# Using Constructive Developmental Theory and Biodata to Bridge the Gap Between Personnel Selection and Leadership

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*This article proposes a strategy for integrating the research on a powerful selection tool (biographical data) with a promising approach to leader development (constructive/developmental theory) in an attempt to bridge the gap between personnel selection and leadership theory. Building on previous calls for integrative approaches to the study of leader effectiveness, the strategy suggests that biodata be gathered in a manner that allows us to (a) understand the meaning that leaders derive from their life experiences and (b) assess leaders' developmental stages. It is expected that this strategy will help to explain the predictive validity consistently exhibited by biodata instruments and will help to better predict leadership effectiveness. The implications of this strategy for both managerial selection and leadership development are discussed.*

The fields of industrial/organizational psychology, organizational behavior, and human resource management have been defined in many ways (e.g., Argyris, 1976; Cummings, 1982; Mitchell, 1979; Morgan, 1986). According to Staw (1984), the most popular ways of summarizing individual behavior in organizational settings have usually been some mixture of broad theories (e.g., motivation, leadership), organizational practices and processess (e.g., selection, control), and organizational outcomes (e.g., productivity, innovation). Because these perspectives have been independently developed, their collective research efforts have done little to advance the field of organizational behavior (Braver-

man, 1974; Staw, 1980). Attempts to bridge these domains are just starting to appear (cf., Feldman, 1981).

This article proposes one strategy for integrating the literatures on personnel selection and leadership in an attempt to advance both content areas. Our approach builds on calls by Campbell, Dunnette, Lawler, and Weick, 1970; Yukl, 1981; and Van Fleet and Yukl, 1986 for a more unified or integrative approach to the study of leadership effectiveness in an attempt to understand how leader, subordinate, and situational characteristics interact to affect performance and outcomes in organizations. In the tradition of "grounded theory building" (Glaser & Strauss, 1967), the strategy developed below focuses on the systematic discovery of theory from both qualitative and quantitative data. We attempt to integrate a selection procedure of known predictive power in combination with an emerging model of leader development to provide a foundation for future integrative research.

The need for an integrating strategy is best exemplified by the strengths and weakness of the personnel selection and leadership literature. The personnel selection literature, focusing primarily on the design of systems for selecting among job candidates, has typically relied on a comparison between candidates' knowledge, skills, and abilities and those required for successful job performance. These applications, though generally data-driven, are also generally successful (e.g., Hunter & Hunter, 1984). One problem with this approach is that it has been done atheoretically: that is, there is no theory of job performance that describes how job elements relate to one another or how previous experiences relate to future task performance (McCormick, 1976). Under these conditions, it is not surprising that Burke and Pearlman (1988) have found "few attempts [that] systematically study and establish linkages between characteristics of people and jobs" (101).

The leadership literature, on the other hand, has suffered no lack of theoretical developments. Bass's (1981) update of Stogdill's (1974) review of leadership research summarizes a large number of approaches to leadership theory including trait theories, exchange theories, behavioral theories, psychoanalytic theories, cognitive/perceptual theories, interaction/expectation theories, and humanistic theories. In describing the various approaches to leadership, however, Bass has pointed out that there is little integration between leadership theory and the empirical research on leadership. In fact, none of the citations from Hunter and Hunter's (1984) meta-analysis of the personnel selection literature are found in Bass (1981). Given the lack of predictive power surrounding the applications of leadership theory, it is not surprising that Burns (1978: 2) concluded "leadership is one of the most observed and least understood phenomena on earth."

## Integrative Models of Leadership

Early studies of leadership tended to focus on leader characteristics and behaviors (e.g., Borgatta, Bales, & Couch, 1954; Fleishman, Harris, & Burtt, 1955), but more recent approaches have attempted to take an interactionist view of leadership (e.g., Fiedler & Chemers, 1984). The model below by Campbell et al. (1970) was based on the premise that "a manager's job behavior is a function of

ability, motivation, and opportunity as reflected in various situational or organizational circumstances'' (11).

| individual characteristics (person) | → | job behaviors (process) | → | organizational results (product) |
|---|---|---|---|---|
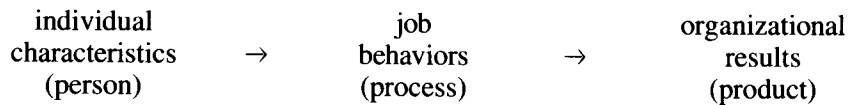
Yukl and his colleagues (Van Fleet & Yukl, 1986; Yukl, 1981, 1989a, 1989b) presented a model for integrating leadership research that extends the Campbell et al. model by incorporating various theories, findings, and perspectives of the leadership literature into a single framework (Figure 1). Their model captures the major sets of variables underlying leadership performance processes and outcomes, including leader traits and skills, personal power, leader behavior, situational characteristics, work unit outcomes, and various intervening variables.

Integrative models such as those described above serve as the conceptual frameworks for the strategy proposed here. The strategy is developed in three steps. First, a brief review of the literature on biographical data (biodata), a selection technique that consistently demonstrates predictive validity, is presented. Second, a theory of leader development, constructive/developmental theory, which explains leader effectiveness by focusing on leaders' ''meaning formation'' processes is described. Third, a strategy for integrating these approaches in the context of a general leadership model is proposed and the application and implications of this framework for leader selection and leader development are discussed.

## Biographical Information

Biographical information has been used to make personnel selection decisions since the turn of the century (Owens, 1976). Reviews of the selection literature
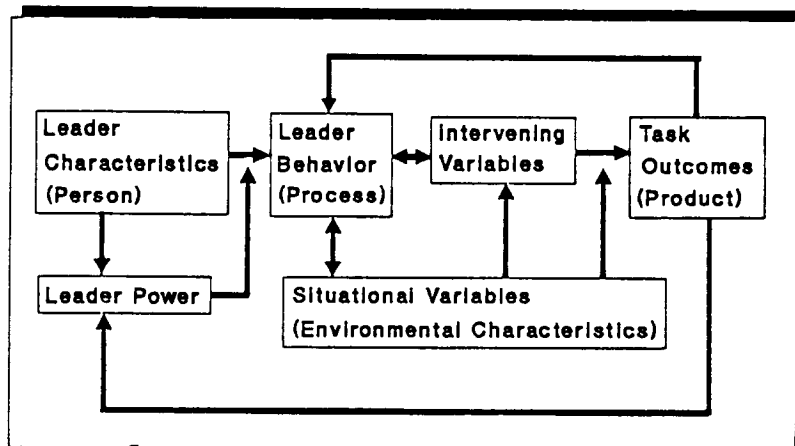


Figure 1
Integrated model of leadership adapted from Yukl (1989)

(e.g., Dunnette, 1963; Owens, 1976; Reilly & Chao, 1982) as well as recent meta-analyses (e.g., Hunter & Hunter, 1984) have shown that biodata is among the best alternatives to cognitive tests for predicting a wide range of work-related criteria and that biodata inventories have generated higher predictive power than many widely used selection techniques. Investigators have recently reported meaningful criterion-related validities involving performance of government attorneys (Hough, 1984), performance in a variety of managerial, professional, and clerical/technical positions (Richardson, Bellows, & Henry, 1984 a,b,c,; 1989), performance in top level management positions (Russell, in press), performance of midshipmen at the U.S. Naval Academy (Russell, Mattson, Devlin, & Atwater, 1988), and performance of service personnel (Schoenfeldt, 1989).

In their simplest form, biodata items reflect performance outcomes: that is, knowledge of previous event outcomes can be used to predict future event outcomes although the causal influences are unknown. In many cases, the prior event parallels the target task outcomes of interest. For example, Guion (1965) noted that the item "Did you ever build a model airplane as a child that flew?" was the best predictor of performance in WWII flight school. The item reflects an early task outcome (a model airplane that flew) that predicts a later criterion (flying a real airplane) without reference to the processes that relate the first event outcome to the second.

At a more complex level, biographical information may focus on the personal characteristics and behaviors behind a particular performance outcome. That is, predictors that reflect any individual's values, attitudes, and beliefs and that capture developmental processes associated with some prior life event are related to the criterion of interest (Ferguson, 1967; Guion, 1965; Mitchell, 1986; Owens, 1976; Williams, 1961). These more complex reflections of prior life events are based on the assumption that multiple aspects of a prior life experience make it "meaningful" and hence influence individuals' subsequent behavior (Mumford, 1988).

Owens (1968, 1971) built on this notion of meaningful prior life experiences in developing a theoretical framework for biodata, the Developmental/Integrative (DI) Model. Underlying the DI model is the notion that "different kinds of individuals undergo differing patterns of experiences as they develop, and that, if this is true, then identifying these experiential patterns also identifies the kinds of persons who have them" (Owens, 1976: 571). In other words, although people are influenced by their experiences, by virtue of their nature (traits and values) they seek or avoid many experiences/situations on the basis of perceived compatibility with their self-perceptions (Owens, 1976; Owens & Schoenfeldt, 1979). Hence, the DI model is developmental in that it emphasizes antecedent life experiences that represent fundamental inputs at critical stages in a person's development. The model is integrative in that such past experiences need to be described not only in terms of their outcomes, but also in terms of the values, traits, and behaviors of the individual.

Empirical support for the DI model has been found in stable factor structures (Eberhardt & Muchinsky, 1982a,b; Lautenschlager & Schaffer, 1987) and scoring keys for biodata items (Brown, 1978) over long periods of time, as well as in

its usefulness in differentiating groups and aiding in the interpretation of concurrent measurement and field studies (Mumford & Owens, 1984; Rychlak, 1982). Unfortunately, such evidence does not yield great insight into *how* particular developmental experiences influence behavior; in other words, the level of understanding of *why* biodata inventories predict future performance has not kept pace with the development of different types of biodata items. Again, the premise of DI theory is that different individuals have different patterns of meaningful life experiences. With DI theory as a launching point, one might ask whether knowledge of individuals' past meaningful life experiences can be used to generate biodata items with high predictive validity and strong explanatory power.

## Constructive/Developmental Theory

Kuhnert and Lewis (1987) have recently applied constructive/developmental theory to leadership by describing how the manner in which leaders ascribe meaning to, or impose meaning upon, their experiences may help to explain their subsequent understanding and action. Constructive/developmental (CD) theory (Kegan, 1982; Kegan & Lahey, 1984; Torbert, 1987) identifies discrete stages that represent different ways of "making meaning" of the world and that result in a new way of expressing ideas, feelings, and purposes (Merron, Fisher, & Torbert, 1987). The six stages of "perspective taking" proposed by Kegan represent successively broader ways of constructing meaning.

According to CD theory, the meaning-making process incorporates two aspects of experience termed *subject* and *object*. Subject refers to the process or structure by which individuals organize (make sense of) their experience; it is the lens through which the world is experienced. In contrast, object is the content of the experience that can be integrated by the individual. As one progresses through the six stages (see Table 1), what was subject becomes object; individuals are able to see and reflect upon the way that they previously organized their experience, rather than being defined by it. The fundamental point in determining how meaning is generated lies in the evolution of subject-object relations because that is where the person's meanings are generated (Lahey, Souvaine, Kegan, Goodman, & Felix, 1988).

Table 1
Subject and object at different stages of development

| Level | Subject | Object |
|---|---|---|
| Stage 0 | Reflexes (sensing, moving) | None |
| Stage 1 | Impulses, perceptions | Reflexes (sensing, moving) |
| Stage 2 | Needs, interests, wishes | Impulses, perceptions |
| Stage 3 | Interpersonal mutuality | Needs, interests, wishes |
| Stage 4 | Authorship, identity, psychic administration, ideology | Interpersonal mutuality |
| Stage 5 | Interindividuality | Authorship, identity, interpenetrability psychic administration, ideology |

Kuhnert and Lewis (1987) argued that it is the meaning-making systems (the subject-object relations) of leaders that distinguish between transactional and transformational leadership (Bass, 1985; Burns, 1978). They proposed that transactional leaders, who are characterized by giving followers something they want in exchange for something that the leader wants, are operating at Kegan's Stages 2 and 3. At both of these stages, the leader has influence because it is in the best interest of the follower to do what the leader wants. In contrast, transformational leaders, who operate out of a system of personal values, are operating at Stages 4 and 5 of interpersonal development. These leaders are able to view themselves and their world independently of how well their (or others') needs are met. Thus, transformational leaders have influence by producing relatively enduring shifts in the attitudes, beliefs, and goals of followers and they "attempt and succeed in raising colleagues, subordinates, followers, clients, or constituencies to a greater awareness about the issues of consequence" (Bass, 1985: 17).

Although CD theory holds promise for explaining leader influence and effectiveness, the framework proposed by Kuhnert and Lewis (1987) suffers from the lack of a readily available mechanism for assessing what past life experiences contribute to the development of future leaders. For the framework to be validated, some means of demonstrating a link between past experiences, developmental stage and leader behavior is required. The following section suggests a strategy where CD theory is used as a means to integrate biographical data with leadership theory.

## A Strategy for Integrating Personnel Practice with Leadership Theory

The strategy for integration proposes constructive/developmental (CD) theory as a vehicle for understanding how meaning is derived from prior experiences by providing a theory-based method for biodata item generation. Integration of biodata research with the CD theory of leadership is based on two themes that underlie both approaches: (a) that previous life experiences influence present behaviors and (b) that leaders do not simply react to certain situations, but rather that they extract meaning from prior life experiences and that meaning influences subsequent personal characteristics, behaviors, and outcomes. It is our contention that a better understanding of the predictive power of biodata items could be achieved if they were generated within the context of CD theory, focusing on the meaning derived from patterns of events, rather than event outcomes.

We propose translating critical life experiences into biodata items that establish the perspective taken by an individual by revealing what is subject and what is object during those experiences. In this way, systematically gathered biographical information could be used to help understand how life experiences are construed and subsequently how leaders develop. Put simply, this strategy suggests that biodata could be used to help assess the subject-object relations that influence leaders meaning-making processes and their behavior.

In fact, recent innovations in biodata instrumentation are consistent with this proposal. Researchers have begun to focus less on single outcome items and have turned toward retrospective life history essays and structured interviews as sources of information about the behaviors, values, attitudes, motivation, beliefs,

and environmental characteristics associated with life experiences (e.g. Lindsey, Homes, & McCall, 1987; Russell, 1989, in press; Russell, Mattson, Devlin, & Atwater, 1988; Stokes, Mumford, & Owens, 1988). Analysis of these oral and written descriptions of prior life events are being used to delineate patterns and pathways of life experiences that can be used to identify individuals with similar histories.

Russell (1989) reported an example of this process in the selection of retail store managers. Incumbent managers wrote essays about prior life experiences that they felt reflected dimensions of performance in the target job domain. Biodata items were generated from content analyses of the essays and each item was labeled as reflecting either: (a) antecedent processes such as perceptions, cognitions, or feelings; (b) behaviors; (c) task outcomes; or (d) environmental characteristics. Combined, these items accurately predicted multiple measures of job performance and factor analysis confirmed the distinction among the four categories of biodata items. This, as suggested in the Campbell et al. (1970) and Yukl (1981) integrative models, information about different types of variables helps to improve our prediction of leader behavior.

Although the use of multiple types of biodata items improved prediction, the ability to reveal how these sets of variables interact with one another is still lacking. It is necessary to identify the variables that predict leadership behavior, but it is also important to have a framework for determining how they are interrelated to influence leadership effectiveness. As noted by Yukl (1981) "To advance the integration of approaches, some studies are needed with a perspective broad enough to encompass leader traits, behavior, influence processes, intervening variables, situational variables, and end-result variables" (287). It is argued here that the strategy of grounding our efforts within the context of CD theory provides a perspective that is broad enough to encompass all of these variables.

*Implementation of the Strategy*

Implementation of this strategy requires a determination of the critical elements of life experiences that hold meaning for leaders and an understanding of how leaders interpret those experiences. In other words, we need a way of determining how leaders make sense of themselves, the situational demands, and the outcomes of their behavior. The contribution of CD theory is the ability to determine the perspective or meaning-making system of the leader by identifying what is subject and object for the individual. The contribution of biodata is the ability to identify critical life experiences that are related to targeted positions and to develop items that reflect an individual's perspective on those experiences.

In designing biodata items that could be expected to differentiate leaders at different stages of development, we must identify experiences or types of experiences that leaders believe are (were) critical to their development. In developing these incidents, we must identify a wide variety of experiences. In other words, leaders should identify both positive and negative outcomes (e.g., successful, unsuccessful) as well as experiences that elicited a variety of behaviors (e.g., take a strong stand, made a difficult choice) and feelings (e.g., angry, sad, torn). What we are looking for are experiences that demonstrate how leaders view themselves and how they relate to others in their role as leaders.

Once the critical experiences are identified, the next step is to explore why each of the experiences was important. This can best be done by asking a series of questions that indicate leaders' interpretation of an event and thereby reveal their motivations, needs, and reactions to these experiences. The general question posed to the leader is "What was most significant to you about that experience?" Below are a few follow-up questions designed to clarify the leaders' response:

What events could have changed this experience for you?
What was the important outcome of the critical event?
What was at stake for you in this situation?
What did the situation tell you about yourself?
What, if any, demands were imposed on you?
What limitations were there on your actions?

Posing these questions is an important step in determining the leaders' meaning making system. Information about what is subject and what is object for a leader can be found in the descriptions of the characteristics, behaviors, and results related to the experience. Answers to these questions determine how the leader frames the critical experience and exposes to the researcher what the leader learned in the situation and, just as importantly, what the leader did not learn from the situation. This information will then allow us to distinguish among leaders at different stages of development.

The next step is to write a series of items related to a given experience that will establish the respondent's subject-object orientation. The goal of this step is to establish a pattern of responses for a leader to a given situation that reflects the leader's meaning-making system. In this way, what was previously a single biodata item is now expanded to several questions designed to probe a leader's reactions to a given experience (scenario).

As an example of this strategy, we use a biodata item that was found, in a study by Russell et al. (1988), to predict performance at the U.S. Naval Academy. Student responses to the following item was found to predict academic performance and military performance ratings:

On a group project, many times one person is not pulling his/her own weight. Sometimes you would have to discuss this with the person. How often did these discussions "work out" and resolve the problem?

According to the strategy described above, this item might by refocused to explore what was subject and what was object for the students. In order to do this, we would need to develop a series of items that would present leaders with a variety of options reflective of the different stages of development. For example, after presenting a scenario, we would want to ask a series of follow-up questions that would allow respondents to choose from a range of options.

For example, the following item might by developed:

On a school project where you were in charge of a team of fellow students, one member wasn't pulling his or her weight. You determined that you must talk to him/her about the effect of this behavior on the project. How would you approach this discussion?

The range of options to this scenario would be developed from an analysis of the follow-up questions listed above. For example, the following options might be presented:

(a) I would let them know that I as uphappy that they were putting in less effort than I was because...
(b) I would point out how it wasn't fair to the other individuals in the group because...
(c) I would explain how that individual was letting him/herself down because...

Responses to these options would provide us with insight into both the preferred behavioral responses of leaders and the reasons for those behaviors. Analysis of the responses would help to determine the meaning making system of the leaders.

Generally, differential response patterns would be expected from leaders at Stages 2, 3 and 4 in Kegan's developmental model. Stage 2 people, who define the world in terms of their own needs, would be expected to report greater occurrences of option (a) and, when developing the reasons for their actions, would be unable to reflect on their goals because they are defined by them. Stage 3 people, who recognize others' needs as well as their own, might by expected to report occurrences of both options (a) and (b) and would be more likely to provide rationales that imply connections with fellow work group members. Leaders at this stage would be able to take a perspective on their own needs and goals, but would be unable to clearly articulate the mutual dependence between their needs and those of the work group. Stage 4 persons, who use a set of deeply held beliefs and values to view the world, would be expected to report occurrences of all three types of discussion, but would likely report greater occurrences of option (c). At this stage the rationales for behavior would focus their reasons on values and beliefs that transcend their own agendas and loyalties.

Although each stage of individual development suggests a different but consistent way of making decisions and influencing others, we must be careful to avoid assigning certain personality types or analyze general themes in the follow-up questions. Instead, what we look for are insights into the principles of organization. Assessing a leader's meaning making system requires an analysis of what is object for the leader—what they are "able to reflect on, control, take responsibility for, be in charge of, manipulate, or regulate" as well as what is subject— "what he or she is unable to take a perspective on" or is "unable to construct any wider frame of reference for...despite opportunities to do so" (Lahey, et al., 1988: 14).

Although our strategy demands that scenarios be analyzed for each person, we would expect the follow-up questions to be standardized and reusable. It is also important to note that responses to a *single* item would not be sufficient to draw any conclusions about the developmental stage of the leader: the patterns of responses to a series of such items would need to be examined.

The strength of this approach is the ability to assess the capacity of a leader (i.e., the developmental stage) independently of the leader's behavior in a given situation. According to CD theory, the developmental stage of an individual only influences the *capacity* to act in a certain manner. The affect of this capacity on

a leader's actual behavior is not known. Kegan's (1982) theory states that higher stage individuals have more problem-solving strategies in their repertoire of behaviors than do lower stage individuals, giving them more choices of responses to a given situation. Thus, it is not necessarily true that higher stage leaders will be better leaders in all circumstances. In fact, Torbert (1987) suggests that higher stage managers may succumb to adverse situational demands by "regressing under stress." Specifically, he postulates that adverse working conditions may force leaders to respond to problems and construct solutions in ways that contradict their espoused values. Although a detailed analysis of the role of situational or intervening factors on the development and behavior of leaders is beyond the scope of this paper, the integration of CD theory and biodata advocated here may help us to move closer to theories of leadership that look beyond outcomes and toward the interaction of past and future behaviors.

### Implications for Selections and Leadership Research

The most direct application of this technique for personnel selection is in advancing our understanding and development of items for biodata instruments. This approach may provide insights into why biodata items predict leader behavior and help us to improve such prediction. It may also help identify sequences of experiences that allow leaders to develop the capacity to view events from more than one perspective (transcending their own needs and goals) and broaden their range of responses to those events (Kotter, 1988).

This strategy may also hold promise for leadership training and development. Although numerous authors have noted that managers in top-performing organizations engage in more and different career development activities than those in poor or mediocre performing organizations, these observations have not provided us with insights into how those experiences contribute to the performance of the leaders. Systematically gathering information about meaningful experiences and outcomes would help to provide greater insight into where our corporate leaders have come from and how they are acquiring their skills.

Perhaps a more important contribution of this technique to personnel selection is an expansion of the definition of the construct of leadership. Although several authors have noted that leadership is more than a simple assessment of persons, their jobs, and situations (Campbell et al., 1970; Van Fleet & Yukl, 1986; Yukl, 1981, 1989a, 1989b), it has been difficult to operationalize a broader view of leadership effectiveness. Because the meaning-making system of a leader is reflected in the behaviors and outcomes as well as the leaders' perspectives on their own characteristics and the situational demands, this strategy may allow us to bridge the gaps among the various components and approaches to leadership. As noted by Yukl (1989b: 279), "leadership concepts and theories proposed by social scientists are subjective efforts to interpret ambiguous events in a meaningful way, not precise descriptions of real events and immutable natural laws." It is our contention that such efforts can be advanced by focusing on how leaders construct meaning and on how that meaning is derived by critical life events.

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