

INTEGRATIVE CAPACITY AND THE EVALUATION OF LEADERSHIP *A MULTIMETHOD ASSESSMENT APPROACH*

LESLIE PRATCH

University of Chicago

JORDAN JACOBOWITZ

Northwestern University

ABSTRACT. The relationship between integrative capacity and evaluations of leadership effectiveness was examined in a nine-month program for developing business leaders. Integrative capacity was conceptualized as a central dimension of the structural psychological characteristic, active coping, and differentiated from the cognitive construct, integrative complexity. Self-report, semiprojective, and projective measures of integrative capacity obtained at the beginning of the program were correlated with peer and faculty ratings of leadership at the end of the program. Significant correlations ranged from .27 ($p < .05$) to .52 ($p < .001$). Intelligence and integrative capacity contributed separately to leadership. The findings support the value of examining variables related to personality structure and the use of projective techniques to assess candidates for positions of business leadership.

In this article, we address the relationship between personality and effective leadership in business settings. In particular, we examine the structural psychological characteristics associated with perceptions of small task group leadership effectiveness in a fluid situation. Previous empirical research has focused on discrete personality traits and isolated behaviors as determinants of effective leadership. This approach has had limited results, as narrowly defined traits have frequently been found to be situation specific in their associations with leadership. Maintaining effective leadership in business settings requires the capacity to respond in a differentiated manner to emergent and fluid situations (Carroll & Gillen, 1987; Kotter, 1990; Skinner & Sasser, 1977; Whitley, 1989). This capacity, in turn, depends on the ability to develop continually new skills for coping with change. The literature, however, has largely neglected a developmental perspective.

To understand how and why an individual functions in a specific way at a specific stage of development, we may distinguish between two types of theories and models: those that view the issue from a developmental perspective and those that discuss it from a current-state perspective. Developmental models are concerned with the ontogeny of relevant aspects of the individual, the timing and environmental events in his or her past and present, and the ways these factors interact to produce current functioning. Models that emphasize the current perspective analyze and explain why individuals function as they do in isolation from developmental processes that may have led to the individual's present state and that may lead to future behaviors. Such accounts are framed in terms of one major quality of the individual at a time and only secondarily in terms of the relationships among these qualities.

Developmental models typically view personality as a complex structure, having characteristic and relatively stable functional dimensions that interact and respond to changing internal and external circumstances. The term *structural* refers to the relations among different components, or functions, of personality. From this perspective, underlying dimensions of the personality structure determine the degree of flexibility, consistency, resiliency, and creativity of an individual's responses across situations. There are personality structures that exhibit relatively fixed and circumscribed responses to diverse circumstances just as there are those that demonstrate a wide variety of responses to an evolving situation. Indeed, it is both differences between structures ("interindividual variability") and within structures ("intraindividual variability") that determine how a specific individual behaves in a specific situation.

Accordingly, we have proposed that effective leaders possess personality structures capable of responding to static and changing circumstances in adoptively resourceful ways (Pratch & Jacobowitz, 1997). This resourcefulness is

conceptually linked to the structural construct, active coping (Shanan, 1990), as rooted in the ideas of David Rapaport (1951), Carl Rogers (1961), and other “ego” and “self” psychologists. Measures of active coping, in turn, have been empirically related to perceptions of leadership effectiveness over nine months in a fluid businesslike situation (Pratch & Jacobowitz, 1996).

Conceptually, active coping is a characteristic of a psychologically healthy personality structure. Individuals who possess such personality structures can tolerate the tension inherent in openly perceiving internal and external events that may be challenging, threatening, or conflict arousing. Moreover, they maintain the ability to formulate and implement strategies to meet or resolve the challenges, conflicts, or threats they encounter. These strategies, which operate consciously and unconsciously, are designed to seek an adaptive balance between external environmental demands, regulations, and constraints, on one hand, and psychological aspirations, needs, and morals, on the other hand. Active coping is manifested in the individual’s propensity to strive to achieve personal aims and overcome difficulties rather than passively retreat or be overwhelmed by frustration, whether the problem originates in the self or in the external environment.

Active Coping versus Other Conceptions of Coping

Active coping relates to a relatively stable, albeit complex, psychological orientation across time and circumstance. It is not meant to predict situation-specific, consciously decided-on strategies of handling problems (cf. Lazarus & Folkman, 1984). Neither is it viewed as a trait in the narrower sense of the word (cf. Hogan, Curphy, & Hogan, 1994). Cognitive, behavioral, and trait constructs of coping focus on situation-specific dimensions of individual functioning. Within that temporal framework, human behavior is essentially fragmented and reactive to either fixed, methodical, and in many respects, mechanical inner thoughts or dispositions or to externally imposed pressures and reinforcements. In effect, the person has no choice but to respond in a predetermined, circumscribed manner. From the perspective of active coping, that circumscribed mode of response is characteristic of passive coping, an inclination to submit automatically to internal or external demands. Active coping, by contrast, implies the potential to transcend these compulsions and to select (consciously and unconsciously) from among an array of possible responses the one that seems most constructive in maintaining the sought-after balance between self, including one’s values and beliefs, and environmental demands. In many cases, the response selected is a novel one, created for the unique situation that is encountered.

Active coping contributes to healthy personality growth and adaptation by optimizing adaptation to a specific problem and also by fostering continuing psychological complexity, differentiation, self-confidence, and resourcefulness. Success (and even failure, if integrated into the personality) creates an expanded experiential knowledge base that potentiates later coping activities. Active copers “feed” on experience; they not only store their experiences, and their reactions to them, but also synthesize these experiences into their psychological organizations. This integrative activity contributes to the structural complexity of the psychological system, which, in turn, becomes more competent in its capacities to tolerate tension and devise new strategies for adaptation and growth.

Assessment of Active Coping

From a structural perspective, one key to understanding personality is to recognize the existence and dynamics of unconscious psychological phenomena and their relations to more conscious, experiential, and observable psychic phenomena. An implication of this view is that assessing only surface aspects of personality has limited relevance for understanding and explaining the functional whole. Underlying structural dimensions must also be assessed. In the assessment of active coping, it is necessary to capture the multidimensional nature of the variable.

Evaluating the degree of presence of the same conceptual variable across different levels of behavior makes it possible to operationally link different assessment techniques with conceptually different levels of consciousness and, ultimately, to relate those conceptual levels to their roles in maintaining psychological structures (Leary, 1957; see also Pratch & Jacobowitz, 1997, for discussion). Some individuals demonstrate active coping at the level of overt behavior (i.e., on self-report measures) but reveal passive coping tendencies at the semiconscious and unconscious levels (i.e., on

semiprojective and projective measures). Some individuals exhibit passive coping tendencies at the conscious level but reveal active coping at the preconscious and unconscious levels. The ideal active copier displays active coping tendencies across all three levels of psychological functioning. The more similar the active coping tendencies on each level, the more balanced the personality and the more stable the personality over time. The greater the discrepancies among levels, the less stable the personality and the more likely that change will occur in the direction of unconscious tendencies. This latter dynamic is particularly relevant to a developmental model because change in behavior over time is in part a consequence of structural organization.

Integrative Capacity

Active coping is not specific to a particular type of leadership or leadership situation. To the contrary, it should contribute to effective leadership in the same way that it undergirds an individual's performance effectiveness on any complex task—as a global competency that permits the integration of different aspects of self and experience and which facilitates their application to successive parts of the environment. Although necessary for effective leadership, other variables are also important. These include the individual's motivations, specific knowledge, skills, and abilities, and the characteristics of the situation (Pratch & Jacobowitz, 1996, 1997).

A central dimension of active coping that contributes to effective leadership is the readiness to acquire and process information, which we are calling *integrative capacity*. By this label, we mean to differentiate it from the strictly cognitive psychological construct, integrative complexity. Integrative capacity reflects integrative activity across levels and functions of personality — not only cognitive, but also affective, motivational, fantasy, and ultimately, unconscious. This study examines some of the pragmatic implications of integrative capacity for leadership in business settings.

LITERATURE REVIEW AND RESEARCH QUESTIONS

A central dimension of active coping is maintaining relative autonomy from internal and external demands on the ego (cf. Rapaport, 1957). Such autonomy permits simultaneous awareness of one's values, motives, and internal conflicts, on one hand, and of pressures and circumstances in the external environment, on the other, without allowing either source of motivation to govern exclusively one's inner reactions and outer behaviors. Instead, these reactions and behaviors can be determined by careful appraisal of the total constellation of self and environment and the selection of reasonable responses to it. Leaders displaying this characteristic of integrative capacity—that is, the ability to perceive openly, tolerate, and comprehend intricate patterns of internal and external stimulation—will be more likely than those who do not display this characteristic to find workable solutions to conflicts arising from discrepancies between their personal aims and those of the groups they lead.

An effective leader can usually identify a set of personal goals and interests as well as the goals and interests of key individuals who may help or hinder planned projects. The failure to perceive and absorb the complex matrix of incoming information would limit greatly any leader's facility to respond to new circumstances. The wider the leader's grasp of the situation, the greater the likelihood of finding successful solutions.

Integrative Capacity versus Integrative Complexity

The cognitive psychological construct of integrative complexity has been extensively used in research on individual differences in styles of thinking (Schroder, 1971; Streufert & Streufert, 1978; Tetlock & Suedfeld, 1988). Operationally, two dimensions of cognitive style comprise integrative complexity: evaluative differentiation (the capacity and willingness to grasp different perspectives) and conceptual integration (the capacity and willingness to link different viewpoints, to understand why different individuals may interpret the same event in different ways, to appreciate interactive patterns of causation, and to confront trade-offs) (Schroder, Driver, & Streufert, 1967; Schroder & Suedfeld, 1971; Suedfeld, Tetlock, & Streufert, 1992). In a study of statesmen during severe national and international crises, the

capacity to tolerate and deal with complexity was characteristic of those persons with the longest retention of high-ranking positions in international decision-making and diplomacy (Wallace & Suedfeld, 1988). In a study on master of business administration (MBA) candidates, the more complex thinkers were more independent, creative, open to new and varied experiences, and able to bring disparate ideas into a meaningful whole (Tetlock, Peterson, & Berry, 1993). An integratively complex cognitive style is also correlated with the tendency to show self-direction when subjected to pressures to conform to group norms and to the orders of authority figures (Harvey, Hunt, & Schroder, 1961; Schroder et al., 1967; Streufert & Sweeney, 1986; Tetlock, 1979, 1983, 1984; Tetlock & Kim, 1987). The independent judgment noted in integratively complex thinkers may stem from the tendency to refrain from jumping to conclusions in response to ambiguous information and the readiness to think flexibly in the face of contradictory evidence (Tetlock, 1985). Integrative complexity may also be a way of coping cognitively with disruptive events (Suedfeld & Bluck, 1993).

The construct of integrative complexity as featured above is defined as a cognitive attribute. The structural construct of integrative capacity goes beyond sheer intelligence. Cognitive ability, although necessary, is not sufficient to assure the psychic resilience and cohesion necessary to engage in open and synthetic thinking. Affective processes are also involved.

Any useful theory of leadership is based on the premise that a successful leader fulfills some of the needs of the group by helping its members manage the internal and external environment (Bass, 1990; Chemers, 1984). For some theorists, such needs may involve coping with any facet of the group's performance (cf. Burns, 1978). For others, these needs are restricted to the structuring of relationships among the members and their objectives (cf. Hemphill & Coons, 1957). Leaders are more likely to be able to meet these needs if they can sense what is needed by the group's members. One would therefore expect effective leaders to show sensitivity to and awareness of the feelings and attitudes of those around them. In support of this view, a reanalysis of data on emergent leaders showed that from 48% to 82% of the variance in leadership ratings could be explained by a stable personality attribute described as "the ability to perceive the needs and goals of a constituency and adjust one's personal approach to group action accordingly" (Kenny & Zaccaro, 1983, p. 678). The authors concluded that individuals who emerge as small-group leaders develop acuity in anticipating the needs of their followers and change their own behaviors to respond more effectively to those needs.

This article examines the relationship between effective leadership and the leader's capacity to remain open to internal and external sources of cognitive and affective information. More specifically, we ask: Do effective leaders as compared with less effective leaders show a greater tendency to exhibit integrative capacity or the openness to synthesize intrapersonal and environmental complexity? In addition, the previous theoretical discussion raised a second question regarding the relationship between cognitive ability and integrative capacity. To what extent do cognitive ability and integrative capacity contribute independently to effective leadership? The openness to cope with cognitive and affective sources of information seen in integrative capacity distinguishes it from the cognitive psychological construct of integrative complexity.

METHOD

Setting and Population

Data for this study were taken from a larger study on personality factors influencing small-group leadership among MBA candidates at the Graduate School of Business at the University of Chicago. The setting was an intensive, experiential leadership education and development course called LEAD. LEAD was designed to help students take responsibility for their own education by working together in the setting of an unstructured task group. Each winter, approximately 50 first-year MBA students were selected to design, plan, and deliver a course on leadership, which would be required of all incoming MBA students each fall. The designing and planning phase took place during the spring and summer quarters. In the fall, the students delivered the class they had developed to the incoming students. Because of their role in delivering this class, the participants were known as LEAD facilitators. Participation as a facilitator gave students two tuition-free course credits.

Although faculty supervised and graded the facilitators, the latter functioned as a leaderless task group. LEAD's design was deliberately fluid and undefined to level structural factors that might legitimate the authority of a particular individual or class of individuals. Therefore, every facilitator was a potential leader, and the facilitators are the leaders referred to in the hypotheses.

In 1991, 118 first-year students applied to be facilitators. From this pool of 118, 51 students were selected by a faculty-student committee based on an evaluation of applicants' essays and interviews. In particular, the selection committee considered variables related to the applicant's leadership potential, including leadership competency, ability to function as part of a team, ability to inspire trust and to motivate others, listening and time-management skills, and other spring and fall commitments.

During the spring of 1991, the entire group of 51 met three times each week for three hours each meeting to develop and plan the fall class. They also met in smaller committees throughout the spring and summer. During the fall, they broke into teams of four to deliver the class they had developed to groups of approximately 50 students. The entire group of facilitators also met once a week during the fall to coordinate their activities.

Regulations regarding the performance of standard duties and routine activities in LEAD were minimal. There were virtually no predefined roles or procedures. Facilitators had to find their own means of gathering and distributing information to one another as well as procedures for decision-making, planning, and problem solving. Each week, a different subgroup of four facilitators had the formal responsibility to move the overall group toward its goal. The aim of the group, however, was itself vague. The facilitators were asked only to design and implement an innovative and successful class on leadership.

Due to the ambiguity and fluidity of role relationships and responsibilities in the program, an opportunity was created for leaders to emerge across a variety of different task-group situations. Students who were perceived to be the most effective leaders by the other group members would also be those who emerged as leaders in terms of informal prestige in the group. Because the emergence or success of a leader frequently hinges on the perceptions of his or her effectiveness by peers and supervisors, LEAD provided an ideal setting for the empirical examination of the relationship between personality and the evaluation of small task group leadership.

Participant characteristics. The criterion for participating in the study was that the student had applied to be a facilitator. Participation was voluntary in return for individual feedback on the psychological tests and their relevance for leadership effectiveness after the data were collected. Of the 51 facilitators, two refused to participate in the study and one protocol was lost to due to a computer virus. Therefore, the final number of LEAD facilitators in the study was 48. This group is referred to as the LEAD group. The 67 students who had applied to be facilitators but were not selected were asked to serve as members of a comparison sample. Because a number decided to pursue studies abroad, however, only 23 students could participate. This group is referred to as the comparison group. The LEAD and the comparison samples were similar with respect to age, gender, marital status, ethnicity, and country of origin. Participants came from all parts of the United States and the world.

The LEAD sample included 13 women and 35 men. This gender ratio reflected the actual composition of that year's GSB class. The mean age of the participants was 27 years ($SD = 2.98$; range = 22-40 years; females, 26.75 years, $SD = 4.33$; males, 27 years, $SD = 2.43$). Eighty-seven percent of the students were White, 6% were Asian, 4% were African American, and 2% were from India. Eighty-five percent of the students were U.S. citizens, 9% were from Western Europe, 4% were from Japan, and 2% were from India. Twenty-eight percent of the students were married. The comparison sample included seven women and 16 men. The mean age was 26.9 years (range = 23-33 years). Eighty-seven percent were white, 9% were Japanese, and one participant was Indian. Eighty-three percent were U.S. citizens; the remaining participants were citizens of South America, India, and Western Europe. Seventeen percent were married.

Assessment Strategy

In 1957, Timothy Leary developed a model to assess personality that forms the basis for the assessment strategy used in this study. Leary proposed that personality dynamics could be understood in terms of the relations among different levels of personality. He identified five levels of personality, characterized in terms of the degree of

consciousness of personality strivings and functioning. The levels ranged from overt, consciously controlled behavior, to covert, ever-decreasing levels of conscious control. To define the levels in terms of operational behaviors, Leary drew from interpersonal theories that viewed responses to psychological assessment instruments as statements that the individual wants to make about himself or herself and suggested that a battery of assessment instruments that ranged from objective to projective be used to assess individuals on the same conceptual variable on each of these levels of communication about the self.¹

Leary (1957) related consistency and variability of behavior to the degree of congruence among different levels of personality. Intralevel incongruence or discrepancies between levels is a state of intrapsychic conflict or personality disequilibrium and as such is inherently unstable. Leary assumed that, other things being equal, a personality system in conflict will strive to reduce conflict or achieve balance by changing peripheral behaviors in the direction of inner strivings. In this way, unconscious strivings beyond the range of conscious control could influence conscious feeling, cognitions, and actions.

Our assessment strategy included Leary's (1957) second and third levels and also an intermediate level. Leary's second level, the "level of conscious communication," referred to how a person viewed his or her own behavior. It was assessed by interview statements and self-report measures. The third level, the "level of private perception," referred to the way the person wanted to be or imagined him- or herself to be. It was closer to the person's drives than the more peripheral levels and was assessed using the Thematic Apperception Test (TAT) (Murray, 1938). This level may be characterized as the "level of unconscious communication" because, in responding to projective techniques, one communicates something about oneself—although one does not know the exact nature of the meaning of that statement.² Finally, an intermediate level of communication about the self, a level of semiconsciously controlled communication, may be assessed using a semiprojective technique such as a sentence completion test. Personality structure can then be characterized in terms of discrepancies in manifestations of active coping. Differences in the patterning of discrepancies reflect differences in personality structure. Individuals generally are characterized by discrepancies in manifestations of active coping, within or among levels. In theory, the greater the intralevel consistency of a variable, the more stable is the manifestation of behaviors related to that variable.

Self-report, semiprojective, and projective techniques provided measures of integrative capacity on three different levels of psychological experience. The levels included the level of consciously controlled communication about the self, the level of semiconsciously controlled communication about the self, and the level of communication beyond conscious control. For simplicity, responses to semiprojective and projective techniques are denoted as preconscious and unconscious levels of communication, respectively.

Integrative capacity involves emotions, motivations, fantasies, intuitions, fears, and personal experiences in addition to information regarding the specific manifest situation. We wanted to assess the degree to which a person was open and able to integrate cognitive, affective, motivational, and fantasy input, and ultimately, unconscious material. To determine whether integrative capacity exists across levels, we needed to sample functioning on different levels. We sought to obtain measures of integrative capacity across three levels of psychological experience to differentiate individuals in terms of the degree of intralevel congruence on that variable. We assumed that the greater the stability across levels, the greater the stamina of leadership across situations and time, and we expected that intralevel congruence would be most highly correlated with leadership effectiveness.

Personality Variables

Three psychological assessment instruments provided measures of integrative capacity across three levels of communication about the self. The Ways of Coping Questionnaire (WCQ) (Folkman & Lazarus, 1988) is a self-report instrument designed to assess situation-specific cognitions and actions. The respondent is instructed to focus on a

¹ See the *Journal of Personality Assessment*, Volume 66, Number 2, for a recent commentary on "Timothy Leary's Legacy: The Interpersonal Theory and the Interpersonal Circumplex."

² To measure active coping at this level, one looks at formal aspects of thought related to articulation of the perceptual field, such as extent of differentiation (e.g., complexity) and extent of integration (e.g., logical control), rather than at the content of fantasy.

particular episode during the past week that was experienced as either taxing or stressful and to respond to each of 150 items on a four-point scale indicating the frequency with which a particular coping strategy was used (0 = *does not apply or not used*, 3 = *used a great deal*). Each item loads onto one of eight empirically derived scales. Reliabilities for the scales have been found to be higher than those reported for most other measures of coping. Stability of factor structure across populations and stressful episodes has not been determined. Evidence of construct validity appears in the fact that research findings are consistent with the authors' definition of coping as a situation-specific process, involving both problem-focused and emotion-focused strategies. Studies establishing the reliability and validity of the WCQ for research purposes are reviewed in the manual. Completed tests are sent to the publishers to be scored by computer.

WCQ operations. Four WCQ scales were selected to assess behaviors reflecting openness to complexity at the level of consciously controlled communication about the self: Positive Reappraisal, Accepting Responsibility, Confrontive Coping, and Escape-Avoidance. Whereas Confrontive Coping and Escape-Avoidance relate to the openness to perceive complexity, Positive Reappraisal and Accepting Responsibility relate primarily to synthesizing capacity. In particular, Positive Reappraisal describes cognitive-emotional operations that create positive meaning for the respondent by focusing on personal growth. It emphasizes altering one's interpretation of the stressful situation in a way that allows one to learn from it, move beyond it, and grow. Accepting Responsibility consists of items relating to tendencies to recognize one's role in a stressful event, with a related theme of trying to put things right. Both Positive Reappraisal and Accepting Responsibility imply a readiness to accept the situation and deal with it in a constructive, growth-oriented fashion. By contrast, Confrontive Coping and Escape-Avoidance imply a defensiveness that obstructs synthesizing activity. Escape-Avoidance relates to cognitive and/or behavioral efforts to escape or avoid the awareness of distress. Confrontive Coping involves aggressive efforts to change the situation, which have implications of hostility and risk taking. It indicates an unwillingness to accept responsibility for one's role in the situation. Because high scores on these scales were considered indicative of the converse of openness, they were negatively weighted to provide measures of openness to perceive complexity.

The Shanan Sentence Completion Technique (SSCT) (Shanan, 1973) was designed to assess active coping as a structural characteristic. It focuses on mental health rather than pathology, examining the capacity to adapt and grow. Specifically, it looks at the capacity of the participant to respond to stress. The test itself is a stressful situation: One must make a decision about what to say and commit to that response. Although one knows one is saying something about the self, the particular meaning of the statement is not clear to the respondent. Not knowing how one's responses will be interpreted, one has only partial conscious control over what is communicated about the self. Therefore, the SSCT was used to assess coping behaviors that are only semiconsciously controlled.

The SSCT consists of 40 sentence stems, 10 stems comprising one of four categories. Items in the first two categories elicit responses indicative of the extent to which the respondent is open to experience and able to clearly articulate aims (Category 1) (e.g., "What she liked most ____") and sources of frustration and difficulty (Category 2) (e.g., "Nothing was more frustrating than ____") in terms of persons, things, and events in the external environment. Items in the last two categories examine the respondent's tendency to overcome obstacles and continue to strive to achieve aims in a constructive and effective manner (Category 3) (e.g., "When nobody helped her, she ____") while maintaining positive self-esteem and a gratifying sense of achievement (Category 4) (e.g., "She often thinks she is ____"). Scoring requires evaluating each response as positive or negative, that is, as signifying active or passive coping. High scores are theoretically indicative of the capacity to respond adaptively to stress and to grow. Low scores are indicative of excessive reactivity to or dependence on internal impulses or drives and the environment.

The SSCT has been used in Israel and the United States during the past 30 years for a variety of research and applied tasks including the selection of medical school students (Jacobowitz, 1976) and research on adult development (Jacobowitz, 1984; Shanan, 1985; Shimonaka & Nagazato, 1980). Predictive and construct validity have been demonstrated in a variety of settings including medical school, work, adjustment to a new culture, and maintaining mental health under taxing conditions (see Shanan, 1990). Evidence of predictive validity appears in the sense that respondents have adapted to stress according to their own idiosyncratic styles of coping and in the sense that lack of stability of coping style indicated not only change but also the direction of change. Further evidence of predictive validity are the results of our research showing that measures of active coping predicted leadership effectiveness over a nine-

month period in a relatively diffuse, businesslike situation (Pratch & Jacobowitz, 1997a). A study on integration in and isolation from social networks provided construct validating data: Passive coping characterized underprivileged youth and orphans as compared to adolescents from the same ethnic background who had been placed in special progress programs (reported in Shanana, 1990). Further measurement information is reported by Shanana (1990).

The SSCTs in this study were scored by the first author. The second author scored 40 tests selected at random from the entire sample without discussing scores with the first author. Both scorers were blind to the identity of the respondent (i.e., with regard to name, gender, marital status, and LEAD or comparison group affiliation). Interrater agreement for the SSCT categories reported in this study was .95.³

SSCT operations. One category of scores involves the number of “rejections” of items. Rejections are scored when responses are not articulated, in other words, when they are absent or quite vague. Rejections, then, are indicative of passive coping. There are three types of rejections. Rejection 1 is scored when the respondent does not answer anything to the sentence stem: There is a breakdown of coping with this item. Rejection 2 is scored when the response avoids saying anything about the self. This is essentially a rejection of the question itself (e.g., “It is tempting to think of tempting thoughts” versus “becoming CEO of a Fortune 100 company”). Finally, Rejection 3 is scored when the answer says something about the self, but it is vague or ambiguous; one does not know exactly what is meant (e.g., “It is tempting to think of the future instead of the present”). Rejection 1, Rejection 2, and Rejection 3 reflect the degree of openness to stimulation and as such were the three independent variables that we expected to be negatively correlated with leadership at the level of semiconsciously controlled communication about the self.

The Thematic Apperception Test (TAT) (Murray, 1938) is a projective technique. It provided samples of fantasy that were used to assess integrative capacity at the level of communication beyond conscious control. Participants were asked to make up stories to five ambiguous pictures: Cards 1, 2, 8BM, 13MF, and 17BM. These have proven adequate for research with adults in the assessment of coping at the level of imaginative thought (for a review, see Shanana, 1990). Participants’ stories were evaluated on four scales designed to assess integrative capacity: Differentiation, Extent of Time Perspective, Number of Conflicts Expressed, and Degree of Logical Control. These scales have proven reliable and valid in more than three decades of research on coping and adaptation (Jacobowitz, 1984; Shanana, 1985). The TAT was used to assess behaviors at the level of communication beyond conscious control. It was selected to assess that level of personality functioning because the criteria quantified, as detailed below, are unlikely to be consciously manipulated by respondents.

TAT operations. Scoring criteria for the coping measures on the TAT are reported below. The TAT stories in this study were scored by the first author and an assistant, following standard interrater reliability procedures. Neither scorer was aware of the scores the other had assigned. Interrater agreement for the scales listed below was computed for the entire sample and was .9.

The TAT stories were scored for the presence and quality of conflict described. There were three categories of conflict: intrapersonal (i.e., between competing motives), interpersonal (i.e., between two or more individuals), and environmental (i.e., between a person and an impersonal force). A given category was scored only once per story. The number of conflicts described was the score given the story on this measure, yielding a range from 0 to 3 (0 to 15 across the five stories).

The total number of adjectives and adverbs was computed for each story, and scores across the five stories added to produce a measure of Differentiation. That measure relates to the capacity to perceive complexity in the personal field. Theoretically, the more multifaceted the respondent’s description of events in the TAT stories, the greater the likelihood of finding adaptive, creative solutions to problems.

Each story was scored for the presence of past, present, and future tense(s), yielding a range from 1 to 3 (5 to 15 across the five stories). Extent of Time Perspective relates to the ability to organize complexity in a temporal sense

³ The coefficient used to estimate interrater agreement was derived by the following formula: (the number of actual agreements minus the number of agreements that would occur by chance) divided by (the number of items minus the number of agreements that would occur by chance).

(Shanan, 1985). High scores indicate a readiness to link past events to present stressors and assess the present situation in light of future outcomes.

Stories were scored on a 3-point Likert-type scale for the degree to which events described in the story are logically interrelated (1 = *logical*, 2 = *mostly logical*, and 3 = *illogical*). Theoretically, the perception of cause and effect is required to link internal responses to external processes and to integrate the perceived relationships into the self. Logical control enables the respondent to produce a coherent story and to function cohesively across changing conditions over time.

The sum of the standardized scores on these four scales comprised the overall measure of integrative capacity on the TAT, Organized Complexity. Logical control was weighted twice in this procedure to reflect the theoretical importance in healthy functioning of the ability to link complexity in a logical, cohesive, and coherent fashion. The correlations among the constituent scales were sufficient to justify their combination (see Table 3). The global measure, Organized Complexity, relates to the cognitive-motivational orientation of the individual. It is intended to represent differentiation and integration of the stimulus domain. Conflict, time perspective, and differentiation relate to the ability to perceive complexity in the personal field. Logical control relates to the extent of cohesiveness and clarity in field articulation.

The variable *integrative capacity* was created to provide a multilevel measure of integrative capacity to examine the notion that intralevel congruency would be more highly correlated with leadership than would measures at any single level. This measure was the sum of the standardized scores on the six measures of integrative capacity: Escape-Avoidance; Confrontive Coping; Positive Reappraisal; Accepting Responsibility; Rejection 1, 2, and 3; and Organized Complexity. Before adding the scores together, the measures that we expected to be negatively correlated with leadership (i.e., Escape-Avoidance, Confrontive Coping, and Rejection 1, 2, and 3) were negatively weighted.

Graduate Management Aptitude Test (GMAT). The second research question differentiated the structural characteristic, integrative capacity, from integrative complexity conceptualized as a strictly cognitive construct. To partial out the potentially confounding effect of intelligence on the relationship between leadership and integrative capacity, we used GMAT scores as a covariate. GMAT is a test of general verbal and mathematical abilities used to predict academic performance during the first year in graduate schools of management. One participant did not give permission to use his GMAT score; therefore, the analyses examine correlations for 47 individuals.

Dependent Variables

The 48 facilitators and three faculty who supervised them rated each facilitator for his or her performance during the program on three 5-point Likert-type scales, ranging from 1 (low) to 5 (high). That is, each facilitator received 47 ratings from fellow facilitators and three ratings from faculty. The scales included (1) contributing to the achievement of an identified task, (2) motivating others to work together toward accomplishment of a task, and (3) not causing resistance in others that slows the accomplishment of the task. The use of this set of scales was mandated by the director of LEAD based on his understanding of leadership as a complex, multidimensional construct. Given this view, variability in the correlations among the scales was expected. In fact, the intercorrelations were .8 (1, 2), .4 (2, 3), and .2 (1, 3). Because the correlations between each of the scales and the predictor variables were in the same direction and within a reasonable magnitude, the scales were combined to form a single measure of leadership. The standard deviations for each facilitator on this measure ranged from 0.2 to 1.2. The small standard deviations indicated high interrater agreement, justifying the use of the average student and average faculty ratings to form two summary measures of leadership. These were created by rank ordering the scores on each scale for the subjects and adding the average rank-ordered scores on the scales according to the respective faculty and student ratings. This procedure yielded two aggregate measures of leadership: an average faculty and an average student rating. The correlation between the average faculty and average student ratings was .78. The high correlation between the two measures justified combining the measures to create a final composite measure of leadership, which consisted of the average faculty plus two times the average student rating. The average student rating was weighted twice as much as the average faculty rating in this procedure because of the greater reliability of the former. The average student rating was viewed as more reliable because it had a lower standard deviation, thus indicating greater interrater agreement, and because it was based on the

perceptions of 48 facilitators, whereas there were ratings from only three faculty, making the average student rating the statistically more reliable measure. The final measure yielded a potential range of 5 to 45 and an actual range of 24.1 to 38.3 ($M = 30.5$, $SD = 3.5$).

Whereas most studies look at measures of group outcome, this study looked at measures of individual leadership based on the perceptions of peers and external authority figures across different leadership situations. It thus took advantage of the natural flexibility and variability of behavior. It was not possible to collect objective ratings of leadership due to the deliberately unstructured nature of the program. Followers' perceptions of leadership were not collected due to logistical difficulties in that particular field setting. Peer ratings, however have been consistently useful predictors of future performance (see Kane & Lawler, 1978, for a review). Moreover, given the selection criteria for LEAD, the raters were likely good judges of leadership: In a study of accuracy in evaluating performance effectiveness (Borman, 1979), individuals who were accurate judges of performance on a managerial and a recruiting task were bright, well adjusted, self-controlled, and likable. This profile of accurate judges of performance effectiveness is consistent with findings from academic research regarding the characteristics of good judges in general (cf. Hogan, Hogan, Briggs, & Jones, 1983) and fits the profile of perceived leaderlike characteristics of the LEAD facilitators.

As noted earlier, the facilitators were selected for their perceived leaderlike characteristics on the basis of interviews and essays. The study therefore allowed us to examine whether the coping variables described above go beyond traditional self-report and interview-based methods of selection for leadership in business settings.

Procedure

The purpose of the study was presented to the entire group at the beginning of LEAD. It was described as investigating the relationships between personality and leadership. Potential comparison group members were contacted by telephone. They were told that their participation would help us determine whether being a facilitator produced demonstrable change in personality characteristics related to leadership.

The psychological assessment instruments were administered by the first author in individual assessment sessions lasting approximately one hour. Although administration of the measures was not blind, standardized scoring procedures were followed, and all scoring was conducted blind to group membership (LEAD vs. comparison). Testing began after a brief unstructured interview to establish rapport and gather background information. The SSCT and the TAT were administered according to standard oral administration procedures. Participants completed the WCQ on their own. No time limits were imposed. Finally, 47 facilitators gave permission to use their GMAT scores as a rough measure of intelligence.

At the end of the program, facilitators and faculty evaluated each facilitator for his or her behavior throughout the program but before grades were distributed. The facilitators were reminded of the confidentiality of their individual records. The data were analyzed for the significance of correlations between the measures of personality and leadership. Also, t tests were used to compare the LEAD and comparison groups on the measures of active coping associated with integrative capacity. All statistical tests were one-tailed.

FINDINGS

LEAD versus Comparison Groups

Given that facilitators were selected for their leadership qualities, the variables used to measure integrative capacity might be expected to distinguish the LEAD and comparison groups. We hypothesized *post hoc* that members of LEAD would score lower overall on the measures of defensiveness and higher on the measures of openness to synthesize complexity as compared to members of the comparison group. To test these hypotheses, t tests of the mean differences between the LEAD and comparison groups on each of the measures of defensiveness and openness were computed. An inspection of Table 1 indicates systematic differences. Participants in the LEAD group scored lower on

Escape-Avoidance (LEAD, $M = 6.31$; comparison, $M = 9.08$; $t = -2.77$, $p < .001$), Confrontive Coping (LEAD, $M = 10.47$; comparison, $M = 13.01$; $t = -1.9$, $p < .05$), Rejection 1 (LEAD, $M = .23$; comparison, $M = 1.26$; $t = -10.62$, $p < .0001$), Rejection 2 (LEAD, $M = 1.23$; comparison, $M = 2.67$; $t = -5.05$, $p < .0001$), and Rejection 3 (LEAD, $M = 4.21$; comparison, $M = 5.52$; $t = -3.21$, $p < .001$). Participants in the LEAD group scored higher on Accepting Responsibility (LEAD, $M = 11.73$; comparison, $M = 7.03$; $t = 3.29$, $p < .001$) and Positive Reappraisal (LEAD, $M = 12.71$; comparison, $M = 8.65$; $t = 3.28$, $p < .001$).

Openness to Synthesize Complexity

The first research question, relating to openness to synthesize complexity (integrative capacity) concerned the relationship between leadership effectiveness and the tendency to integrate psychological and environmental complexity. We examined the correlations between the measure of leadership and the measures of integrative capacity. Table 2 reports the descriptive statistics and scale intercorrelations for this portion of the data. The results revealed significant correlations between leadership and at least one measure of integrative capacity at each level of measurement. On the WCQ, the level of consciously controlled communication, the correlation between Confrontive Coping (aggressive and sometimes hostile attempts to make someone else responsible for and change the situation) and leadership was statistically significant ($r = -.32$, $p < .02$).

Effective leaders displayed a pleasant, open, nonconfrontive coping style. The other WCQ variables were not correlated with leadership. At the semiprojective level, on the SSCT, there was a significant correlation between Rejection 3 (defensively vague or ambiguous response) and leadership ($r = -.32$, $p < .03$). The correlation between Rejection 1 (no response) and leadership also was significant ($r = -.27$, $p < .04$). The ability to define and clearly articulate complexity thus predicted leadership. There was no correlation between leadership and Rejection 2.

TABLE 1
MEAN DIFFERENCES BETWEEN GROUPS ON THE WAYS OF COPING QUESTIONNAIRE AND
SHANAN SENTENCE COMPLETION TECHNIQUE MEASURES OF INTEGRATIVE CAPACITY

Variables	LEAD Group (n = 48)		Comparison Group (n = 23)		t Value ^a
	M	SD	M	SD	
Self-Report level ^b					
1. Escape-Avoidance	6.31	4.71	9.08	3.74	-2.77***
2. Confrontive Coping	10.47	4.28	13.01	5.67	-1.90**
3. Accepting Responsibility	11.73	7.19	7.03	4.71	3.29***
4. Positive Reappraisal	12.71	5.80	8.65	4.38	3.28***
Semiprojective Level ^c					
5. Rejection 1	0.23	0.56	1.26	0.26	-10.62***
6. Rejection 2	1.23	1.12	2.67	1.13	-5.05***
7. Rejection 3	4.21	2.41	5.52	1.01	-3.21***

Note: Thematic Apperception Test protocols for the comparison group were not scored due to budgetary limitations.

^a $df = 69$

^bSelf-report corresponds to the level of consciously controlled communication about the self.

^cSemiprojective corresponds to the level of semiconsciously controlled communication about the self.

** $p < .01$.

*** $p < .001$.

TABLE 2
DESCRIPTIVE STATISTICS AND CORRELATIONS ON THE MEASURES OF INTEGRATIVE CAPACITY

Variables	M	SD	n	1	2	3	4	5	6	7	8
1. Leadership Effectiveness	30.54	3.49	48								
Self-report Level ^a											
2. Escape-Avoidance	6.31	4.71	48	.03							
3. Confrontive Coping	10.47	4.28	48	-.32*	-.04						
4. Accepting Responsibility	11.73	7.19	48	.13	.37**	-.23†					
5. Positive Reappraisal	12.71	5.80	48	.10	-.25*	.18	-.17				
Semiprojective level ^b											
6. Rejection 1	0.23	0.56	48	-.27*	.12	.06	-.27*	-.06			
7. Rejection 2	1.23	1.12	48	.02	-.09	-.13	.04	-.04	.19		
8. Rejection 3	4.21	2.41	48	-.32*	-.13	-.09	.08	-.29*	-.18	-.14	
Projective level ^c											
9. Organized Complexity	102.04	32.23	48	.34**	.27*	.05	.03	.03	-.04	.21	-.18

^aThe self-report level corresponds to consciously controlled communication about the self. Alphas for the scales are .70, .66, .70 and .72 respectively.

^bThe semiprojective level corresponds to semiconsciously controlled communication about the self. The Shanan Sentence Completion Technique has been shown to have interrater reliabilities between .63 and .84 (Shanan, 1990).

^cThe projected level corresponds to the level of communication beyond conscious control. Scoring criteria for scales at this level yield interrater reliability coefficients between .42 and .96 (Jacobowitz, 1984).

† $p < .10$.

* $p < .05$.

** $p < .01$.

Intelligence versus Active Coping

The second research question concerned the relationship between active coping and intellectual ability as contributors to leadership effectiveness. We expected to find that the more effective leaders would tend to be more intelligent than the less effective leaders but that integrative capacity as seen in active coping and intellectual ability would be separate determinants of leadership. We calculated Pearson correlations to test the assertion that intellectual ability, as measured by facilitators' GMAT scores, was a determinant of leadership. As Table 3 displays, there was no significant correlation between leadership and GMAT.

In addition, there were no significant correlations between GMAT and any of the individual TAT variables, that is, those contributing to Organized Complexity. We then calculated partial correlations to determine whether the measures of integrative capacity would contribute to leadership separate from intelligence. Table 4 reports these correlations. Rejection 1 was the only variable to have a significant correlation with GMAT ($r = -.27, p < .05$). There were no significant correlations between GMAT and any of the other variables. Moreover, as reported in Table 4, GMAT was not significantly correlated with leadership, whereas nearly every measure of integrative capacity predicted leadership. Furthermore, the measures that were significantly correlated with leadership before partialing out GMAT remained significantly correlated with leadership after removing the effects of GMAT. Those significant partial correlations were Confrontive Coping ($r = -.32, p = .03$), Rejection 1 ($r = -.24, p = .10$), Rejection 3 ($r = -.32, p < .05$), Organized Complexity ($r = .34, p < .01$), and integrative capacity ($r = .52, p < .001$). The results support the hypothesis that personality variables other than sheer intelligence undergird effective leadership.

TABLE 3
DESCRIPTIVE STATISTICS AND CORRELATIONS FOR ORGANIZED COMPLEXITY SCALES

Variables	M	SD	N	1	2	3	4	5	6	7
1. Leadership	30.54	3.49	48							
2. Conflict	2.21	1.49	48	.22†						
3. Differentiation	62.90	30.18	48	.31*	.35*					
4. Time perspective	9.27	1.99	48	.06	.23†	.43**				
5. Logical control	13.83	3.49	48	.45**	.12	.16	.21			
6. Organized Complexity	102.04	32.23	48	.34**	.64***	.73***	.71***	.57***		
7. Graduate Management Aptitude Test	612.55	80.20	47	80.20	.13	-.02	.12	-.09	-.04	.11

† $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

TABLE 4
PARTIAL CORRELATIONS OF INTEGRATIVE CAPACITY
VARIABLES AND LEADERSHIP WITH INTELLIGENCE HELD CONSTANT^{a,b}

Independent Variables (X)	$r_{X \cdot \text{Leadership}}$	$r_{X \cdot \text{GMAT}}$	$r_{X \cdot \text{Leadership} \cdot \text{GMAT}}$
Self-report level ^c			
1. Escape-Avoidance	.03	-.10	.02
2. Confrontive Coping	-.32*	-.02	-.32*
3. Accepting Responsibility	.13	-.06	.13*
4. Positive Reappraisal	.10	-.02	.11
Semiprojective level ^d			
5. Rejection 1	-.27*	-.27*	-.24*
6. Rejection 2	.02	-.03	.03
7. Rejection 3	-.32*	.01	-.32*
Projective level ^e			
8. Organized Complexity	.34**	.11	.34**
Composite, multilevel measure			
9. Integrative Capacity	.52***	.16	.51**

Note: GMAT = Graduate Management Aptitude Test

^a $r_{\text{GMAT} \cdot \text{Leadership}} = .13$

^bThe facilitators' mean GMAT score was 613 (range = 430-770, $SD = 80$).

^cThe self-report level corresponds to consciously controlled communication about the self.

^dThe semiprojective level corresponds to the semiconsciously controlled communication about the self.

^eThe projective level corresponds to the level of communication beyond conscious control.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

DISCUSSION

The findings indicate that integrative capacity will be associated with small task group leadership as rated by peers and external authority figures. The strength of this relationship could not be explained by different levels of intelligence. In addition, the association between leadership and integrative capacity was consistent across three levels of psychological functioning. Overall, the findings strengthen our contention that integrative capacity, defined as a structural parameter of personality, is a significant determinant of small task group leadership and support the validity of a structural approach.

One validity issue concerns the modest size of the correlations. Although significant, they ranged from .27 to .54. A number of measurement factors may have worked to limit their magnitude. Earlier, we noted that the LEAD group was selected from a limited pool of MBA students at Chicago and, within that pool, from an even more limited pool of students who were selected based on criteria related to leadership potential. An implication of pre-selection is a curtailment of distributions. That factor revealed itself in the differences between the LEAD and comparison groups on the measures of integrative capacity. Those differences substantiate our assumption that we were looking at a select group in terms of integrative capacity, which would limit the correlations observed. In addition, our measure of leadership relied solely on subjective ratings. Such a measure may have blurred distinctions between individuals that might have appeared had we been able to use a more objective measure of group outcome.

An important issue raised by our study was the concept of viewing personality as a complex whole rather than as fragmented into isolated traits and the ensuing need to assess coping as a structural psychological characteristic. Indeed, in our study, which assessed coping across three levels of behavior, the higher associations between coping and leadership occurred on the semiprojective and projective measures. That pattern of results may reflect the fact that more structured assessment methods afford respondents greater opportunity to control how they present themselves, biasing their reporting. On semiprojective and projective instruments, parts of the individual's underlying dispositions related to the overall structure of personality manifest much more clearly. The findings therefore support the view that less structured instruments may be useful to expose more defended personality tendencies that nevertheless influence the behavior and effectiveness of a leader.

The pattern may go beyond mere technical effects. That the aggregate measure of integrative capacity had the largest correlation with leadership is consistent with the hypothesis that consistency of active coping across levels will be associated with leadership. That is, the openness demonstrated by the most positively evaluated leaders across self-report, semiprojective, and projective measures speaks to a genuine openness, vitality, and strength of self, not just a pseudo-openness. That quality may have affected facilitators' leadership behavior and thus their fellow facilitators' perceptions of their behavior. How such openness translates into actual achievement is not clear.

Unfortunately, instrument variance was an unavoidable confound due to the need to use different assessment instruments to derive different levels of measures. Thus, although conceptually, we wanted to examine the relations among different levels, methodologically, it was impossible to separate instrument variance from level variance. To obtain measures that would be comparable across levels would require the use of a single assessment instrument, one including, ideally, behavioral observations, self-description, sentence completion, and stories. In future studies, we would like to create profiles across levels or typologies rather than a single overall number that represents integrative capacity. One reason we used correlations was to examine each level to see if there was enough correlational evidence to suggest that it is worthwhile to pursue this model.

It should be emphasized that the only criterion of leadership in this study was an individual's leadership as perceived by other group members. The term *leadership*, as used here, refers only to an individual's perceived leadership as measured by sociometric selection. Even task groups made up of individuals who are originally strangers to each other soon take on a social structure. Thus, in LEAD, where most members were initially unacquainted with each other, high status for any given member did not depend on the individual's past achievements. Because the task to be performed did not require exceptional skills or specialized knowledge, status did not depend primarily on intelligence or training. In these conditions, an individual's leadership, as viewed by other group members, must be determined by the person's

behavior in that particular group. That behavior, in turn, is a function of the individual's personality, particularly, it appears from this study, the individual's integrative capacity.

Although our findings clarify the relationship between integrative capacity and the evaluation of leadership effectiveness, it may also be true that they relate not to a specific leadership competency but to a generic competency for effectiveness in many other areas. Numerous studies have found correlations between active coping and adaptation in a wide range of settings including medical school, work, adjustment to a new culture, and maintaining mental health under taxing conditions (Shanan, 1990). Thus, our findings may relate to an individual generic adaptive characteristic.

Related to the issues raised above is whether our findings generalize to actual business settings. Our findings relate to the performance of business school students who were not dealing with the full extent of tension and complexity in the real world. The strength of our findings indicates a need to investigate the relationship between integrative capacity and leadership in the world outside business school.

SUMMARY AND CONCLUSION

This study looked at evaluations of individual leadership performance from two separate sources, fellow facilitators and faculty. Evaluations were made nine months after the participants' integrative capacity was assessed on three levels of behavior. Measures of integrative capacity across these levels predicted leadership. The fluid and unstructured nature of the setting precluded evaluating leadership on any objective measures of performance. Because informal movement in an organization often depends on the perceptions of peers and supervisors of an individual's leadership, however, the findings speak to the emergence and evaluation of small task group leadership in business settings.

The study was funded by the University of Chicago Graduate School of Business and was part of a broader research program on the personality correlates of business leadership. We wish to thank the students, faculty, and staff who participated in this study.

REFERENCES

- Bass, B. M. (1990). *Bass and Stogdill's handbook of leadership*. New York: Free Press.
- Borman, W. (1979). Individual differences correlates of accuracy in evaluating others' performance effectiveness. *Applied Psychological Measurement, 3*(1), 103-115.
- Burns, J. M. (1978). *Leadership*. New York: Harper and Row.
- Carroll, S. J., & Gillen, D. J. (1987). Are the classical management functions useful in describing managerial work? *Academy of Management Review, 12*, 38-51.
- Chemers, M. M. (1984). The social, organizational, and cultural context of effective leadership. In B. Kellerman (Ed.), *Leadership: Multidisciplinary perspectives* (pp. 91-112). Englewood Cliffs, NY: Prentice Hall.
- Folkman, S., & Lazarus, R. S. (1988). *Manual for the Ways of Coping Questionnaire*. Palo Alto, CA: Consulting Psychologists Press.
- Harvey, O. J., Hunt, D. E., & Schroder, H. M. (1961). *Conceptual systems and personality organization*. New York: John Wiley.
- Hemphill, J. K., & Coons, A. E. (1957). Development of the Leader Behavior Description Questionnaire. In R. M. Stogdill & A. E. Coons (Eds.), *Leader behavior: Its description and measurement* (pp. 6-3 8). Columbus, OH: Bureau of Business Research, Ohio State University.
- Hogan, R., Curphy, G. J., & Hogan, J. (1994). What we know about leadership: Effectiveness and personality. *American Psychologist, 49*(6), 493-504.
- Hogan, R., Hogan, J., Briggs, S., Jones, W. (1983). Sense, nonsense, and the use of personality measures. *Journal of Research in Personality, 17*(4), 451-456.
- Jacobowitz, J. (1976). *The prediction of performance in medical school*. Unpublished master's thesis, Hebrew University of Jerusalem, Israel.
- _____. (1984). *Stability and change of coping patterns during the middle years as a function of personality type*. Unpublished doctoral thesis, Hebrew University of Jerusalem, Israel.
- Kane, J. S., & Lawler, E. E. (1978). Methods of peer assessment. *Psychological Bulletin, 85*(3), 555-586.
- Kenny, D. A., & Zaccaro, S. J. (1983). An estimate of variance due to traits in leadership. *Journal of Applied Psychology, 68*, 678-685.
- Kotter, J. P. (1990, May/June). What leaders really do. *Harvard Business Review*, pp. 103-111.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Leary, T. (1957). *Interpersonal diagnosis of personality*. New York: Ronald Press.
- Murray, H. (1938). *Explorations in personality*. New York: Oxford University Press.
- Pratch, L., & Jacobowitz, J. (1996). Gender, motivation, and coping in the evaluation of leadership effectiveness. *Consulting Psychology Journal: Practice and Research, 48*(4), 203-220.
- _____. (1997). The psychology of leadership in rapidly changing conditions: A structural psychological approach. *Genetic, Social, and General Psychology Monographs, 123*, 169-196.
- Rapaport, D. (1951). The autonomy of the ego. In M. Gill (Ed.), *The collected papers of David Rapaport* (pp. 357-367). New York: Basic Books.
- _____. (1957). The theory of ego autonomy: A generalization. In M. Gill (Ed.), *The collected papers of David Rapaport* (pp. 722-744). New York: Basic Books.
- Rogers, C. R. (1961). *On becoming a person: A therapist's view of psychotherapy*. Boston: Houghton Mifflin.
- Schroder, H. M. (1971). Conceptual complexity and personality organization. In H. M. Schroder & P. Suedfeld (Eds.), *Personality theory and information processing*. New York: Ronald Press.
- Schroder, H. M., Driver, M. J., & Streufert, S. (1967). *Human information processing*. New York: John Wiley.
- Schroder, H. M., & Suedfeld, P. (Eds.). (1971). *Personality theory and information processing*. New York: Ronald Press.
- Shanan, J. (1973). Coping behaviors in assessment for complex tasks. *Proceedings of the 1 7th International Congress of Applied Psychology* (Vol. 1). Brussels, Belgium: Editest.
- _____. (1985). *Personality types and culture in later adulthood*. Basel, Switzerland: Karger.

- _____. (1990). Coping styles and coping strategies in later life. In M. Berenger & S. Finkle (Eds.), *Clinical and scientific psychogeriatrics* (Vol. 1) (pp. 76-112). New York: Springer.
- Shimonaka, Y., & Nagazato, K. (1980). Psychological characteristics of Japanese aged. *Journal of Gerontology*, *35*(6), 891-898.
- Skinner, W., & Sasser, W. E. (1977, November-December). Managers with impact: Versatile and inconsistent. *Harvard Business Review*, *55*(6), 140-148.
- Streifert, S., & Streifert, S. (1978). *Behavior in a complex environment*. Washington, DC: Winston.
- Streifert, S., & Swezey, R. W. (1986). *Complexity, managers, and organizations*. San Diego, CA: Academic Press.
- Suedfeld, P., & Bluck, S. (1993). Changes in integrative complexity accompanying significant life events. *Journal of Personality and Social Psychology*, *64*(1), 124-130.
- Suedfeld, P., Tetlock, P. E., & Streifert, S. (1992). Conceptual-integrative complexity. In C. R. Smith (Ed.), *Motivation and personality: Handbook of thematic content analysis* (pp. 393-400). Cambridge, UK: Cambridge University Press.
- Tetlock, P. E. (1979). Identifying victims of groupthink from public statements of decision makers. *Journal of Personality and Social Psychology*, *37*, 1314-1324.
- _____. (1983). Accountability and complexity of thought. *Journal of Personality and Social Psychology*, *45*, 74-83.
- _____. (1984). Cognitive style and political belief systems in the British House of Commons. *Journal of Personality and Social Psychology*, *46*, 1565-1585.
- _____. (1985). Integrative complexity of American and Soviet foreign policy rhetoric: A time-series analysis. *Journal of Personality and Social Psychology*, *49*, 1565-1585.
- Tetlock, P. E., & Kim, J. (1987). Accountability and overconfidence in a personality prediction task. *Journal of Personality and Social Psychology*, *52*, 700-709.
- Tetlock, P. E., Peterson, R. S., & Berry, J. M. (1993). Flattering and unflattering personality portraits of integratively simple and complex managers. *Journal of Personality and Social Psychology*, *64*(3), 500-511.
- Tetlock, P. E., & Suedfeld, P. (1988). Integrative complexity coding of verbal behavior. In C. Antaki (Ed.), *Lay explanation*. Beverly Hills, CA: Sage.
- Wallace, M. D., & Suedfeld, P. (1988). Leadership performance in crisis: The longevity-complexity link. *International Studies Quarterly*, *32*, 439-451.
- Whitley, R. (1989). On the nature of managerial tasks and skills: Their distinguishing characteristics and organization. *Journal of Management Studies*, *26*(3), 209-224.