needs and problems of the other person into consideration. Therefore, we reasoned that this counseling goal would not appeal to individuals high either *only* in affiliation or *only* in power because it would pose demands incompatible with either motive alone. For individuals high both in power and affiliation, however, this goal should be ideally suited to catalyze and express their desire for both social impact and social contact. Hence, we hypothesized that only individuals high in both power and affiliation would indicate high levels of goal commitment and affective arousal after imagining the pursuit and attainment of the assigned goal. Without goal imagery, on the other hand, we expected individuals' motives to have no significant effects on goal commitment and affective arousal.

METHOD

Participants and procedure. Twenty-five women and twenty-five men participated voluntarily in the study. The sample consisted of students and workers of German descent living in Erlangen, Germany. Because of their familiarity with the types of instruments used in this study, psychology students were not

recruited as participants. The average age of the sample was 24.96 (*SD* = 3.34) years.

Participants were tested one at a time in a session that lasted 1 hour. At the beginning of the session, a female experimenter first administered to the respondents a questionnaire measuring affective arousal and then a TAT measure of motive dispositions. She went on to explain that the purpose of the study was to compare laymen with professional therapists with regard to the effectiveness of directive counseling. Participants were told that they were to meet another participant who was willing to discuss a problem that currently troubled him or her. The experimenter instructed the participants to take the role of a therapist and to counsel the other participant—their "client"—in a directive manner, that is, to interrupt and advise the client whenever necessary, to keep the client focused on the problem, and not to get themselves entangled in the maladaptive and obviously counterproductive ways in which the client handled his or her problem. As prior research had demonstrated—so the experimenter told the participants—such directive counseling strategies helped people cope with their problems efficiently. Afterwards, participants in the imagery group listened to a tape-recorded goal imagery exercise and subsequently worked on an imagery check list. Control-group participants skipped both the exercise and the checklist. Finally, all participants were administered the affective arousal measure a second time and filled out a goal commitment questionnaire. The experimenter then declared the experiment completed and thoroughly debriefed the participants about the study.

Design. Following the recommendations made by West, Aiken, and Krull (1996), we used an aptitude-treatment-interaction (ATI) design in the present study to test the effect of goal imagery and motive dispositions on goal commitment and affective arousal. The factor *experimental condition* (goal imagery vs. control) determined whether or not students participated in a goal imagery exercise. Students were randomly assigned to the imagery or the control condition. Participants' scores on TAT-based measures of the power motive and the affiliation motive were entered as continuous independent variables in subsequent statistical analyses.

Motive measures. To assess participants' needs for power and affiliation, a TAT-type picture-story test was administered to participants using instructions described in Winter (1992). The TAT consisted of six picture cues that have been used for the simultaneous assessment of the needs for power and affiliation in a number of previous studies (McClelland, 1987; cf. Smith, Feld, & Franz, 1992, pp. 521–522). In sequence, the pictures showed (1) a man sitting at an office desk, (2) two female scientists in a laboratory, (3) a ship captain talking with another man, (4) two people sitting on a park bench, (5) a man and a woman on a trapeze, and (6) a man, a woman, and a guitar player in a nightclub. With the

exception of the last picture, which was taken from McClelland (1975), all pictures are contained in Smith (1992).

The resulting TAT protocols were content-coded for power and affiliation themes according to Winter's (1991) *Manual for Scoring Motive Imagery in Running Text*, which allows for scoring of various kinds of motive imagery at once, and which has been used in previous research on implicit motives (e.g., King, 1995; Peterson & Stewart, 1993). According to this manual, the power motive is scored whenever a concern with strong forceful actions, fame and prestige, or the elicitation of emotional reactions in others shows up in a character's wishes or actions. The affiliation motive is scored whenever a character expresses in wishes or action a concern with establishing, maintaining, or restoring friendly, harmonious relationships with others. Protocols were independently scored by two trained scorers who had demonstrated percentage agreement of 85% or above with calibration materials prescored by experts. Percentage agreements between scorers of participants' TAT protocols calculated according to the formula provided by Winter (1991: 2 × number of agreements between scorers / [scorer A's scores + scorer B's scores]) were 81% for power and 86% for affiliation. Scoring disagreements were resolved by discussion, and scores from these joint sessions were used as the participants' final scores. Mean scores were 4.08 for power ($SD = 2.04$) and 4.74 for affiliation ($SD = 2.37$). Participants' motive scores were corrected by regression for protocol length ($M = 503$ words, $SD = 131$) and converted to z scores (cf. Smith, Feld, & Franz, 1992).

Experimental condition. Participants in the imagery condition were asked to listen via headphones to a 12-minute-long prerecorded imagery script featuring a male speaker while sitting comfortably in a reclining chair. The imagery script started with a short relaxation exercise in the course of which participants were instructed to close their eyes and keep them closed until the end of the guided imagery. The imagery script then proceeded to a description of the possible course of a conversation with a client whose gender is never identified. Participants were asked to imagine how their client would start to talk about an unsolved but vexing problem and soon get lost in irrelevant details. The participant repeatedly interrupts his or her client, tells him or her to get to the point or gives him or her advice about how to handle the problem in a more productive way. At first, the client rejects the advice, but after some more persuasion by the participant the client accepts the participant's counsel as being for her or his own best. Finally, the participant ends the session by summarizing the client's problem and his or her own proposal for its resolution, which the client accepts gratefully.

In the development of the imagery script, we took great care to use concrete, specific language and to furnish the script with many sensory details to make it easy for participants to imagine the described scenario as vividly as possible.

Furthermore, to heighten participants' awareness of their own emotional reactions to the imagined interaction and to involve them more actively in the construction of the imagined scenes, we included questions at several points within the imagery script focusing on their affective reactions to the client's behavior (e.g., "How do you feel about this?" "What is your immediate reaction to this?"). These questions occurred whenever, according to the script, the participant tried to direct or advise the client and the client in turn yielded or did not yield to these attempts at influence. Finally, to provide participants with the time necessary to revise their mental picture in accordance with the script, each sentence in the prerecorded imagery script was followed by a pause of 10 seconds and each question by a pause of 20 seconds.

Afterwards, imagery-group participants were asked to indicate on a checklist which of six sense modalities (*visual, auditory, kinaesthetic, cutaneous, olfactory*, or *gustatory*) had been involved in their imagery while listening to the tape. On average, participants' mental pictures during the guided imagery were anchored in 2.68 sense modalities ($SD = 0.90$; $Min = 1$, $Max = 5$). Thus, we saw these results as evidence of participants' active involvement in the mental construction of the imagery scenario.

Goal commitment. To assess participants' commitment to the assigned goal of counseling their client in a directive manner, we devised a goal commitment measure capturing participants' sense of *affective involvement* ("I am thrilled by the prospect of counseling my client in a directive manner" and "I dislike having to counsel my client in a directive manner" [negatively keyed]), *goal importance* ("I find it important to counsel my client in a directive manner" and "Frankly, I do not care whether I counsel my client in a directive manner or not" [negatively keyed]), and *intended effort investment* ("I will try as hard as I can to counsel my client in a directive manner" and "I will not try very hard to counsel my client in a directive manner" [negatively keyed]). These facets of goal commitment have been found in recent research to be central aspects of the commitment construct (cf. Allen & Meyer, 1990; Locke & Latham, 1990; Tubbs & Dahl, 1991). Items were presented in random order. Participants' responses to the items were measured by 7-point scales with endpoints labeled (1) *not true* and (7) *true*.

A principal components analysis of the six items yielded one factor with an eigenvalue greater than 1, accounting for 67.4% of variance. After recoding the negatively keyed items, the internal consistency of the goal commitment scale was high (Cronbach's $\alpha = .90$). Thus, we created a total goal-commitment measure by summing the responses over all six items ($M = 31.38$, $SD = 7.99$) and converted participants' scores on this scale to *z*-scores for further analyses.

Affective arousal measures. Participants' affective arousal was measured both at the beginning of the experimental session (T1) and after the implementation

of the experimental condition (T2). The measure consisted of eight items adapted from the UWIST Mood Adjective Check List (Matthews, Jones, & Chamberlain, 1990). Four items were taken from the *Energetic Arousal* scale (*active, energetic, passive,* and *sluggish*) and four from the *Tense Arousal* scale (*nervous, jittery, calm,* and *relaxed*). Items were presented in random order. Respondents were asked to rate the applicability of each adjective to their present mood on a 5-point scale with endpoints labeled (1) *definitely not* and (5) *definitely*. After recoding the negatively keyed items (*passive, sluggish, calm,* and *relaxed*), both arousal measures were found to have satisfactory internal consistency at T1 and T2 (Cronbach's α ranging from .75 to .87). Thus, we computed scores for energetic arousal and tense arousal separately for each measurement by summing the responses over the four items constituting each scale. Energetic arousal (T1: $M = 14.24$, $SD = 3.52$; T2: $M = 13.72$, $SD = 3.27$) and tense arousal (T1: $M = 10.50$, $SD = 3.17$; T2: $M = 10.66$, $SD = 3.62$) were uncorrelated both at T1, $r = -.03$, and at T2, $r = -.02$, ps $> .10$. T1–T2 correlations were .61 for energetic arousal and .50 for tense arousal, ps $< .001$. Because prior research has demonstrated that power arousal involves the activation of the sympathetic nervous system and is reflected by increases in energetic as well as tense arousal (McClelland, 1982; Steele, 1973), we finally obtained a measure of general arousal by combining scores on both arousal scales (cf. Matthews, 1985; Matthews et al., 1990). Internal consistency for this composite general arousal scale was acceptable both for T1 ($\alpha = .65$) and for T2 ($\alpha = .72$).

RESULTS

Neither age nor sex or education of participants had significant impact on the results reported below.

Goal commitment. We carried out a hierarchical regression analysis with goal commitment as the dependent variable and the experimental condition, power motive, and affiliation motive as well as their multiplicative interaction terms as predictors. As can be seen in Table 1, the effect of the Experimental Condition × Power Motive × Affiliation Motive interaction on participants' goal commitment was significant. To elucidate the nature of this three-way interaction, we computed hierarchical regression analyses with the power motive and the affiliation motive entered as Block 1 and their multiplicative interaction term as Block 2 separately for the imagery group and the control group. In the imagery group, none of the first-order predictors became significant in Block 1 (ps $> .10$), but the interaction term (Block 2) reached statistical significance, $b = .62$, $t(21) = 2.11$, $p < .05$. In the control group, the affiliation

Table 1
Hierarchical Regression of Goal Commitment on Experimental Condition, Power Motive, and Affiliation Motive (Study 1)

Block	Variable	ΔR^2	*df*	ΔF	*b*[a]
1	First-order predictors	.180	3, 46	3.37*	
	Experimental condition[b]				–.25
	Power motive				.29
	Affiliation motive				.34*
2	Two-way interactions	.021	3, 43	0.37	
	Condition × Power				.11
	Condition × Affiliation				.11
	Power × Affiliation				.18
3	Condition × Power × Affiliation	.114	1, 42	6.97*	.44*
	Cumulative R^2	.315	7, 42	2.76*	

[a] *b* is the regression coefficient in the final regression equation. [b] Effects coding was used for representing experimental condition in the regression analysis.
* $p < .05$.

motive was the only significant unique predictor of goal commitment in Block 1, $b = .29$, semipartial $r = .39$, $t(22) = 2.07$, $p = .05$, and the Power × Affiliation interaction (Block 2) failed to be significant, $p > .10$.

To further explore the nature of the three-way interaction, we calculated predicted values of goal commitment scores using regression slopes (*b*s) from the final regression equation, at values 1 standard deviation above or below the mean of the first-order components (cf. Aiken & West, 1991; Cohen & Cohen, 1983). Figure 1 shows the resulting interaction pattern. Imagery-group participants who were high in both power and affiliation were most strongly committed to the goal of directive counseling, whereas participants with low levels in one or both motives indicated comparably low levels of goal commitment. Among control-group participants, on the other hand, no comparable pattern of results emerged and the overall effects of individuals' motives on their goal commitment were much smaller than in the imagery group.

Affective arousal. Hierarchical regression analyses of participants' general arousal at T2 on experimental condition, power motive, and affiliation motive as well as the interaction terms of these first-order predictors revealed a significant main effect of experimental condition with general

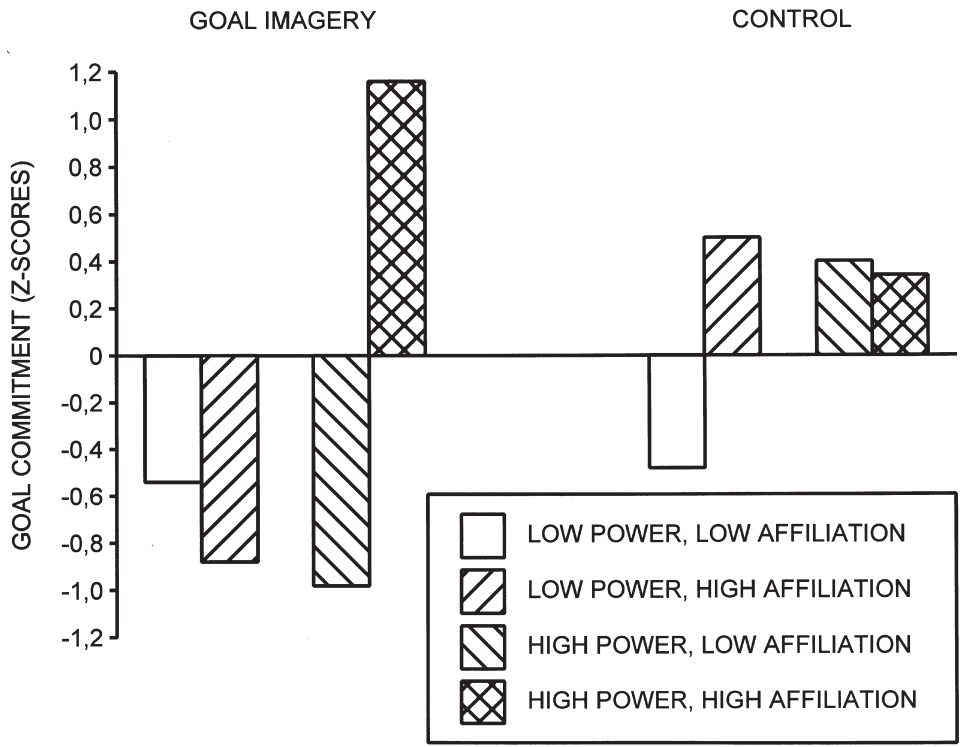

Figure 1

Goal commitment as a function of experimental condition, power motive, and affiliation motive, computed for values 1 *SD* below (low) and above (high) the means of motive variables (Study 1).

arousal at T1 controlled for (see Table 2). Imagery-group participants were generally less aroused at T2 than control-group participants. This effect, however, was qualified by a significant Experimental Condition × Power Motive × Affiliation Motive interaction (see Table 2). To further trace this interaction, we regressed general arousal at T2 on general arousal at T1 (Block 1), power motive and affiliation motive (Block 2) and their interaction (Block 3) separately for imagery participants and control participants. For imagery-group participants, we found that after holding general arousal at T1 constant, only the interaction between power motive and affiliation motive had a significant effect on general arousal at T2, $b = .55$, $t(20) = 1.96$, $p = .06$. In contrast, no significant main or interaction effects of the motive variables emerged for participants in the control group after controlling for T1 general arousal, ps > .10. Next, we computed predicted values of general arousal at T2 for the three-way interaction from the final regression equation. As can be seen in Figure 2, participants high in both power and affiliation reported the highest general arousal of all imagery-group participants, whereas participants low in one or both motives felt comparatively less

Table 2
Hierarchical Regression of General Arousal at T2 on Experimental Condition, Power Motive, and Affiliation Motive with General Arousal at T1 Held Constant (Study 1)

Block	Variable	ΔR^2	*df*	ΔF	*b*[a]
1	T1 general arousal	.195	1, 48	11.63**	.53***
2	First-order predictors	.136	3, 45	3.06*	
	Experimental condition[b]				–.38**
	Power motive				.10
	Affiliation motive				.07
3	Two-way interactions	.013	3, 42	0.27	
	Condition × Power				.26
	Condition × Affiliation				.05
	Power × Affiliation				.16
4	Condition × Power × Affiliation	.077	1, 41	5.48*	.36*
	Cumulative R^2	.421	8, 41	3.73*	

[a] *b* is the regression coefficient in the final regression equation. [b] Effects coding was used for representing experimental condition in the regression analysis.
* $p < .05$. ** $p < .005$. *** $p < .001$.

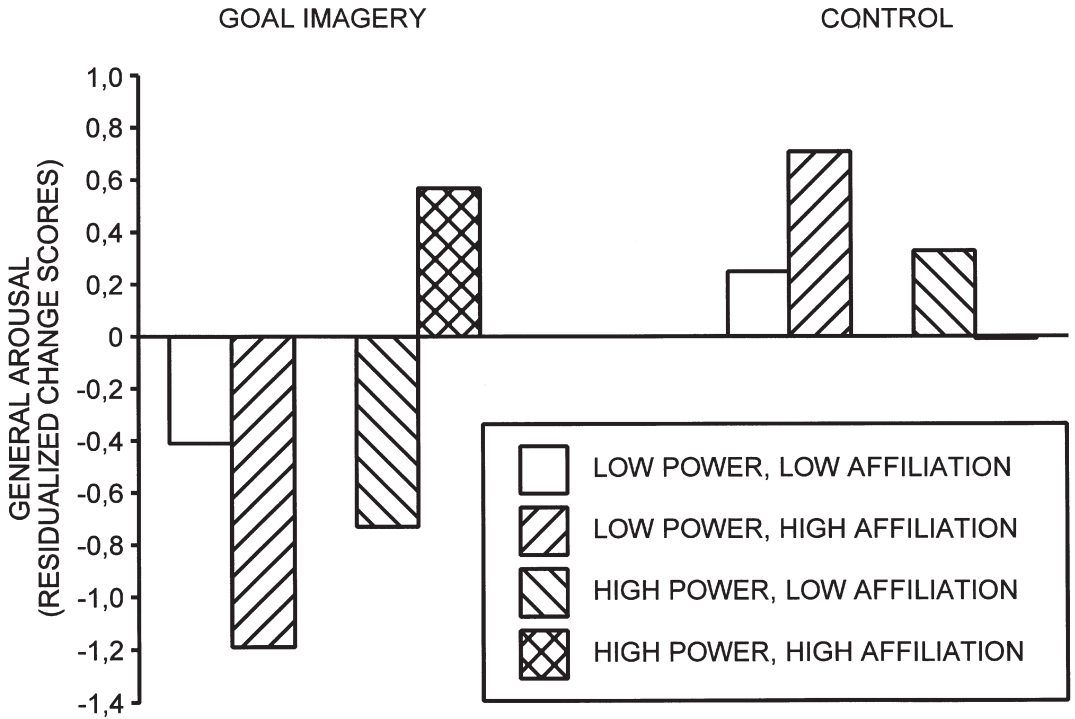

Figure 2

General arousal at T2 as a function of experimental condition, power motive, and affiliation motive, computed for values 1 *SD* below (low) and above (high) the means of motive variables with General Arousal at T1 held constant (Study 1).

aroused. Again, no comparable pattern of results emerged for control-group participants.

Additionally, we tested whether the three-way interaction of the predictors on participants' general arousal was equally attributable to the energetic arousal and tense arousal components of the composite measure. We therefore repeated the analysis reported in Table 2 with energetic arousal and tense arousal disaggregated and converted to *z*-scores. The Experimental Condition × Power Motive × Affiliation Motive interaction was marginally significant for both tense arousal, $b = .30$, $t(41) = 1.81$, $p = .08$, and energetic arousal, $b = .23$, $t(41) = 1.74$, $p = .09$. Subsidiary analyses revealed that the forms of these interactions were quite comparable to the one obtained for the general arousal variable.

Additional analyses. As Figures 1 and 2 suggest, for participants in the imagery group, the pattern of the Power Motive × Affiliation Motive on Goal Commitment interaction looked similar to the pattern found for general arousal. Moreover, goal commitment and general arousal (T2) were significantly correlated among imagery-group participants ($r = .57$, $p < .005$), but not among control-group participants ($r = .19$, $p > .10$). We therefore tested for participants assigned to the imagery condition whether variations in goal commitment might have been accounted for by the Power Motive × Affiliation Motive on General Arousal interaction or, alternatively, if variations in general arousal might have been explained by the Power Motive × Affiliation Motive on Goal Commitment interaction (see Baron & Kenny, 1986). General arousal at T2 was used as the dependent variable in our first analysis. Before controlling for variations in goal commitment, the significant Power Motive × Affiliation Motive interaction uniquely accounted for 13.5% of the variance in general arousal at T2, with general arousal at T1 and first-order terms of both motive variables covaried out. After adding goal commitment to the set of predictors, this interaction effect was no longer significant, $\Delta R^2 = .020$, $\Delta F(1, 19) = 0.64$, $p > .10$. In our second analysis, goal commitment was the dependent variable. Before including general arousal at T2 in the regression equation, the unique portion of variance explained by the significant Power Motive × Affiliation Motive on Goal Commitment interaction was 15.5%. After additionally controlling for variations in general arousal at T2, this interaction effect was no longer significant, $\Delta R^2 = .074$, $\Delta F(1, 20) = 2.73$, $p > .10$. These results indicate that for imagery-group participants, neither goal commitment nor general

arousal at T2 captured a unique effect of the predictors' interaction after removing the portion of variance shared by both dependent variables. Hence, neither variable represents a mediator of the predictors' effect on the other. Rather, the effect of the Power Motive × Affiliation Motive interaction was contained in the considerable portion of variance (33%) shared by both dependent variables.

DISCUSSION

In accordance with our hypothesis, individuals high in both power and affiliation indicated higher levels of goal commitment and general arousal after goal imagery than individuals high in only one or neither motive. In contrast, this motive pattern was not predictive of commitment or affect measures in the control condition. The function of goal imagery as a forger of goal–motive congruence is further illustrated by the strong positive correlation between goal commitment and general arousal in the imagery condition. As mediational analyses indicated, being highly committed to the assigned goal was virtually synonymous to being affectively aroused for goal-imagery participants high in both power and affiliation, and no precedence of the one measure over the other could be detected. This suggests that the experiential system and the rational system corresponded directly with each other and were both processing the same goal-related information after goal imagery. Participants in the control condition, on the other hand, did or did not make a commitment to the goal regardless of their affective states. Thus, their processing systems were decoupled when they decided on whether or not to adopt the goal.

Unexpectedly, we found that among control-group participants higher levels of the affiliation motive were associated with a stronger sense of goal commitment. The size of this effect was quite comparable to the motive–goal correlations obtained by Emmons and McAdams (1991; *r*s ~ .40). Thus, this result may reflect some kind of fundamental correspondence between individuals' goals and their motives, even though this correspondence did not extend to the power motive or, more importantly, to the high-power/high-affiliation motive configuration matched by the incentives of the assigned goal. Alternatively, control-group participants may have spontaneously imagined the ensuing conversation with their client. Hence, in what little time they had available for this, they may have focused on a basic feature of the ensuing situation, namely, that it

would allow them to establish contact with another person. This may have appealed to those of them with a strong affiliation motive.

Finally, control-group individuals did not exhibit the overall decline in general arousal observed in the imagery group, presumably because they had no opportunity to participate in the relaxation and imagery exercise. Both the effect of the affiliation motive on goal commitment and the higher general arousal in the control group point to a limitation of the present study, that is, the absence of a visualization procedure in the control group that would parallel the goal-imagery exercise used in the experimental condition. To balance the relaxational effect of the imagery exercise and to gain control over control-group participants' mental content, we therefore implemented a visualization exercise for participants assigned to the control condition of our second experiment.

Study 2

Whereas Study 1 provided evidence that goal imagery makes goal commitment and affective arousal contingent on a goal's fit with the person's motives, the aim of Study 2 was to show that goal imagery actually influences the effort a person invests in attaining a goal, depending on its congruence with her or his motives. This time, though, we chose a task that provided only power-related incentives. We used a dynamic computer game (Tetris) that had an abstract, nonviolent design that allowed participants to play individually, that is, without the presence of another person, and with a high-score list to which they were added each time their score surpassed any of those already contained in the list. The participant's goal was to try to rank first on the high-score list, thereby surpassing the current number-one player featured on the list. We reasoned that ascending in the high-score list would provide an incentive for individuals with a high power motive because of their strong concern with social ranking and visibility (cf. McClelland, 1987; Winter, 1973). This assumption is also consistent with previous research indicating that performance and achievement may be a means to an end for individuals with a high power motive to gain recognition and fame (McClelland, 1987; Peterson & Stewart, 1993; Veroff, Depner, Kulka, & Douvan, 1980). However, because the results of this type of research are more clear-cut for men than for women, only men were allowed to participate in Study 2. We expected that individuals' affiliation motives would not be aroused either in anticipation of or during pursuit of the assigned goal

because the task did not require any direct social interaction with another person. Moreover, although performing well might be considered an incentive for the achievement motive, we did not expect this motive to be predictive of participants' scores because the achievement motive centers around doing something better in comparison to one's own previous performance. In contrast, participants had to measure up to other individuals' performances in this study.

After having imagined the pursuit and attainment of the assigned goal (goal-imagery group) or details of the game unrelated to power (neutral-imagery group), participants were free to play as many games as they wanted during a 30-minute period. We reasoned that allowing participants only one game would have reflected differences in their proficiency at playing the computer game rather than differences in their motivational states. Conversely, by not being restricted to only one game, even a highly motivated individual with low initial skills would get a chance to hit the top of the high-score list by improving his skills over several games. If his motivation was low, however, we expected that he should not try very hard to attain the first rank, regardless of his skills. This is in keeping with prior theoretical and empirical work demonstrating that effects of motives on behavior will be more likely observed in situations unconstrained with regard to allotted time (e.g., Atkinson, 1981, 1992) or behavioral means and strategies (e.g., McClelland, 1980; Spangler, 1992).

Hence, our main interest was focused on the highest score each participant attained in any game, a measure that should most directly reflect his motivation to realize the goal of ranking number one. To obtain an overall measure of participants' sustained effort to reach that goal, we also assessed their performance across all games they played. In addition, we examined how they entered their names onto the high-score list, assuming that individuals high in power would be inclined to "leave their mark" by signing their best game with their full or last name. In general, we expected high power individuals after goal imagery to perform better and be more likely to sign the high-score list with their name than individuals low in power. For participants in the neutral-imagery condition, however, we expected to find no positive relationship between the power motive and the dependent variables of this study.

METHOD

Participants and procedure. Fifty-two male German students enrolled in various faculties at the University of Erlangen in Erlangen, Germany, participated voluntarily in the study. As in Study 1, psychology students were not recruited. The average age of the sample was 24.04 (*SD* = 2.91) years.

The research was described to participants as being a study on the relationship between mental imagery and performance on a motor-skill task (i.e., the computer game). Students were tested individually in sessions that lasted between 90 and 120 minutes. At the beginning of the study, the male experimenter administered a TAT measure of motive dispositions and a questionnaire assessing respondents' prior experience with the computer game Tetris. Next, the experimenter introduced participants to the game and gave them 1 minute to become familiar with the keys necessary to operate the game. He then showed participants the high-score list that would appear on the screen after each game. The list already contained 10 fictitious male players who had signed their full names and were ranked according to their game scores. The scores were displayed next to each name. The highest score at the top of the list was 52,087 points and signed with the name "Andreas Fischer." The scores of the subsequent ranks decreased linearly by about 5,500 points from one entry to the next. The high-score list was derived from pilot work indicating that attaining more than 50,000 points was rather difficult. The experimenter commented on the high-score list to the participants with the following words:

> As you can see, other participants have played the game before you and they differed with regard to the scores they were able to attain. I was extremely impressed by the performance of the guy at the top of the list. This Andreas Fischer succeeded in breaking all existing high scores and thus replaced even the former number one. For my own part, I have played this game too, but I have never come anywhere near to the performance of Mr. Fischer. He was so proud of his score that he asked me to tell him whether he could keep the first rank when this study is finished. Obviously, he was rather confident in this regard. You, too, will have the opportunity to play the game now. Who knows—maybe you can even top Mr. Fischer's performance and take over the first rank on the high score list.

Although the experimenter made these remarks in a seemingly casual way, they were intended to focus participants' attention on the goal of becoming the dominant player on the high-score list. Moreover, it was thus made known that the attainment of the first rank would impress the experimenter and frustrate the current number one, Mr. Fischer. The goal of hitting the top of the high-score list was thus presented as a power-related incentive.

Next, all participants listened to a tape-recorded guided imagery and evaluated their experience during the guided imagery afterwards on a short questionnaire. The experimenter then left the room. Participants had up to 30 minutes to play the game as often as they wanted, but were free to quit playing anytime after finishing at least one game. Thus, participants who had reached the top of the high-score list in the first game as well as participants who were not motivated to continue playing the game were not required to play longer than that.

The experimenter would then return, fully debrief the participants, and dismiss them.

Design. As in Study 1, we used an ATI design to test the effect of goal imagery and the power motive on performance measures. The factor *experimental condition* (goal imagery vs. neutral imagery) determined whether participants listened to a goal-related or a neutral-imagery script. Students were randomly assigned to experimental conditions. A TAT-type measure of the power motive was used as a continuous predictor of performance.

Motive measures. The same materials and instructions as in Study 1 were used to assess participants' motive dispositions. Students' TAT protocols were content-coded for power, achievement (i.e., for a character's concern with doing something better, unique accomplishment, or discontentment after failing at a task), and affiliation themes according to Winter's (1991) system. Two trained raters who had demonstrated percentage agreement of 85% or above with the calibration materials provided by Winter (1991) scored the protocols independently. Percentage agreements for scoring students' TAT protocols were 87% for power, 88% for affiliation, and 83% for achievement. Disagreements were discussed until resolved to obtain participants' final motive scores. Mean scores were 4.12 for power (SD = 2.37), 4.44 for affiliation (SD = 2.34), and 1.90 for achievement (SD = 1.50). All motive scores were corrected by regression for protocol length (M = 530 words, SD = 107) and then converted to z-scores.

Experimental condition. Two different imagery scripts were used: one for the goal-imagery group and the other for the neutral-imagery group. With regard to the principles guiding the construction of the imagery scripts, mode of presentation, and preceding relaxation instructions, both were comparable to the goal-imagery procedure described in Study 1. Moreover, both scripts were similar with regard to total duration (goal-imagery script: 12 min, 00 sec; neutral-imagery script: 11 min, 57 sec), instructional sentences (26 each), and questions focusing on affective imagery content (4 each).

The script used in the goal-imagery condition started with a description of the first game. Participants were asked to imagine that they could not attain enough points to enter the high-score list at first. During the next games, though,

their performance would improve and their scores would allow them to earn a spot on the list. They would get better and better, kicking one player after the other off of the high-score list and replacing them by their own entries. Finally, they would succeed in attaining more points than the present number one of the high-score list. After the game was over, they would then enter their own name at the first rank and thus eliminate the former number one's entry.

Participants in the neutral-imagery condition imagined various visual and other sensory details such as the colors, movements, and forms of the objects on the screen; the feel of the keyboard under their hands; and the course of a typical game. However, the high-score list was never mentioned in this script.

In the construction of the scripts, we took care that none of them contained any instructions that could have led to mental practicing of the game. In the goal-imagery script, questions to the participants regarding their affective reactions occurred whenever power-relevant events had been described in the script, such as the failure to enter the high-score list at the beginning or the successful attainment of the first rank at the end. Because no similar power-related events were mentioned in the neutral-imagery script, each of the four affect questions was placed after the same number of instruction sentences as in the goal-imagery script.

The same sensory-modality checklist as in Study 1 was administered to all participants after the guided imagery. On average, participants' mental pictures involved 3.27 sensory modalities, $SD = 1.16$, $Min = 1$, $Max = 6$. Further analyses indicated that the experimental groups did not differ with regard to total number of involved sensory modalities, $p > .05$. Thus, both imagery scripts were comparable with regard to vividness and effective in evoking perception-like experiences in the students.

Performance measures. We used a shareware version of the game Tetris—a dynamic, nonaggressive computer game with an abstract two-dimensional visual design. The player's task is to maneuver different kinds of building blocks that descend one at a time from the top of the screen to the bottom in such a way that they fit into the gaps between blocks already lying at the bottom. When a row of gaps at the bottom is completely filled, it vanishes and thus makes room for more descending blocks. The player can manipulate the descending blocks by rotating and shifting them. His score increases for every block he places at the bottom and for every completed row. The game is over when the screen is completely filled with building blocks in such a way that new blocks appearing at the top of the screen cannot descend. After each game, the high-score list is presented. Each time a player attains a higher score than one already in the high-score list, his score replaces the one he surpasses. He then signs his entry in any way he likes (i.e., by his full name, an alias, his initials, no signature at all, etc.). After the high-score list has been presented, the player can then choose whether to play another game or to quit.

The software of the game was customized for the study's purposes so that it unobstrusively recorded (1) the score attained in each game, (2) the duration of each game, and (3) the player's signature when an entry in the high-score list was made. From these data, we created the following measures for subsequent analyses: (1) the *high score*, which was the best score a participant attained in any game (M = 39,208, SD = 25,773); (2) the *average performance*, which was the sum of scores attained in all games divided by the summed durations of all games (M = 61.00 points/sec, SD = 36.66 points/sec); and (3) the *entry signature*, a variable that was assigned the value 1 if a participant had signed his best game with his full or last name (34.6% of all participants) and the value 0 if he had signed his best game in any other way.

Prior experience. Because most students use computers and hence are quite familiar with computer games, we also measured participants' prior experience with games such as Tetris by two items interspersed in the questionnaire administered after the TAT. Students' responses to the items "I have played computer games similar to Tetris quite often," and "I have never before played Tetris or any similar computer game" were assessed on 5-point scales ranging from (1) *definitely not true* to (5) *definitely true*. Participants' scores on these items were highly correlated, $r = –.75$, $p < .001$. Therefore, we computed a total score of *prior experience* by subtracting each respondent's score on the second item from his score on the first item. Participants' scores on the composite measure (M = 0.58, SD = 2.74) indicated that, on average, they were moderately familiar with Tetris.

RESULTS

Goal-imagery participants did not differ from neutral-imagery participants with regard to their power motive or prior experience, ts < 1.

Performance measures. Hierarchical multiple regression analysis indicated that neither experimental condition nor power motive predicted participants' high scores. However, the Experimental Condition × Power Motive interaction did (see Table 3). Further analyses revealed that for goal-imagery participants, the power motive was positively related to the high score measure, $r = .39$, $p < .05$. In contrast, for neutral-imagery participants, the power motive had a negative but insignificant effect on the high-score measure, $r = –.25$, $p > .10$. The difference between these correlation coefficients was significant, $z = 2.26$, $p < .05$. Figure 3, which was created according to the procedure described in Study 1, depicts this interaction. As the regression lines indicate, high power participants in

Table 3
Hierarchical Multiple Regression Analysis of Participants' High Scores on Experimental Condition and Power Motive (Study 2)

Block	Variable	ΔR^2	*df*	ΔF	*b*[a]
1	First-order predictors	.020	2, 49	0.50	
	Experimental condition[b]				–.13
	Power motive				.02
2	Condition × Power	.094	1, 48	5.08*	.31*
	Cumulative R^2	.114	3, 48	2.05	

[a] *b* is the regression coefficient in the final regression equation. [b] Effects coding was used for representing experimental condition in the regression analysis.
* $p < .05$.

the goal-imagery group scored higher than low power participants in the same group or high power participants in the neutral-imagery group but not quite as high as low power participants in the neutral-imagery group.

Students' high scores and average performances were highly correlated, $r = .92$, $p < .001$. Accordingly, with average performance used as dependent variable, the Experimental Condition × Power Motive interaction was significant, $\Delta R^2 = .105$, $\Delta F(1, 48) = 5.75$, $p < .05$. The pattern of this interaction effect closely resembled the one obtained for the high-score measure.

Participants' high scores were largely independent of the total time spent playing ($r = .05$, $p > .10$) but strongly correlated with prior experience ($r = .81$, $p < .001$). We therefore repeated the analysis reported in Table 3, but this time controlled for variations in prior experience. After covarying out prior experience, we found that the interaction effect remained fully intact, $\Delta F(1, 47) = 1.87$, $p < .05$.

A look at Figure 3 suggests that, on average, power-motivated students in the goal-imagery condition came rather close to the proposed goal of hitting the top of the high-score list. We thus examined whether these participants had, in fact, been more likely to attain the first rank. For this purpose we derived the variable *first rank* from the high-score variable by determining which players had obtained more than 52,087 points (coded 1, all others were coded 0). Of all players, 37.7% attained the first rank of the high-score list. We then subjected first rank to a hierarchical logistic regression analysis with experimental condition and the power motive entered on Step 1 and the interaction term on Step 2. Again, only the Experimental Condition × Power Motive interaction was significant,

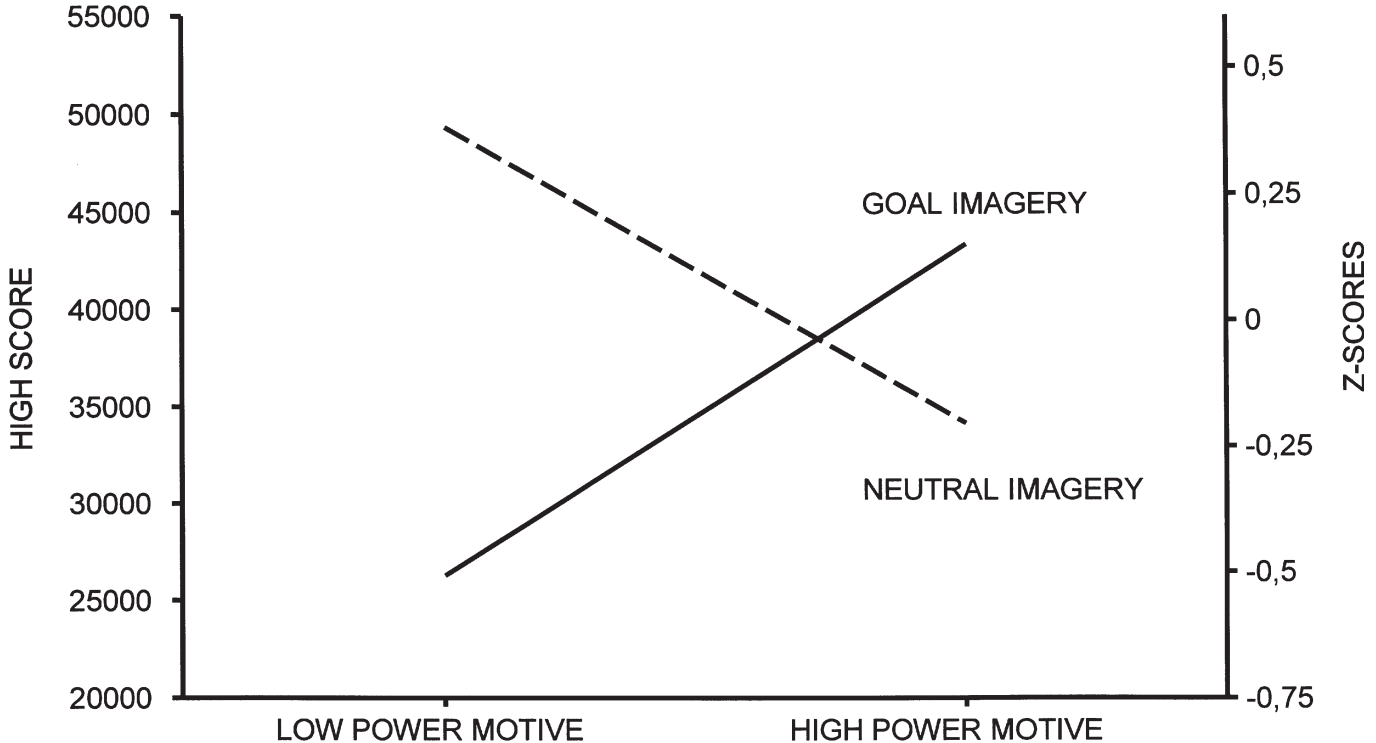

Figure 3

Highest score attained in any game as a function of experimental condition and power motive, computed for values 1 *SD* below (low power) and above (high power) the mean (Study 2).

$\Delta\chi^2(1) = 5.49$, $p < .05$. Subsequent analyses revealed that the power motive was a significant predictor of the first-rank attainment for goal-imagery participants, $r_{pbis} = .39$, $p < .05$. Thus, the higher their power motive, the more likely they were to attain the first rank of the high-score list. In contrast, for neutral-imagery participants, the relationship between power motive and first rank was reversed, although it failed to be significant, $r_{pbis} = -.26$, $p > .10$. However, the difference between these two correlation coefficients was significant, $z = 2.30$, $p < .05$.

Entry signature. Hierarchical logistic regression of the variable *entry signature* on experimental condition and power motive on Step 1 and their interaction term on Step 2 revealed a significant Experimental Condition × Power Motive interaction, $\Delta\chi^2(1) = 4.29$, $p < .05$. This interaction could be traced back to a strong correlation between power motive and entry signature for goal-imagery participants ($r_{pbis} = .57$, $p < .005$) that did not emerge for neutral-imagery participants ($r_{pbis} = .09$, $p > .10$). The difference between these correlation coefficients was marginally significant, $z = 1.89$, $p = .06$. Using *b*-weights from the final standardized logistic regression equation, we computed the log odds and then the probability values (see DeMaris, 1992) for students' inclination to sign their high score with their full or last name according to the principles for graphing interactions outlined in Study 1. As Figure 4 shows, only goal-imagery participants with a high power motive were likely to mark their high scores in this way. All other participants had low probabilities of signing their high scores with their full or last name.

As the low correlation between participants' high scores and their entry signature indicates ($r_{pbis} = .12$, $p > .10$), students who signed their best game with their full or last name did this regardless of the quality of their performance.

Additional analyses. To test whether the guided imagery scripts used in the experimental groups had also aroused participants' achievement motive or affiliation motive, we repeated the analysis reported in Table 3 with these motives instead of the power motive as predictors. Neither the achievement motive nor the affiliation motive alone or in interaction with experimental conditions had a significant effect on participants' high scores.[1]

1. We also assessed students' explicit (or self-attributed) motives (cf. McClelland et al., 1989) with the scales *dominance*, *achievement*, and *affiliation*, which were taken from the German version of the Personality Research Form (PRF; Stumpf, Angleitner, Wieck,

DISCUSSION

The results of this study are fully in keeping with our hypotheses. After imagining the power-related incentives of the game, participants high in power—as compared to participants with a low power motive—invested more effort into realizing the goal of attaining the first rank of the high-score list: Regardless of their initial skills, they performed better, had better high scores, and were in fact more likely to hit the top of the high-score list. In addition, independently of the rank they actually attained, they also showed a strong tendency to "leave their mark" by signing their best game with their name.

For participants who had imaginatively explored details of the game unrelated to their assigned goal, on the other hand, the power motive was not associated substantially with any of the dependent measures. However, low power participants in this condition achieved slightly higher scores than all other participants. This finding may be attributed both to low power participants' inclination and to high power participants' disinclination to spontaneously accept the goal assigned to them by the experimenter's instruction (for related arguments, see McClelland et al., 1989; Spangler, 1992). In the goal-imagery group, however, this effect was superseded by the imagined experience of striving for a competitive goal, which was more motivating for high power than for low power participants.

In addition, Study 2 provided evidence that the congruence-enhancing function of imagery depends on its goal-related content and is not a result of any general effects of imaginative processes per se. For control-group participants, who had focused on peripheral details of the game unrelated to their assigned goal, neither the power motive nor any other motive predicted any of the dependent variables.

GENERAL DISCUSSION

Based on research showing that implicit motives and explicit goals are not substantially correlated and that discrepancies between motives and

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Jackson, & Beloch-Till, 1985). As reported in previous research (e.g., King, 1995), these self-report measures of participants' motives were essentially uncorrelated with TAT-based motive measures, *p*s > .10. Moreover, none of the three PRF scales—either by itself or in interaction with experimental condition or TAT-based motive measures—explained significant portions of variance in the performance measures.

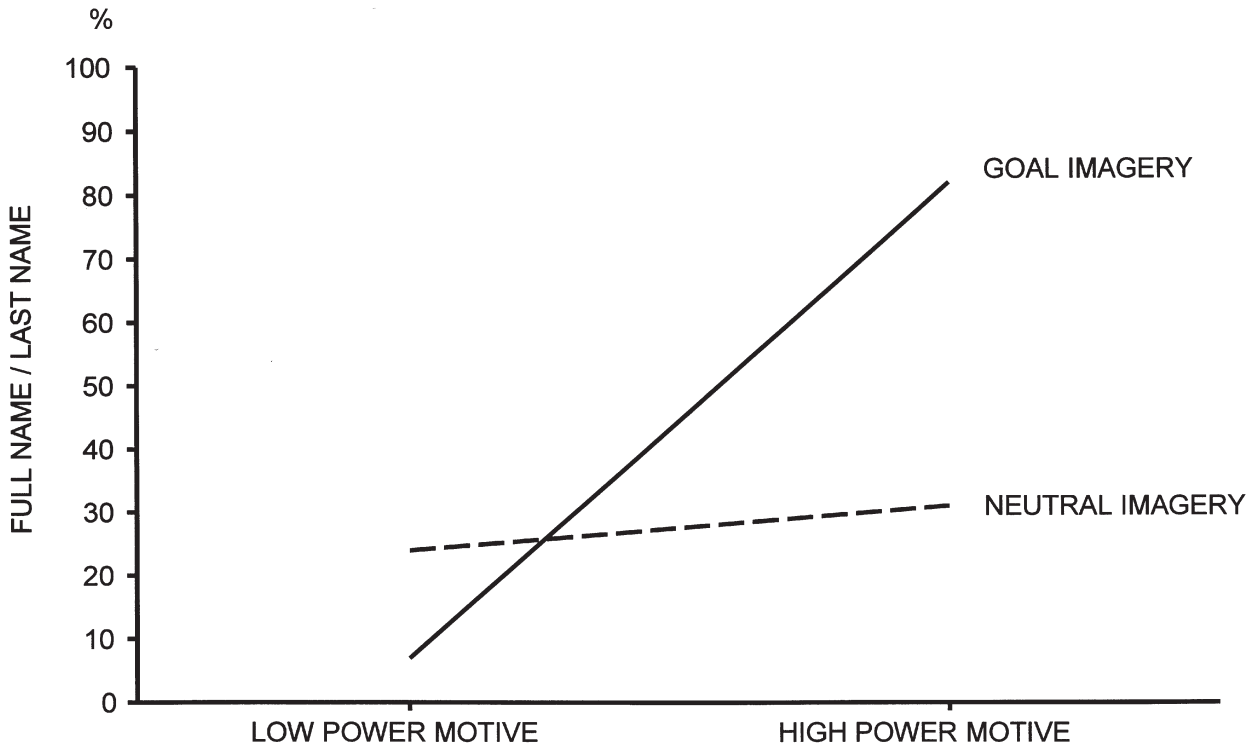

Figure 4

High-score-list entry as a function of experimental condition and power motive, computed for values 1 *SD* below (low power) and above (high power) the mean (Study 2).

goals may eventually have adverse consequences for the individual (Brunstein et al., 1995; King, 1995; McClelland et al., 1989), the aim of the present research was to highlight the role of goal imagery as a catalyst in connecting individuals' goals to their motives. We conducted two studies to explore the relationship between individuals' motive dispositions and their motivation to pursue different kinds of assigned goals. In Study 1, participants were assigned a social-interaction goal that contained incentives for a motive pattern characterized by both a strong affiliation and a strong power motive. Participants' motivation to attain this goal was assessed by their reported goal commitment and changes in affective arousal. In Study 2, students were assigned a competitive performance goal solely furnished with power-related incentives. Different from Study 1, behavioral measures (e.g., test performance) were used to tap participants' motivation to strive for this goal. In accordance with our hypotheses, both studies revealed that participants' motivation to accept and strive for a given goal depended on its fit with their motives only after they had been engaged in goal imagery. In Study 1, goal-imagery participants high in both power and affiliation were strongly committed to the assigned goal and experienced a matching increase in affective arousal, whereas participants who lacked this motive pattern indicated less commitment and arousal. In Study 2, these findings were complemented and extended by the observation that individuals high in power, as compared to those low in power, invested more effort in the attainment of a power goal. In contrast, these lawful relationships between the strength of implicit motives and the inclination or disinclination to adopt and pursue a goal failed to emerge in either study for participants who had not previously explored the incentives of the goal in their imagination. We conclude from these results that imagining a goal permits individuals to explore its fit to their motives. Hence, they can then base their decision of whether to commit themselves to the goal in question and invest effort in its pursuit on its capacity to meet their emotional needs.

Notably, in both studies the experimenters provided participants with precise verbal descriptions of the assigned goal and its motive-related incentives. Nevertheless, the implicit motives of individuals who had received no goal imagery (Study 1) or imagery unrelated to the assigned goal (Study 2) did not seem to respond to these descriptions. From the vantage point of Epstein's cognitive-experiential-self theory, these findings can be accounted for by the experiential system's (viz., implicit

motives) orientation toward immediate experience and its relative inability to decode symbolic information addressed to the rational system (i.e., the experimenter's verbal descriptions of the goal). Hence, while on a rational level individuals understood exactly what the experimenter requested of them, their motives did not react to the goal's incentives as long as they were encapsulated in language.

Theoretical and Practical Implications

What are the theoretical and practical implications of our present research? First, we believe that our findings may shed some light on the probable causes for the lack of correlation between motives and goals. As the results of the experimental conditions in our studies indicate, if a person has the opportunity to mentally simulate the pursuit and attainment of a goal, the goal *can* become an outlet for his or her motives, provided that it is congruent with them. As the control-group findings suggest, however, individuals run the risk of committing themselves to goals incompatible or only partially compatible with their motives if they adopt them from others and do not have the chance to translate their content into a representational format that can be processed by their experiential systems. Under these circumstances, the contents of a person's goals are less likely to reflect his or her motives. For the following two reasons, such goal choices may be more common than one would expect at first glance. The first reason is that, as already mentioned, society and culture are powerful determinants of the goals individuals form and pursue throughout the life cycle. This may predispose goal choices to reflect the demands of a person's social environment at least as much as they reflect his or her own motives (see Cantor & Blanton, 1996). The second reason is that individuals may occasionally misclassify goals originally adopted from others as self-generated (see Kuhl & Kazen, 1994). Hence, they may pursue goals that do not fit their motives with the same vigor as they would pursue their most idiosyncratic goals. This may tip the scales even further in favor of motive-incongruent goals. Therefore, future research on the relationship between the goals people pursue in their daily lives and their motive dispositions should include instruments that tap goal imagery as it occurs under natural circumstances. It may well turn out that individuals whose goals are furnished with imagery are high in motive–goal congruence whereas individuals

low in motive–goal congruence do not associate any kind of imagery with their goals.

Second, the findings of our two studies suggest that goal imagery represents a tool to study the behavioral correlates of implicit motives more closely. In the past, as research on life outcomes (cf. McClelland, 1980) and a meta-analysis on the predictive power of the implicit achievement motive (Spangler, 1992) suggest, researchers may have been more successful in detecting effects of motives on behavior in field research than in more highly controlled laboratory experiments. In light of our findings, we would argue that this relative disadvantage of experimental procedures may have been due to the inappropriateness of verbal instructions, which are commonly used in psychological experiments, to elicit experiential modes of information processing. Using goal imagery to make participants anticipate experientially what they are instructed to do, though, will enable researchers to study "motives in action" without having to give up the control and precision that laboratory experiments afford.

Third, to account for the differential influence of implicit motives on individuals' behavior in different types of situations (e.g., operant vs. respondent situations), Koestner, Weinberger, and McClelland (1991) proposed that implicit motives are aroused by factors intrinsic to the process of performing an activity, but largely unaffected (or even inhibited) by social factors extrinsic to the process of performing an activity (e.g., the way in which a task is presented by an experimenter). In light of the present findings, we suggest that a focus on activity incentives permits the expression of motives because it facilitates an experiential mode of processing, whereas the salience of social incentives may primarily cue a language-based, rational mode of processing. However, we also believe that a distinction in terms of modes of processing holds greater explanatory power to account for cross-situational differences in the motive–behavior relationship than a classification of situational antecedents that may represent necessary but not sufficient prerequisites for the arousal of implicit motives. Indeed, the present findings suggest that an experiential mode of processing can easily be induced by goal-imagery exercises, and, once established, may override a rational mode of processing stimulated by the presence of social incentives (e.g., the experimenter's instruction).

Fourth, the present findings suggest that goal imagery may also be of value as a therapeutic technique to make individuals aware of the fit (or

lack thereof) between their short- and long-term goals and their implicit motives. Consequently, they may learn to recognize and choose congruent and discard incongruent goals more often or, where incongruent goals have to be pursued for other reasons, to anticipate potential emotional problems likely to occur in the pursuit of a goal and cope with those problems proactively (cf. Skovholt, Morgan, & Negron-Cunningham, 1989; Taylor & Schneider, 1989). Although these assumptions clearly await empirical validation, the ubiquitous use of techniques involving imagery and fantasy in various therapeutic settings suggests that imagery is indeed a potent means to enhance psychological adjustment (see Singer & Pope, 1986).

Limitations and Future Directions

In closing, we address the limitations of our present studies and sketch out possible directions for future research:

1. One could argue that the goal-imagery exercises used in both studies simply gave experimental-group participants greater opportunity than control-group participants to elaborate the assigned goals without ruling out the possibility that a comparably extensive rational processing of the goals would also have increased motive–goal congruence. Although this argument is somewhat weakened by the finding that the self-articulated and thus presumably rationally elaborated goals people report in field studies correspond to their motives only loosely if at all (see Brunstein et al., 1995; Emmons & McAdams, 1991; King, 1995), it would still seem desirable to demonstrate conclusively that even extensive rational processing of a potential goal does not increase the congruence between a person's choice and pursuit of the goal on the one hand and his or her implicit motives on the other. This could be achieved in future studies by comparing individuals who carefully explore an assigned goal within their experiential systems through the use of goal imagery with individuals who equally carefully analyze the goal within their rational systems by, for example, contemplating the goal's potential benefits and drawbacks.

2. Although we did not rely solely on self-report instruments but included behavioral measures as well, replication studies with other and more varied behavioral criteria are called for that should also

include psychophysiological measures to study emotional processing during goal imagery in a more direct manner.

3. To engage participants in goal imagery, we used prerecorded guided imageries with interspersed affect-focusing questions in both studies. Thus, other methods of inducing goal imagery should be implemented in future research that, for instance, could use more individualized imagery techniques, and affective focusing should be varied independently of imagery content.

4. We studied the congruence-enhancing effect of goal imagery with an emphasis on the power motive (or a variation thereof) in the present research. Future studies should therefore address the issue of whether goal imagery is an equally effective catalyst for motives and goals in other thematic domains.

5. Because the TAT is not only a measure of enduring motive dispositions when administered under neutral conditions but also sensitive to the motivational states these dispositions result in after arousal (cf. McClelland, 1987), it could be used as a within-subjects measure to assess the influence of goal imagery on the experiential system more directly in future studies.

6. Participants of both studies were young, well-educated German adults. Hence, it would seem fruitful to explore the role of goal imagery for motive–goal congruence in samples differing from ours with regard to age, educational level, and sociocultural background.

To conclude, the present research provides initial evidence that goal imagery is an important means to determine the fit between a potential goal and an individual's motives. After imaginatively exploring a goal, the degree of participants' commitment, affective arousal, and effort investment directly reflected the degree of the goal's congruence to their motives. However, no comparable findings were obtained in the absence of goal imagery, even though participants were given precise descriptions of the goal and its incentives. Therefore, our results suggest that a lack of congruence between inividuals' implicit motives and explicit goals may be due to a difference in their representational format. Further research is needed to clarify these issues, however.

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