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Introduction

This volume continues a loose series of edited books (Atkinson, 1958; Smith, 1992) dedicated to the examination of human motivation and behavior through the lens of implicit motives, enduring nonconscious needs that drive humans' behavior toward the attainment of specific classes of incentives. In the following, we will sketch out a brief history of research on implicit motives, portray the basic principles guiding implicit motive research, and provide an overview of the chapters featured in this book.

The Excitement of the Early Years: 1948 to 1961

Research on implicit motives started when in the late 1940s David McClelland, who was then a new faculty member at Wesleyan University, teamed up with graduate student John Atkinson to measure motivational needs in humans. They decided to start with hunger motivation as a model need system but did not want to rely on people's introspective reports of hunger because they doubted the validity of such self-reports. McClelland (1984) later traced his doubts about self-report to his observations as a young man who noted the striking difference between the values people avowed to in church on Sundays and their actual behavior throughout the rest of the week. "I never put much faith in what people say their values are on questionnaires, because I don't believe that these statements bear very much relationship to what they in fact do or even to the values

that implicitly guide their lives. This also gave me a strong belief in the reality of unconscious values or motives, which were obviously affecting what they did in ways that were quite unknown to themselves" (p. 4, italics in original).

McClelland and Atkinson were looking for a way to assess the need for food that bypassed research participants' introspective reports on how hungry they felt. According to Atkinson (in Winter, 1998), the decision to measure hunger motivation with a variant of the Thematic Apperception Test (TAT), Morgan and Murray's (1935) device to tap into unconscious needs, was due to a lucky coincidence: "We were talking about this first experiment in Dave's office. Bob Knapp walked from one side to the other and he said, 'Why don't you try the TAT?', and then walked out the door." (Winter, 1998, p.139)

The decision to use the TAT was due to serendipity; the rest is history. McClelland and Atkinson's original work on the effects of food deprivation on TAT story content was extremely promising (Atkinson & McClelland, 1948). Individuals who had fasted for 16 hours wrote stories about pictures suggestive of food that dealt with the procurement of food and with deprivation states; individuals who had just had breakfast did not imbue their stories with this kind of imagery. Thus, Atkinson and McClelland had used an experimental manipulation of a motivational need (food deprivation versus no deprivation) and studied its effect on the themes research participants wrote about in their stories. In later research, the themes identified in experimental motive arousal studies of this kind were codified and used to assess individual differences in motivational needs in individuals who had been tested under neutral conditions. This was based on the assumption that individuals who showed a lot of motive imagery in their stories in the

absence of situational motive arousal must be chronically high in this motivational need whereas individuals with little motive imagery are not.

Despite the initial success with identifying imagery differences in stories written by hungry and full research participants, hunger as a motivational need was soon abandoned in favor of the need to achieve because it was felt that this need was more relevant for individuals' success in specific jobs and life in general. Within only a handful of years, McClelland, Atkinson, and their collaborators conducted ground-breaking research on the assessment of the need for achievement (or *n* Achievement, as it was named to adhere to Murray's, 1938, original terminology). The harvest of this research was published as *The Achievement Motive* (McClelland, Atkinson, Clark, & Lowell, 1953), a book that remains highly readable and thought stimulating to this day and contains many ideas and findings whose implications still await thorough study.

The years after the publication of *The Achievement Motive* saw a rapid proliferation of the measurement approach to motivation introduced by McClelland and Atkinson. Enthusiasm for the new motivational concepts and measurement approach quickly spread beyond the confines of Harvard University, where David McClelland received an appointment in the early 1950s, and the University of Michigan, where John Atkinson continued his work after graduating from Wesleyan. In quick succession, TAT-based measures of other motivational needs were developed, such as the needs for power, affiliation, and sex, and validated in studies on task performance, perception, attitudes, developmental processes, and other validity criteria. Researchers also dedicated considerable effort to understanding the picture story coding methods used for the assessment of motives. Many of these studies were published or reprinted in the first

edited volume dedicated solely to theory and research dealing with implicit motives, Atkinson's (1958) *Motives in Fantasy, Action, and Society*.

The early years also portended what would come to be a hallmark of implicit motive research, namely the application of motivational measures and concepts beyond the confines of psychological science. Soon after the initial work on the assessment and validation of the need for achievement was completed, McClelland started to explore the usefulness of this motive for the explanation of economic phenomena and their cultural precursors. These ideas were formulated for the first time in a contribution to the Nebraska Symposium on Motivation series (McClelland, 1955) and culminated in the publication of *The Achieving Society* (McClelland, 1961), an exciting intellectual tour-de-force through history, mythology, religion, sociology, and particularly economics. In the book, McClelland linked Protestant values to child-rearing practices that fostered high achievement motivation and, as a consequence, entrepreneurial activity. He also demonstrated for several different countries and historical eras that periods of increases in collective achievement motivation preceded periods of economic growth. *The Achieving Society* represents the crowning accomplishment of the field's early years, pushing the boundaries of what motivational science (and psychology more generally) can be applied to and account for, and showcasing the impressive validity and predictive power of content-coding methods for the assessment of motivational needs.

Consolidation, Confusion, and Conflict: 1961 to 1989

For roughly the next three decades, work on implicit motives branched out further, first continuing to gain interest among researchers, but then slipping into

stagnation in the later years. The factors that contributed to its initially increasing popularity included Atkinson's development of a rigorous and highly influential theory of achievement motivation that was originally published in 1957 but had its main impact on psychology and other social sciences in the 1960s and 1970s. Atkinson later took theorizing a big step further by developing, with David Birch, the dynamics of action theory (Atkinson & Birch, 1970), a highly advanced and complex account of the laws governing the ebb and flow of motivation and the change from one activity to the next. Meanwhile, McClelland and his associates intensified their efforts to apply motivational concepts to real-world phenomena in business settings and economic development. One such effort was the attempt to train small business owners in an entire Indian town to think and act like a person high in the need for achievement and thereby to improve the local economy (McClelland & Winter, 1971). Another success story of the second phase in the field's history was the emerging realization that implicit motives were associated with specific psychophysiological responses and health outcomes. Steele (1973), in his pioneering dissertation, was able to document a link between aroused power motivation and excretion of sympathetic catecholamines, as measured in urine levels. With a time lag of 10 years, this discovery led to an intensive and productive exploration of the role of implicit motives in health and disease and the physiological mechanisms involved in it (for a summary, see McClelland, 1989).

Despite these successes, the enthusiasm of the early years started to wear off, an effect that is, perhaps, inevitable in any line of research whose early promise of boundless validity and applicability finally has to give way to a realistic acknowledgment of the boundaries of its concepts and the limitations of its measures. But work on implicit

motives also came under fire from critics (e.g., Entwisle, 1972; Fineman, 1977; Klinger, 1971), and the leading researchers of the field took an amazingly long time to muster convincing rebuttals to the inappropriate criticisms and to learn from the appropriate ones.

It is ironic and also tragic that the very principle on which implicit motive research is built—that people cannot validly report on their motivational needs, and therefore, indirect assessment methods have to be employed—was ignored by many researchers at the fringes of the field, some of whom then complained that measures of implicit motives did not correlate with self-report measures and did not predict the same outcomes as these self-report measures (e.g., Entwisle, 1972; Fineman, 1977). Others simply developed self-report measures for the motivational needs studied by implicit motive researchers and declared these new assessment tools to be able to tap the same constructs as the more time-consuming picture story content-coding motive measures. As a consequence, scores of questionnaire measures of the "achievement motive" and other motivational needs have been developed and established under the same construct name as measures of implicit needs, and entire theories have been built on findings obtained with them, despite the fact that these questionnaire measures do not substantially correlate with implicit motive measures. A novice entering the field of human motivation today is faced with the daunting task of figuring out that self-report and indirect measures of presumably the same motive do not measure the same thing or predict the same kinds of outcomes, despite having the same construct name. McClelland, Koestner, and Weinberger (1989) later commented on this state of affairs: "Another way to react to this lack of correlation is to take it seriously, to insist that at a minimum, psychologists should

not call by the same name two measures that do not correlate with one another [...].” (p. 691).

To some extent, however, this state of affairs was also a homemade problem, reflecting a lack of careful theorizing in the field of implicit motives itself, theorizing that was commensurate with basic assumptions and research findings. True, Atkinson (1957) had developed the influential risk-taking theory of achievement motivation. But in doing so, he abandoned a basic assumption of his earlier work—that motivational needs operate unconsciously—and integrated a self-report measure of fear of failure into his research and theorizing, thereby perhaps giving others the impression that questionnaires can be used, after all, to validly assess motivational needs. Atkinson’s later work on the dynamics of action, although developed in part to account for the lacking internal consistency of implicit motive measures, ranged far beyond the domain of the empirical data—too far, perhaps, to provide a useful conceptual framework for predicting, testing, and interpreting effects of implicit motives empirically. McClelland, on the other hand, had witnessed the rise and fall of Clark Hull’s general theory of behavior while he was a graduate student at Yale University and therefore was ambivalent about the usefulness of theories: “My *primary* loyalty is to the phenomenon, to the empirical fact—and if it messes up somebody’s theory, so much the worse for the theory” (McClelland, 1984, p. 28, italics in original).

What was missing at the very core of implicit motive research was an explicit recognition that it is not sufficient to postulate that people have no insight into their motivational needs and then prove the point by showing that self-report measures of motivation do not correlate with implicit motive measures. That only leads to the

question: If they are not correlated, which is better at predicting relevant criteria? The issue of statistical independence then becomes an issue of competing validity, and only one type of construct can win the race. What needs to be added to the independence of the predictors is, at a minimum, a conceptual and empirical specification of which kinds of outcomes are affected by each type of measure.

A study by deCharms, Morrison, Reitman, and McClelland (1955) provided the clues necessary to arrive at such a model. The researchers assessed participants' implicit achievement motive and also the value they explicitly placed on achievement. Then they had them work on a classic validity correlate of the implicit motive (an anagram task) and on a task that required them to ascribe achievement-related traits to a target person. The implicit achievement motive predicted performance on the anagram task, but not the traits participants ascribed to the target. In contrast, the degree to which participants rated achievement as something valuable predicted their trait ascriptions, but not their anagram task performance. What this study suggested, then, was that implicit motivational needs predict behavioral performance and that self-attributed motives predict verbal choices and attitudes.

Either this set of findings was so perfectly compatible with McClelland's and his colleagues' way of thinking about conscious and unconscious levels of motivation that they did not fully realize its significance for a person unfamiliar with their views on motivation (i.e., someone outside of the field of implicit motives), or they failed to grasp that they had just identified a rift between levels of behavior that was much more general and pervasive than the mere dissociation of the predictor measures of implicit and self-

attributed motivation. Whatever the reason, McClelland and his associates never made much of these findings for the next 25 years.

But in light of waxing criticism of implicit motive measures and waning interest in implicit motive research, McClelland finally realized that something more was needed than an insistence on the validity of the implicit motive measure. After all, as long as implicit and self-attributed motives were in competition with each other and one was presented as a valid measure, where, exactly, did that leave the other?

McClelland (1980) provided the first grudging acknowledgement that self-reports of motivation might also have some validity, but in a different domain of behavior than implicit motives. Using data from studies on academic and life success, early socialization, and other validity correlates, he showed that implicit motives and self-attributed needs (which he termed "values") predicted different kinds of behavior: implicit motives, long-term behavioral trends in unstructured situations; and self-attributed motives, short-term behavior on questionnaires and in response to specific, clear-cut situational demands. At the same time, he questioned the evidence proponents of self-report measures of motivation cited for the reliability and validity of their constructs. In particular, he denied that self-report measures of motivation assessed anything motivational at all. Although many of his arguments against self-report measures of motivation were incisive and still deserve careful consideration and a principled response by anyone who considers using self-report measures of motivation, this half-hearted concession did not yet resolve the antagonism that the field of implicit motive research had developed with the rest of personality psychology, then a notoriously self-report-prone field of research.

Conceptual Refinement and Reinvigoration: 1989 until Now

During the 1980s, McClelland kept working on a way to integrate conscious and nonconscious forms of motivation into a coherent account of motivated behavior (McClelland, 1985, 1987). Meanwhile, the rest of psychology caught up with implicit motive research. Cognitive psychology, which for a long time had put its trust in common-coding models of information processing, started to realize that information that is processed consciously takes a different route and has different properties than information that is processed outside of consciousness (e.g., Squire, 1986). Concepts like implicit perception, implicit memory, and implicit learning started to become popular, and the paradigms to test and separate them from explicit forms of cognition were developed (Kihlstrom, 1990). Social psychologists began to realize that attitudes can be processed and represented implicitly, outside of conscious awareness, and can dissociate from explicit, conscious attitudes (e.g., Devine, 1989). Neuropsychologists had known at least since the 1950s that the brain has several dissociable systems for perceiving, processing, and storing information, only some of which are involved in conscious memory and control of behavior (e.g., Corkin, 1968). In short, psychology collectively realized that the human psyche operates on more than one level, and that this can be robustly demonstrated across many different mental functions (Kihlstrom, 1990).

So the time was ripe when in 1989, McClelland, Koestner, and Weinberger published a seminal paper, "How do self-attributed and implicit motives differ?," in *Psychological Review*. In this article, they proposed that implicit motives respond to task-intrinsic incentives and influence operant behaviors (i.e., behavior in unstructured

situations), whereas self-attributed (or explicit) motives respond to social incentives and influence respondent behaviors (i.e., behaviors in response to a specific social demand or expectation). Besides formulating for the first time a comprehensive, conceptually symmetric model for conscious and nonconscious levels of motivational control over behavior, McClelland et al. also introduced new terms for existing measures and constructs that have been adopted by most researchers in this field since then. For one, they coined the term *implicit motive* in analogy to Schachter's (1987) implicit memory concept to denote nonconscious motivational needs assessed through indirect means and contrasted it with the term *explicit motive*, which denoted the motivational needs and strivings that people consciously ascribe to themselves. A second change in terminology was the switch from TAT to Picture Story Exercise (PSE) as the official name for the picture story methods commonly used to assess implicit motives. The change reflects the fact that motive researchers have rarely used Murray's (1943) original TAT stimuli or the administration procedures associated with it. Instead, they frequently used pictures coming from other sources, administered the test in group settings in which participants would write their stories under timed conditions instead of having them tell their stories to an interviewer, and they used empirically derived content-coding systems for scoring the stories instead of coding systems developed based on psychodynamic theories or clinicians' consensus (Winter, 1999).

A meta-analysis by Spangler (1992) soon corroborated the fundamental validity of McClelland et al.'s (1989) two-systems model. Spangler found that across hundreds of studies, the implicit achievement motive was indeed a powerful predictor of operant behaviors, particularly if suitable task incentives were present, but not of respondent

behaviors, and that the reverse was true of the explicit achievement motive. These findings and McClelland et al.'s (1989) detailed model of motivation went a long way toward reconciling implicit motive research with the mainstream of personality psychology and convincing a new generation of researchers that the implicit motive construct was worth investigating.

This development was further facilitated by the publication of a second edited volume dedicated to the theory and assessment of implicit motives and related constructs, Smith's (1992) *Motivation And Personality: Handbook of Thematic Content Analysis*. The book featured, besides new and reprinted chapters on conceptual issues related to implicit motive measurement and validity, coding manuals for classic, revised, and new measures of implicit motives as well as cognitive styles that are expressed in people's storytelling. It also contains chapters summarizing the validation of each coding system and, in the appendix, training materials for the acquisition of coding skills in all of the featured systems. Together with Atkinson (1958), this book represents an authoritative and comprehensive source for the reader who is interested in learning how to code text for motivational imagery.

Perhaps a third, albeit less visible, promoter of the rejuvenated interest in implicit motives was the fact that since the 1970s, David Winter had developed an integrated coding system for the assessment of motivational imagery in political speeches and historical documents (Winter, 1991). This running text system allows researchers to code achievement, power, and affiliation imagery in one run, using simplified coding rules. Although developed for other purposes than for use with the PSE, many researchers have

started using Winter's running text system for coding PSE stories due to its efficiency and comprehensiveness.

So after a time of stagnation, research on implicit motives was off to a fresh start, benefitting from the fact that the zeitgeist in academic psychology had finally caught up with its basic assumptions, from new and better models, and a greater and more refined choice of coding systems. A factor that has also started to play into the rapidly increasing sophistication of implicit motive research is the fact that cognitive psychology has developed models and instruments that now help motive researchers tease apart the domains and boundaries of influence of implicit and explicit motives on a variety of processes, such as attention, learning, and memory. And biopsychological approaches to motivation, with their conceptual rigor and precision, hold particular promise for understanding the neurobiological foundations of implicit motives and the behaviors affected by them (Berridge, 2004; LeDoux, 2002). So perhaps it is not too much to hope for if we predict that after decades of relative separation from the mainstream of psychological research, the implicit motive construct will become a useful ingredient of affective neuroscience approaches to explaining behavior, one of the most rapidly growing disciplines of psychology.

We will not go into much detail about the specific developments in motive research after 1989; these are described at length in the many excellent chapters contained in this book. Instead, as a measure of the resurgence of interest in implicit motive research, we would like to note that implicit motives are featured at length in several popular textbooks of personality psychology (Carver & Scheier, 2007; Larsen & Buss, 2008; McAdams, 2009; Winter, 1996), many of which are enjoying widespread use

in undergraduate courses and are frequently updated in new editions. The *Handbook of Personality* (John, Robins, & Pervin, 2008), a defining resource for the field of personality psychology and the training of graduate students, now features in its third edition a chapter on implicit motives for the first time (Schultheiss, 2008). Its companion *Handbook of Research Methods in Personality Psychology* (Robins, Fraley, & Krueger, 2007) contains a chapter dedicated to implicit motive assessment (Schultheiss & Pang, 2007). Thus, the implicit motive construct enjoys continued as well as newfound popularity among personality psychologists and also in other disciplines, and we are confident that its impact will continue to increase as more researchers start using in their own work the conceptual and methodological tools developed by motive researchers. The purpose of this book is to document the more recent developments in implicit motive research and to be a resource for colleagues who would like to familiarize themselves with established and emergent theories and measurement approaches in the field.

Common Principles of Implicit Motive Research

Research in the field of implicit motives is defined by a set of common principles and assumptions about what implicit motives are, how they can be assessed, and how they operate. We have already mentioned some of them above; nevertheless, we think it is helpful to be absolutely clear about the assumptions guiding the study of implicit motives because they often are not made fully explicit in the work. Assumptions are fundamental, broad hypotheses underlying the actual, narrow hypotheses and the way they are tested. As such, they might be wrong (slightly or wholly) and not only for the sake of falsifiability, but also for rational and principled development of models and theories,

they need to be spelled out. So here are, in brief, the common principles guiding most of the work presented by the contributors to this volume:

1. Implicit Motives Are Nonconscious and Cannot Be Measured through Self-Report. As we have pointed out previously, this assumption has guided the field from the very beginning and has also been supported in numerous studies that have examined the correlation between the motivational needs that individuals attribute to themselves and PSE measures of the same motivational needs. Across studies and motive domains, the correlation is close to 0. This is even the case when the explicit measure is made as similar as possible to the implicit measure, as Schultheiss, Yankova, Dirlikov, and Schad (2009) have recently demonstrated.

2. *Situational Arousal of a Motivational Need Is Associated with Characteristic Changes in Thought Content and Other Nondeclarative Markers of Motivation.* This was Atkinson and McClelland's (1948) fundamental insight and idea: We may not know how a motive is manifested in behavior, but we can find a way to arouse it and then examine how thought content as manifested in picture stories changes as a function of the arousal. Virtually all motive measures were derived following this basic principle or at least validated through their convergence with measures developed in this way. There can be considerable variation in the type of situational arousal, ranging from food deprivation (Atkinson & McClelland, 1948) to subliminal tachistoscopic priming with brief sentences (Siegel & Weinberger, 1998). Although most studies so far have used changes in imaginative stories written after the situational arousal had taken place, and thought content may be a good place to start looking for arousal-induced changes, there is no a

priori reason why this approach could not also be extended to other markers of aroused motivational states.

3. Motives Represent Capacities for Specific Affective Experiences; They Orient, Select, and Energize Behavior. Starting with McClelland et al.'s (1953) work, motive researchers have conceived of motives as dispositions to seek out certain incentives for the affective changes they elicit. Because a person with a strong motive is a person who has a strong affective response to an incentive, the person orients attention toward cues predicting the possibility of such an affective experience, selects through learning predictive cues and instrumental behaviors that will allow approach toward and attainment of the incentive, and executes such behaviors with increased vigor and energy. These properties represent the hallmarks of motivation in studies with animals and humans alike (Berridge, 2004; McClelland, 1987; Schultheiss, 2008).

4. Motives Interact with Situational Incentives to Shape Behavior. This interactional view of motivation is part and parcel of classic and modern theories of motivation (e.g., Lewin, 1935; Toates, 1986) and has been a fundamental assumption of implicit motive research from the very beginning. For example, in the domain of achievement motivation, one and the same situational incentive (e.g., a task of moderate difficulty) may elicit dramatically different responses (e.g., an increase or a decrease in effort expenditure) depending on the strength of an individual's implicit motive to achieve. Conversely, the behavioral effects of implicit motives can markedly differ when critical situational features are varied in laboratory settings or real-life situations. For instance, the implicit achievement motive predicts response latencies on a mental concentration task when participants receive feedback that their performance deteriorates

but not when the feedback indicates that that they are doing well (Brunstein & Maier, 2005). Motive researchers generally adhere to Lewin's (1935) view that behavior might best be understood as the product of person and situation variables and thus seek to elucidate how implicit motives interact with environmental cues to generate meaningful patterns of behavior both within and across situations.

5. Motives Have Pervasive Effects across Several Levels of Psychological Functioning. Because early researchers—McClelland in particular—kept pushing the envelope with regard to how far the influence of implicit motive reaches, we now know that motives can have detectable effects at many levels: in the biological basement of brain and body; at the first-floor level of individuals' cognitive, affective, and behavioral functioning; and all the way up to the attic of societal, historic, and economic phenomena—a pretty breathtaking span of validity for a construct! But perhaps this span is not surprising because motives can be viewed as individual manifestations and elaborations of fundamental systems that have guided the behavior of our species in phylogenetic timespans (including historic time) and in many different environments and situations. They are bound to have marked effects on behavior at all levels.

6. There Is a Limited Number of Implicit Motives. Power, affiliation, and achievement, the motives this volume focuses on, are not the only basic motivational needs, and others, such as hunger or sex, also deserve more attention in research. However, the list of potential motives is not endless and in all likelihood limited to the small number of phylogenetically evolved motivational systems biopsychologists have described in some detail now (see, for instance, Panksepp, 1998).

Overview of the Book

The book is divided into four parts. The first part, titled "Motive Systems," provides an overview of past and current research and theorizing on the "Big Three" of motivation research, the needs for power, achievement, and affiliation. In Chapter 1, Fodor portrays the power motive as an ambivalent force behind human behavior: sometimes beneficial, such as when power motivation fuels creativity; sometimes detrimental, such as when power-motivated individuals become stressed by dominance challenges or elicit ingratiating behavior in members of their work teams. Pang, in Chapter 2, chronicles the metamorphoses of the achievement motive, from its beginnings in *The Achievement Motive* (McClelland et al., 1953) and Atkinson's (1957) influential risk-taking theory, to the work of Heinz Heckhausen (1963) in Germany who dissected the motive into a hope of success and a fear of failure component, all the way to the latest rigorous research efforts to identify the correlates of achievement hope and fear in the thoughts and behaviors of research participants. Weinberger, Cotler, and Fishman chronicle and discuss the measurement and validity of the affiliation motive in Chapter 3. Like the achievement motive, the affiliation motive consists of hope and fear components with different validity correlates: a capacity for closeness and love, also called intimacy motivation, and a fear of rejection and loneliness, captured to a large extent in classical measures of affiliation motivation. As Weinberger, Cotler, and Fishman point out, this distinction deserves greater attention in future measurement and theorizing about the motivational need to affiliate. Langens's chapter on activity inhibition concludes the section on motive systems. Activity inhibition does not represent an implicit motive in its own right, but it has been identified as an important implicit measure of self-regulation

that frequently influences the expression of motives in behavior. Because it was derived atheoretically, as a lucky finding in one of the first attempts to aid language analysis through the use of the computer in the 1960s, its impact on the behavioral expression of power and affiliation motivation was long regarded as a slight embarrassment by scholars in the field. The situation has rapidly changed in recent years, however, because researchers have started to study activity inhibition in its own right and have gained important insights into the properties and functions of this construct. The fascinating findings from this research, to which Langens has made key contributions, are summarized in Chapter 4.

The second section of this book is titled "Assessment of Implicit Motives," and the chapters in it deal with various overarching issues in motive assessment. In Chapter 5, Pang gives a state-of-the-art account of the craft of motive assessment based on content coding of picture stories. Her contribution provides excellent guidance for all the major decisions that have to be made and issues that need to be considered if a researcher wants to employ implicit motive measures: which and how many pictures to select, whether to pretest pictures, which coding systems to use, how to train coders, how to ensure high interrater reliability, and much more. Her chapter features descriptive information about the pull of a large array of frequently used pictures for the motivational needs for power, achievement, and affiliation—information that will help make the compilation of suitable picture sets for the assessment of a given motive or sets of motives less of an art and more of an exact science. Pang also sketches out her own work on a new coding system for *n* Achievement, which separates hope of success and fear of failure based on sophisticated motivational arousal experiments.

Brunstein and Schmitt (Chapter 6) present the exciting results of their efforts to develop and validate an alternative approach to motive assessment based on the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), an approach that promises a highly overdue extension of the measurement basis of implicit motives. As they demonstrate in considerable detail, their IAT measure of *n* Achievement shows convergent validity with a classic PSE measure of *n* Achievement, predicts the same criterion (physiological indicators of effort investment of easy, medium, and difficult tasks), and fails to overlap with self-report measures of achievement motivation.

Finally, Blankenship discusses the use of the computer in motivational theory and assessment in Chapter 7. In the past, computers have been used for the development and validation of a sophisticated theory of motivational processes, Atkinson and Birch's (1970) dynamics of action theory, and Blankenship highlights the basic assumptions behind this theory and its application in computer simulations that illustrate how stable motives can give rise to variable behavior. She also discusses how the computer can be used in the assessment of motives and in the analysis of thematic content in the stories collected from research participants.

By being the longest of the book, the third section titled "Basic Concepts and Processes" reflects the fact that the field of implicit motive research has been reinvigorated in recent years by a broad and rigorous exploration of the conceptual foundations and implications of the implicit motive construct. In Chapter 8, Bender and Woike summarize others' and their own impressive work on the effects of implicit motives on memory processes. Motives enhance memory for events and episodes of daily

life, particularly when these episodes are affectively charged. Integrating motivational and cognitive models of memory, Bender and Woike portray the effects of motives on each stage of information processing contributing to this robust and pervasive effect.

In Chapter 9, Stanton, Hall, and Schultheiss discuss the nature of motive-specific incentives, whose properties have not been identified and described satisfactorily for a long time. They suggest that implicit motives respond preferentially to nonverbal incentive stimuli and contrast this mode of functioning with explicit motives, which respond primarily to verbal incentives. They also present a more specific model derived from the nonverbal-processing hypothesis, motivational field theory, which holds that nonverbal emotional signals of a sender serve as motivational incentives for the perceiver, an effect that depends critically on the perceiver's implicit motives.

Hall, Stanton, and Schultheiss then descend into the biological basement of motives in Chapter 10. As these authors point out, evidence for a strong and specific biological basis for each of the major three implicit motives has been accumulating since the 1960s, and this evidence may be among the strongest for the validity of the implicit motive construct because it gets very close to the actual neurophysiological substrates of motivation. Hall, Stanton, and Schultheiss provide a review of the older literature on the biopsychology of motives and integrate it with more recent work on the behavioral endocrinology of the big three motives. They also report findings from recent brain imaging work on the role of the needs for power, affiliation, and achievement on brain activation responses to facial expressions of emotion.

The next two chapters of this section deal with a fundamental and pervasive finding in motive research and its implications: the statistical independence between

implicit motives and the motivational needs and strivings people ascribe to themselves on questionnaires. Thrash, Cassidy, Maruskin, and Elliot (Chapter 11) provide a careful and thought-stimulating analysis of the methodological and conceptual reasons for the low overlap between implicit and explicit motives. They also discuss a variety of moderators that influence the degree to which people's implicit motives and self-attributed needs converge and that have emerged in research conducted over the past 10 years. In Chapter 12, Brunstein then discusses the consequences of the matches and mismatches between implicit motives and explicit goal strivings for emotional well-being. His review of the literature clearly shows that although implicit motives and explicit goals represent independently operating systems for the regulation of behavior, they interact in shaping feelings of elation and dejection that depend on the degree to which individuals succeed or fail at motive-congruent goals. In tandem, the chapters by Thrash et al. and Brunstein emphasize the validity of the basic assumption of implicit motive research—that people generally do not have introspective access to their motivational needs—and demonstrate how the concepts and methods developed by the field can be used for addressing one of the fundamental issues of psychology since Freud, the independence of and dynamic interactions between conscious and unconscious realms of the psychic apparatus.

Baumann, Kazén, and Kuhl (Chapter 13) present a principled conceptual account of implicit motives from the perspective of personality systems interaction (PSI) theory. PSI theory holds that affective and cognitive macrosystems interact in shaping people's volitional, motivational, and self-regulatory adjustment to situational demands and affordances. According to Baumann, Kazén, and Kuhl, implicit motives are rooted in one of the cognitive macrosystems, extension memory, and moderate the interactions between

and typical configurations of affective and cognitive systems. PSI theory also yields a new, more differentiated measurement approach for the assessment of each of the big three motives, the Operant Motive Test, whose measurement credentials the authors describe and discuss in this chapter.

The fourth and final section of the book deals with "Interdisciplinary and Applied Aspects" of implicit motives. Winter (Chapter 14) discusses the political and historical correlates of implicit motives and provides a breathtaking vista of the findings he and his collaborators have collected over the years. His research shows that the motivational needs of political leaders predict their behavior in office and that the secret to belligerent or peaceful resolutions of conflicts between countries is the degree to which the communication between the parties involved reflects power-related or affiliative themes. Here is hope that some fundamental laws driving the course of history can be identified and measured empirically and that this knowledge may one day be used to predict and prevent violent conflicts.

Since McClelland's (1961) seminal work on the cultural origins and correlates of the achievement motive, one of the strengths of research of implicit motives has been its focus on the cross-cultural commonalities of and differences between the eliciting conditions and behavioral manifestations of motivational needs. Like few others in recent years, Hofer has pushed the limits on the effects of culture on motives with his rigorous and painstaking work on cultural influences on motives and their effects on well-being and behavior in Germany, Costa Rica, Zimbabwe, and other countries. He provides an overview of the key findings resulting from this impressive research program and integrates them with earlier work in Chapter 15.

In contrast to the long tradition of cross-cultural work on motives, their role in clinically relevant syndromes and disorders has received scarce attention in research. This is particularly amazing in light of the fact that implicit motives play a critical role in people's emotional well-being (see Chapter 12), and it therefore appears likely that they also might influence the occurrence of mood disorders. Weinberger, Cotler, and Fishman (Chapter 16) are the first to explore the role of implicit motives as vulnerabilities for and protective factors against psychological problems. Their work on oneness motivation, a member of the family of affiliative needs, indicates that this disposition is associated with beneficial outcomes of psychotherapy and may promote mental health.

Boyatzis and Kelner, in Chapter 17, discuss the role of competencies, which are rooted in, and are measured through similar content-coding procedures as, implicit motives in business and management contexts. Competency assessment has been used successfully to identify individuals who will show superior performance in specific jobs. Boyatzis and Kelner provide an overview of the links between job competencies and other measures of managerial success and job-related emotional intelligence.

Last but not least, Rheinberg and Engeser summarize their work on motivational training of teachers, students, and their parents in Chapter 18. In groundbreaking studies conducted over the past 30 years, Rheinberg has shown that motivational training can help reduce fear of failure in the classroom and bolster hope of success through the setting of individual norms instead of social norms. Rheinberg and Engeser also discuss the issue of motivational competence, that is, individuals' ability to accurately perceive the strength of their implicit motives and to set their goals accordingly. Many of Rheinberg's findings are presented in English language here for the first time.

Science is a collaborative effort, and good scientific concepts need the nurture and care of many brilliant and creative minds. This is also true for research on implicit motives in general and the path that has led us to the conception and publication of this volume in particular. We thank our excellent, knowledgeable contributors for bearing with us through the various stages of this book. Without them and the work that they present here the field would be in a state of intellectual anemia; thanks to them, it is brimming with exciting new ideas, theories, and measures. Thanks to them, we have every reason to hope for future growth and groundbreaking new insights in the field of implicit motives!

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