Human Resource Development Review

Employee Learning and Development Orientation: Toward an Integrative Model of Involvement in Continuous Learning

Todd J. Maurer

The online version of this article can be found at:
http://hrd.sagepub.com/cgi/content/abstract/1/1/9

Additional services and information for *Human Resource Development Review* can be found at:

Email Alerts: http://hrd.sagepub.com/cgi/alerts

Subscriptions: http://hrd.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

Citations (this article cites 47 articles hosted on the
SAGE Journals Online and HighWire Press platforms):
http://hrd.sagepub.com/cgi/content/abstract/1/1/9#BIBL

Employee Learning and Development Orientation: Toward an Integrative Model of Involvement in Continuous Learning

TODD J. MAURER
Georgia Institute of Technology

Through a review of diverse literature, this article reconceptualizes and integrates concepts such as growth needs, personal mastery, learning goals, and development orientation and provides a unique understanding of these concepts in human resource development. An employee learning and development orientation is proposed, which includes cognitive, affective, and behavioral constructs that together describe a tendency toward involvement in continuous learning. This orientation is posited to be a motivational state that depends on the degree to which learning and development are relevant to the self. The model outlines the content, structure, and processes of this orientation. It reframes the ways in which work and work context variables influence learning and development behavior in organizations. Ten research propositions are offered, and the article provides new directions for research. Some implications for practice are discussed.

The importance of voluntary development and continuous learning by employees is becoming widely recognized as critical to organizational effectiveness (cf. London, 1989; Maurer & Tarulli, 1994; Noe & Wilk, 1993; Rosow & Zager, 1988; Senge, 1990). A critical aspect of successful human resource learning and development programs in organizations is interest and active participation by employees. Careful design of development program content cannot compensate for a lack of interest or participation on the part of employees (Maurer & Tarulli, 1994). In fact, a striking observation one can make with respect to voluntary development is the wide variation in the degree to which workers are oriented toward or interested in

development and self-improvement. Some workers religiously pursue self-development and participate in learning activities regularly, whereas other workers do not spend much time even considering the idea. This difference in employees is of interest from both theoretical and practical points of view.

The general idea of employees possessing a "learning and development orientation" has received some attention from various perspectives. There are several models, theories, and studies that have touched on or directly addressed this concept or related phenomena. London (1983) mentioned it as one of many dimensions that compose the construct of career resilience, a concept that is itself part of the larger domain of career motivation. London (1983) defined a development orientation as a "desire to expand one's skill or knowledge" (p. 623). Similarly, Kozlowski and Farr (1988) measured engineers' "updating orientation," which consisted of professional activities (conventions, meetings, etc.), continuing education, work assignments sought, and technical interest and curiosity. Likewise, Noe (1986) identified "motivation to learn" and other attitudinal variables as important concerns in training. Senge (1990) recognized the importance of "personal mastery" or the pursuit of continuous personal growth and learning within the "learning organization." He said that "people with a high level of personal mastery live in a continual learning mode" (p. 142). Cherrington (1991) discussed "growth-needs" and described these constructs as being intrinsic needs that concern yearnings for self-development, mastery, and challenge. Other research literature has also addressed employee involvement in learning and development activities from various perspectives (cf. Farr & Middlebrooks, 1990; Fishbein & Stasson, 1990; Kozlowski & Hults, 1987; Maurer & Palmer, 1999; Maurer & Tarulli, 1994; Noe, Wilk, Mullen, & Wanek, 1997).

On examining this literature, two issues immediately become apparent. First, although there are a multitude of good theories and studies that are directly or indirectly relevant to this concept, the literature is relatively scattered and diverse. Concepts that are relevant to an employee development orientation can be found in literature on training and development, technical updating, job design, career development, motivation, personality, and social psychology. Some literature directly addresses participation in learning activities (e.g., literature on technical updating), but much of the literature focuses on relevant variables or behavior without explicitly addressing a development orientation. A worthwhile question at this point in the evolution of the research literature is, How do existing theories and studies overlap and how do they complement one another in explaining an employee learning and development orientation (ELDO)? An integration of the diverse literature to date would be helpful, especially if it provides a unique understanding of the concepts and new directions for future research.

A second and related issue that is apparent in the research literature is that although a development orientation is actually a behavioral or psychologi-

cal construct, it has not been clearly articulated in terms of psychological content, structure, and process. For example, in London's (1983) theory of career motivation, this variable is one small part of a wide range of career decisions and behaviors. It was not the purpose of that theory to explicate the development orientation construct in detail. Similarly, Noe's (1986) model includes several psychological variables that affect learning within a training program and subsequent transfer of training, but that model was not intended to explain a general employee development orientation. Therefore, some good questions to ask about this increasingly important construct within organizational settings are, What psychological variables underlie the construct of a learning and development orientation, how do the variables interrelate, and how do organizational factors influence these variables? An analysis of the content, structure, and processes underlying a learning and development orientation is critical to an understanding of how it is developed, maintained, and strengthened. It is also important for an understanding of how job, social, and organizational variables influence various aspects of this orientation. Such an understanding can provide practical insights into how and why some organizational interventions are effective at influencing this orientation in employees and why some interventions are not effective.

To address these two issues in the research literature, this article reconceptualizes and integrates concepts such as growth needs, personal mastery, learning goals, and development orientation within organizational settings. This article proposes how future research should pursue a new understanding of these concepts using a model of ELDO. The model builds on prior work and provides a parsimonious integration of concepts from a diverse literature. Generally, an ELDO is proposed to be a motivational state. This is shown to depend on the degree to which learning and development are relevant to the self. An important aspect of the self is implicit theories about the self (Higgins, 1987, 1989; Markus, 1977, 1983). Implicit theories of the self are composed of one's conception of his or her current self relative to a desired (or feared) state. One's desired (feared) state is referred to as a "possible self" (Cantor, Markus, Niedenthal, & Nurius, 1986; Markus & Nurius, 1986). Prior literature has suggested that possible selves can serve as motives or standards for behavior and growth (cf. Wurf & Markus, 1991). This article begins with this idea and builds on it in two important ways.

First, the concept of possible selves is integrated with literature on implicit theories of abilities and traits (Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Nicholls, 1984) and literature on self-efficacy (e.g., Gist & Mitchell, 1992; Maurer, 2001). It is demonstrated that differences in how malleable or changeable personal characteristics are thought to be will affect (a) the extent to which a person assesses actual and possible selves
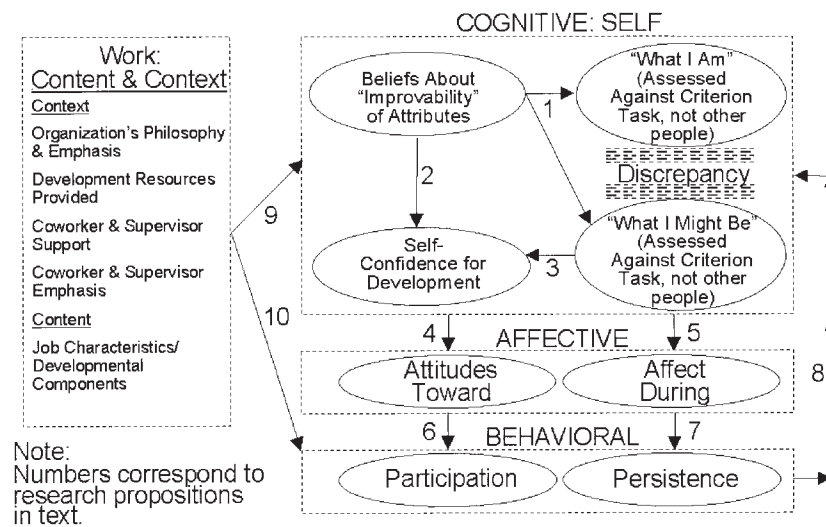
FIGURE 1:   Model of Employee Learning and Development Orientation
Note: Numbers correspond to research propositions in the text.

using task-focused (criterion-referenced) or intrapersonal standards as opposed to interpersonal standards based on other people's performance and (b) self-efficacy for development. This cognitive self is hypothesized to influence attitudes toward and feelings during learning activities. These attitudes and feelings subsequently have effects on participation and persistence in those types of activities.

Second, the article reframes the process by which work and work context variables influence learning and development behavior. It is shown that context and work variables can have four key effects on the self. They can affect (a) the extent to which actual or possible selves reflect malleable, changeable, or improvable traits; (b) the extent to which task-referenced or intrapersonal standards are used to assess the self as opposed to interpersonal standards based on others' performance; (c) the discrepancy between actual and possible selves; and (d) self-efficacy for development. It is also shown that the job and work context variables can have a direct effect on development behavior independent of the cognitive self. The proposed model illustrates that this direct effect, by itself, is not as desirable as the effect that occurs through the self-system. The article shows how future research should pursue a new understanding of the way organizations may influence development behavior. Ten research propositions are offered throughout the article and are tied to Figure 1, which illustrates the interrela-

TABLE 1:   Definition of Constructs/Terms

Construct/Term	Definition
Cognitive	
Actual self	Representation of the attributes one believes he or she actually possesses; "what I am"
Possible self	Representation of the attributes one believes he or she might possess in the future; cognitive manifestations of goals, aspirations, fears; "what I might become"
Intrapersonal, criterion-referenced standards	Gauge functioning relative to own prior or future level of achievement using a criterion task
Incremental implicit theory of the self	Naive assumptions, general beliefs, or personal theory in which one's characteristics are conceptualized as malleable; general theory of reality; beliefs about improvability of personal attributes
Self-efficacy for development	Self-confidence in one's ability to attain a possible self with enhanced or increased personal characteristics; bound to a self within a specific situation or context
Affective	
Attitude toward learning and development activity	Degree to which learning and development activity is evaluated favorably
Affect during learning and development activity	Positive and negative affective feelings experienced (e.g., anxiety, inadequacy, pleasure, enjoyment) during the activity
Behavioral	
Participation in learning and development activity	Involvement in off-the-job learning activities (e.g., workshops, seminars, classes, reading, exercises, etc.), on-the-job activities (e.g., special job assignment, job rotation, etc.), and career exploration (e.g., self-exploration, environmental exploration)
Persistence in learning and development activity	Adaption to changing situations, coping with challenge and difficult constraints and pressures, maintenance of effective functioning
Work context	
Organization's philosophy and emphasis	Degree to which employees are viewed as resources for the future and continuous individual learning and development is emphasized
Developmental resources provided	Extent to which organization provides learning and development resources on and off the job

(continued)

TABLE 1 Continued

Construct/Term	Definition
Coworker/ Supervisor support and emphasis	Social context that is favorable and helpful toward learning and development and that places importance on that process
Work content Job characteristics and developmental components	Job transitions, obstacles, task characteristics (skill variety, task significance, task identity, autonomy, feedback)

tionships of constructs in the model. Table 1 provides definitions of the constructs and terms used in the model.

Learning and Development Defined

Learning is defined here as an increase or change in knowledge or skill that occurs as a result of some experience. Development is an ongoing, longer-term change or evolution that occurs through many learning experiences. Thus, learning experiences contribute to development. An employee who is oriented toward learning and development feels favorably toward and during learning experiences and is continually and persistently involved in such experiences in the pursuit of his or her own development.

Assumptions Underlying the Model

Three assumptions underlie the current model. First, the present model addresses a motivational state that affects involvement in learning and development. It does not address the learning process itself. Thus, it is assumed that learning is a product of the motivation, but learning itself is not the focus of the model. Relatedly, this model does not address transfer of actual learning to a job setting, although other reviews have dealt with this topic (cf. Baldwin & Ford, 1988). Second, it is assumed throughout the following discussion that learning experiences are at least moderately challenging or difficult. They are not mundane or easy. They involve mastering tasks or information that the person has not previously mastered and therefore represent a true opportunity for growth. They need not be extraordinarily challenging and exhausting, but they must represent at least a modestly significant learning opportunity that requires effort. For example, novel tasks such as a special job assignment or taking a class in which one is not simply applying skills or knowledge in the same way as in a prior assign-

ment or class might constitute such an experience. A third assumption in the following discussion is that individual employees are the focus or unit of analysis. Although the model could be expanded to include collective constructs (collective self, collective efficacy, etc.) in which team or group development is addressed, space limitations dictate a treatment of individuals only. Finally, although not an assumption per se, it should be noted that although many of the propositions presented here are new or novel, several are not. However, the purpose of this model is to review and integrate existing literature, and so both existing and new connections should be included in the model. The configuration and collection of the total set of constructs and processes presented here are novel and new.

Cognitive, Affective, and Behavioral Constructs of an ELDO

An orientation might be defined generally as one's position or tendency relative to a domain, object, or issue. One's orientation toward any domain can be characterized by three sets of constructs: cognitive, affective, and behavioral (cf. Dweck & Leggett, 1988; Fiske & Kinder, 1981). The constructs comprising ELDO will be described within this tripartite framework. The present model integrates much prior research, but it combines theory from several primary sources. First, the cognitive portion of the model utilizes the concept of self-schemas from social cognitive literature (Higgins, 1987; Markus, 1983). Second, literature on implicit or naive theories of traits (cf. Dweck et al., 1995; Nicholls, 1984) is integrated with the literature on self-schemas. Third, Noe's (1986) motivation to learn, Dweck and Leggett's (1988) learning goals, and literature on self-efficacy (Bandura, 1977; Gist, 1987; Maurer, 2001) have clear implications for affect and behavior in development and learning. Fourth, London's (1983) career motivation theory provides two concepts that are relevant to the framework: career insight and career resilience. Fifth, the work of several technical updating researchers provides cognitive variables that contribute to involvement in development (Dubin, 1990; Farr & Middlebrooks, 1990; Fossum, Arvey, Paradise, & Robbins, 1986). Sixth, Fishbein and Ajzen's (1975, 1981) theory of reasoned action provides a general structure within which to articulate interrelated cognitive, affective, and behavioral constructs. These and other theories and their interrelationships within the current model will be addressed below.

Cognitive Portion of the Model: The Self

Some employees may be very aware of learning and development issues and may be quite cognizant of the need for and importance of employee self-development. For example, one employee may view an opportunity to vol-

unteer for a committee or task force assignment as having great potential for self-development, and he or she may see the relevance of such an opportunity for his or her own career. However, another employee who could benefit just as much from such an experience may perceive the option as being little more than extra work. Generally speaking, an ELDO begins with a state of mind. Within the cognitive portion of learning and development orientation, self-relevant career knowledge plays a critical role.

A term that refers to self-relevant career knowledge is *career insight*. This is the degree to which a person possesses knowledge of himself or herself in relation to his or her career situation. This includes knowledge of strengths, weaknesses, and career goals (London, 1983). This type of knowledge facilitates an appreciation of the self-relevance of development and learning opportunities. This occurs because knowledge of the "big picture" regarding one's current career situation highlights the need for improvement in specific areas as a means to reach goals. In an empirical investigation, Maurer and Tarulli (1994) found career insight to be related to interest and participation in development activities.

From the perspective of psychological processes, how might self-relevant knowledge such as career insight provide motivation to engage in self-development? A particularly helpful explanation that has an extensive psychological research base is differences in the availability and accessibility of self-schemas (Markus, 1977, 1983). Self-schemas are knowledge structures about the self. Availability refers to whether or not a self-schema is available in memory, whereas accessibility refers to the degree to which the schema is easily accessed and is readily used in interpreting information (Higgins & King, 1981). Because many organizations are currently struggling with the question of how to motivate employees to voluntarily engage in self-development, an understanding of how employees conceptualize the self and how these conceptions relate to learning and development seems critical. More than 5,000 articles about the self have been published since 1987 (Banaji & Prentice, 1994), and Markus (1977, 1983) identified self-schemas as an important psychological concept with powerful implications for behavior. Two types of self-schemas are actual and possible selves.

"What I Am" and "What I Might Become"

Higgins (1987, 1989) discussed the concept of an "actual self." This is one's representation of the attributes one believes he or she actually possesses (e.g., knowledge, skills, abilities, interests, values, etc.). Generally, this is what one perceives himself or herself to be (e.g., "what I am"). A related type of self-schema, "possible selves," is conceptions or representations of what one might be like in the future (Cantor et al., 1986; Markus & Nurius, 1986; see also Oyserman & Markus, 1990, for information on mea-

surement of possible selves). They can be viewed as cognitive manifestations of people's goals and aspirations and thus can have positive valence as potential outcomes (see also Higgins, 1987, 1989). It is also possible to have possible selves with negative valences (e.g., unemployed). A middle-level manager may be able to visualize himself or herself as a senior-level manager or a vice president, positions requiring a greater variety of executive managerial skills. Alternatively, another possible self for a middle manager might be a manager with considerably greater communication skill and technical knowledge. It is impossible to exhaustively describe all possible selves relevant to career development because they are diverse across people and occupations. Generally, possible selves represent "what I might be."

Research on self-schemas has shown that if a person can clearly visualize or imagine himself or herself in a particular state, this may motivate action. This literature has suggested that a possible self that is relatively specific, clear, and accessible should facilitate the pursuit (or possibly the avoidance) of these potential outcomes (cf. Fiske & Taylor, 1991, pp. 189-190). For example, discrepancies between perceived actual selves and conceptions of what one might (or should) be like can result in negative emotional states (Higgins, 1987, 1989). McCauley and Young (1993) noted that gaps in one's skill repertoire are key to motivation to participate in self-development. In agreement with this, Maurer and Tarulli (1994) found perceptions of a need to improve one's skills in specific areas to be related to interest and participation in development activities. Thus, to the extent that one possesses a clearly formed and accessible conception of one's current self within his or her career relative to a preferred state, this discrepancy may help motivate action. This is one way that career insight (London, 1983) can contribute to a development orientation by providing incentive for action.

However, having a clear conception of what one might be (accessible possible selves) alone will not necessarily result in a development orientation. An employee must perceive learning and development activity as being an effective means of attaining possible selves. Dubin (1990) and Farr and Middlebrooks (1990) applied expectancy theory to professional updating behavior. They asserted that perceived instrumentality of learned skills or knowledge for reaching desired outcomes will affect motivation to participate in learning and updating activity. To the extent a person believes that participating in learning activity will lead to the desired state (e.g., promoted), he or she should be more likely to pursue the activity. Both Maurer and Tarulli (1994) and Noe and Wilk (1993) observed that beliefs that self-relevant, positive outcomes would result from participation in development activities were related to participation. These outcomes included things like making more money, doing more interesting work, and being a better, more well-rounded person (Maurer & Tarulli, 1994).

Why do some people perceive learning and development as being relevant to attainment of career-relevant possible selves whereas others do not? The answer to this question lies in important individual differences in the cognitive self. First, people differ in how malleable or changeable they believe career-relevant person characteristics to be. This important difference in self-schemas has effects on the nature of actual and possible selves and on self-efficacy for development.

Beliefs About Improvability of Personal Attributes

Dweck et al. (1995) discussed the nature of implicit beliefs about characteristics of people (e.g., abilities, personality, skills, etc.). They referred to theoretical work by Kelly (1955) and Heider (1958) in which a major component of personality is personal constructs or naive assumptions about the self. According to this viewpoint, implicit assumptions within people's "naive models" of the world will guide the way information about the self is processed and understood. According to Dweck et al. (1995), a belief in fixed versus malleable or changeable characteristics of people is a core assumption in an individual's worldview. In Kelly's (1955) earlier work, this would be similar to a "superordinate" construct that defines a person's reality and provides meaning for events. The implicit theories do not directly determine behavior; rather, they create a framework within which a person interprets the world.

According to Dweck and Leggett (1988) (see also Nicholls, 1984), implicit theories of traits can be distinguished into two types. One is entity theory. In this way of thinking, one's characteristics are conceptualized as fixed and can be measured or evaluated. That is, one's characteristics are static entities that one possesses and carries through life as finite, nonchangeable qualities. The other type of implicit theory is incremental theory. Here, one's characteristics are conceptualized as malleable and constantly evolving in an incremental fashion through an individual's efforts and experiences (see Dweck et al., 1995, for measures of these theories). The theories may lead to different modes of processing information about the self and other people (Dweck, Hong, & Chiu, 1993). Prior research has measured these theories using continuous, categorical scales illustrating that people can hold these theories to varying degrees. This allows individual differences in how strongly someone may believe in malleability or nonmalleability. So in reality, these implicit theories might best be represented by degrees of believing that various personal qualities can be improved. Those who hold strong incremental theories possess strongly held beliefs that attributes are improvable (high improvability beliefs). An important outcome of differences in these implicit theories is that those who hold incremental implicit theories and those who hold entity implicit theo-

ries differ in the standards they use to assess themselves in potential learning situations (Dweck, 1989).

Assessment of Selves Against Criterion Tasks Versus Against Other People

Because people who hold incremental theories believe their personal characteristics can be changed through effort and experience, they are likely to monitor such changes in themselves across time. In assessing job-relevant capabilities, they will use intrapersonal (within-person) standards in monitoring such changes. This means they gauge success relative to their prior level of achievement and relative to a criterion-referenced or task-mastery standard (cf. Dweck, 1989; Jagacinski, 1992). In other words, they incrementally attain personal levels of achievement defined by their own success on the criterion task at hand. Their focus is on changes within themselves as indexed by level of functioning on a specific task. Therefore, it is posited in the current model that people who have an incremental implicit theory of the self will be guided by a possible self with enhanced or increased skills or abilities (e.g., senior-level manager who possesses a higher level of executive and administrative skill).

Because people who hold entity implicit theories do not believe their characteristics can be increased or changed, they are likely to monitor and evaluate their standing on those characteristics relative to others and be concerned with whether they "measure up" compared to them. They adopt interpersonal standards to evaluate success in potential learning situations. They are primarily concerned with their performance relative to peers or other people (Dweck, 1989; Jagacinski, 1992), not relative to specific objectives on the criterion task. They are trying to outperform others in a normative sense, and they gauge progress relative to others' levels of achievement. It is posited in the current model that people who have an entity implicit theory of the self will be guided by possible selves that reflect only normatively high levels of performance; the future self is functioning at a level that surpasses their peers or competitors (e.g., a "star" senior-level manager). They strive to attain that possible self, but incrementally enhanced skills and abilities are not a salient part of that guiding standard. This leads to the following:

> *Proposition 1:* Employees who believe that personal attributes are improvable (i.e., they have an incremental implicit theory of the self) will tend to assess the self against criterion tasks, focusing on within-self (intrapersonal) development. Employees who do not believe that personal attributes are improvable (i.e., they have entity theories) will tend to assess the self against other people, focusing on between-person (interpersonal/normative) differences. Discrepancies between "what I am" and "what I might be" (actual and possible selves) will be conceptualized accordingly.

Influence of Improvability Beliefs on
Self-Confidence for Development

Self-efficacy might be defined generally as a confidence in one's capacity to succeed at a task or challenge (Bandura, 1977). In empirical studies, Maurer and Tarulli (1994) and Noe and Wilk (1993) identified employee self-efficacy as important facilitators of participation in development activities. Tharenou, Latimer, and Conroy (1994) also found that self-confidence increased training and development activity. To the extent that employees are confident that they will succeed if they participate in a learning or development activity, they should be more likely to participate.

In the current model, two types of self-efficacy are distinguished. Self-efficacy for development reflects self-confidence for one's capacity to develop, enhance, or increase one's personal characteristics given his or her current and anticipated situation (Maurer, 2001). In the current model, this is essentially self-confidence for attainment of a possible self with developed personal characteristics, or self-confidence for reduction of the discrepancy between criterion-referenced actual and possible selves. Self-efficacy for performance reflects self-confidence for one's ability to achieve favorable performance. This is essentially self-confidence for attainment of a possible self that reflects normatively high levels of performance. Only self-efficacy for development plays a central role in a development orientation. This distinction is important from a conceptual and theoretical point of view (Maurer, 2001).

A second distinction is also important within the current framework. This is the difference between an incremental implicit theory of the self (improvability beliefs) and self-efficacy for development. An incremental implicit theory reflects one's general theory of reality and beliefs about the extent to which specific types of personal characteristics are malleable or changeable. These beliefs reflect the extent to which it is possible to change the characteristics. An illustrative example is the belief that people can improve or increase their physical conditioning (become more fit, stronger, etc.). One may believe, in principle, that it is possible that one's own physical conditioning could be increased.

Self-efficacy for development, however, reflects self-confidence for attainment of a possible self with enhanced or increased characteristics. This belief is bound to a specific person (the self) within a specific situation or context. Although the person may have an incremental theory of physical characteristics, the person may not necessarily have high self-efficacy for physical development. For example, the person may feel that he or she is too busy, lacks the willpower, does not know how to do it, and does not have access to conditioning equipment. Thus, both context/situational variables

and other aspects of the person may contribute to self-efficacy for development, independent of the person's implicit theory.

There are two cognitive factors that influence self-efficacy for development in the current model. First, believing that personal attributes are improvable (incremental implicit theory) will increase self-efficacy for development. This is because the general belief that personal characteristics can be increased should greatly enhance beliefs that one's own characteristics can be developed. This leads to the following:

> *Proposition 2:* Higher beliefs that personal attributes can be improved (an incremental theory of the self) will be positively associated with self-efficacy for learning and development.

A second positive influence on self-efficacy for development is the availability and accessibility of a task-referenced possible self. When possible selves ("what I might be") become well articulated, detailed, and accessible and specific scripts and behavioral control strategies become attached to them, they evolve into expected selves, meaning the person believes the goal can be attained (Carver, Reynolds, & Scheier, 1994; Oyserman & Markus, 1990). Thus, a highly accessible possible self will positively affect a person's self-efficacy for attainment of it. To the extent that a person can clearly visualize this self, this should enhance self-confidence that he or she can attain that goal.

There is another reason why self-efficacy for development will be enhanced by an accessible conception of "what I might be" that is defined in a task-focused manner. Because those persons pursuing task-referenced possible selves are evaluating progress and success using intrapersonal or task-oriented standards, they can directly control progress toward the goal with the effort they invest to attain the personal, task-referenced standard (Dweck, 1989). This perceived control should enhance self-efficacy. Alternatively, persons pursuing interpersonally defined possible selves will evaluate success normatively. Because they cannot control the performance of their peer or referent group, they may have less self-confidence for attainment of a possible self than those pursuing intrapersonal goals. This leads to the following:

> *Proposition 3:* Possessing an accessible conception of "what I might be" (possible self) defined in a task-referenced, intrapersonal manner will enhance self-efficacy for development.

Affective Impact of Cognitive Self
in Learning and Development

Employees who are oriented toward learning and development have favorable attitudes toward learning and development and they experience favorable affect during learning activities.

Attitudes Toward Learning and Development

Because persons who believe personal attributes are improvable assess the self against the criterion task, they pursue possible selves with enhanced or increased task-relevant personal characteristics. Individuals striving to attain those possible selves will view the process of increasing their skills and abilities as being an important part of that process. Each challenging situation is viewed as an opportunity to learn and incrementally improve or add to one's capabilities (Dweck & Leggett, 1988). Thus, people may seek challenges to increase their repertoire of skills. Therefore, they pursue learning and perceive development activities as being highly relevant to their own success in attainment of their aspirations. From the point of view posited in the current model, growth needs reflect a chronic discrepancy between "what I am" and "what I might be" (actual and possible selves) in which the person is continuously striving to incrementally achieve task-referenced personal goals through relevant learning experiences. Learning goals are emphasized as instrumental in this pursuit of personal growth. Given this high motivation to learn (Noe, 1986), activities that can provide learning and development will be evaluated positively, contributing to favorable attitudes toward learning and development activities.

People who possess entity implicit theories of the self do not have possible selves that reflect increased or enhanced personal characteristics. Therefore, they pursue favorable performance, but learning and development are not significant motivators. Each challenging situation is seen as a test or evaluation of one's ability. One may avoid challenge or situations that may result in negative judgments about competence (Dweck & Leggett, 1988). As a result, learning and development activities are not perceived as being highly relevant to attainment of their aspirations, which has a negative effect on attitudes toward the activities. The theory of reasoned action (Fishbein & Ajzen, 1975, 1981) illustrates why these differences in the self-system contribute to differences in attitudes toward learning and development activities.

The theory of reasoned action specifies that attitudes toward a behavior are a direct result of a person's salient beliefs about the behavior's consequences and how favorable the consequences are perceived to be. Beliefs that a behavior will result in favorable outcomes result in positive attitudes toward the behavior. Thus, if people possess a possible self that has a positive valence (e.g., vice president) and they believe that engaging in development activities is likely to help lead to that possible self, they should have positive attitudes toward development activity.

Having high self-efficacy should also produce favorable attitudes toward development activities (Maurer, 2001). When people perform tasks at which they perceive they are competent, they may be more likely to experience satis-

faction. Muchinsky (1993) asserted that most evidence of a job satisfaction–job performance relationship favors a "performance causes satisfaction" view. This suggests that competence will lead to feeling good about a task. Deci and Ryan (1991) similarly discussed the role of competence in intrinsic motivation and interest in a task. This leads to the following:

> *Proposition 4:* Employees possessing a learning and development-oriented cognitive self (described above) will have more favorable attitudes toward learning and development activities.

Affect During Learning and Development

Dweck and Leggett (1988) have illustrated that being oriented toward learning or performance creates a framework within which people react to and interpret events. Particularly within a challenging task setting in which there is a risk of failure (such as a temporary job assignment that is demanding or a difficult college course), people with performance goals may respond very differently from those with learning goals. Because performance-focused people derive pleasure from favorable judgments of their ability and challenges are viewed as tests of their ability, the risk of failure can be quite detrimental. According to Dweck and Leggett (1988), performance-oriented people may generate negative self-cognitions when they are challenged, feel inadequate, or experience anxiety, threat, and negative affect.

A learning goal, however, means that challenge will be viewed as an opportunity to learn something new, and risk of failure signifies not inadequacy of ability but rather a need for increased effort or a different strategy. This leads to constructive self-instructions, a positive prognosis, and positive affect. Increased effort results in greater intrinsic rewards and heightened involvement and enjoyment. Pleasure is acquired through the pursuit, progress on, and mastery of challenging tasks (Dweck & Leggett, 1988). Colquitt and Simmering (1988) found that for very learning-oriented individuals, low performance levels during a class were less associated with low expectations for success. This finding is consistent with the idea that learning orientations buffer learners against the negative effects of early difficulty (Button, Mathieu, & Zajac, 1996; Dweck & Leggett, 1988). According to Button et al. (1996) and Dweck and Leggett's (1988) findings, in situations in which difficulty at learning and developing is expected, highly learning-oriented individuals (and less performance-oriented individuals) should remain motivated. Thus, people with learning goals should feel more favorable during challenging development activities. Literature on self-efficacy also suggests that those with greater self-confidence or self-efficacy for a task will enjoy the task more and experience less negative affect than those with low self-efficacy (Gist, 1987). This leads to the following:

Proposition 5: Employees possessing a learning and development-oriented cognitive self (described above) will experience more favorable affect during learning and development activities.

Behavioral Portion of the Model: Participation and Persistence

Two types of overt behavior that reflect an ELDO are participation in learning activities and persistence within those activities.

Participation

Fishbein and Ajzen's (1975, 1981) theory of reasoned action illustrates that beliefs about some behavior will influence attitudes toward the behavior, and attitudes will influence behavioral intentions and subsequently actions. Similarly, Triandis (1994) asserted that behavioral intentions will be influenced by the perceived consequences of the behavior and affect surrounding the action. These theories would suggest that development-oriented people who feel favorably toward development activity will also be involved in development behaviorally.

Fishbein and Stasson (1990) recently demonstrated the relevance of the theory of reasoned action to predicting attitudes toward and attendance of a training session. Maurer and Palmer (1999) showed the relevance of a closely related theory, the theory of planned behavior (Ajzen, 1991), to management development following feedback. In addition, Noe and Wilk (1993) reported significant correlations between various types of development activity and two attitudinal or affectively loaded variables: employees' evaluations of their prior development activities and learning attitudes (motivation to learn).

Behavioral involvement in growth and development takes two general forms. The first is locating and participating in developmental experiences. Kozlowski and Hults (1987), Kozlowski and Farr (1988), Maurer and Tarulli (1994), and Noe and Wilk (1993) observed variability in the degree to which employees sought and participated in development and learning activities such as workshops, seminars, college courses, correspondence courses, individual exercises, and job assignments.

The second general form of behavioral involvement is seeking additional career-relevant information. According to Greenhaus (1987, 1988), two types of career exploration behavior are self-exploration and environmental exploration (see also Stumpf, Colarelli, & Hartman, 1983). In self-exploration, one acquires information about one's self, for example on values, interests, and skills. To do this, one might participate in career-planning activities, career seminars, individual exercises, or career counseling. Similarly, one might pursue performance

or skill feedback from a formal assessment center or from supervisors, peers, subordinates, or customers. Environmental exploration might consist of such behaviors as reading about companies or occupations, attending seminars on opportunities in specific fields, participating in career-planning workshops, or any other behaviors designed to acquire information about occupations, jobs, or organizations (Greenhaus, 1988). According to Greenhaus (1988), these self- and environmental-exploration activities are ongoing and may continue throughout a career. This leads to the following:

> *Proposition 6:* The extent to which employees have favorable attitudes toward learning and development activities will be positively associated with behavioral involvement in those activities.

Persistence

Development-oriented individuals experience less anxiety and more positive affect during the pursuit of difficult and challenging tasks. As a result, they are able to adapt to changing work situations, cope with challenge and difficult constraints and pressures, and maintain performance levels throughout demanding developmental experiences. London (1983) referred to this behavioral characteristic as career resilience. Noe (1986) similarly outlined motivation to learn as including enthusiasm for learning that results in persistence when program material is difficult. This type of behavior is remarkably similar to mastery-oriented behavior exhibited by people with learning goals, as described by Dweck and Leggett (1988). This leads to the following:

> *Proposition 7:* Employees who experience more favorable affect during learning and development activities will be more likely to persist when those activities are challenging.

Strengthening of a Development Orientation

Alderfer (1972) stated that as growth needs are satisfied, they may become even more important to an individual. Similarly, successful involvement in learning and development activity may strengthen a learning and development orientation. Given that development-oriented people may be more likely to experience success in learning activities due to mastery-oriented behavior (Dweck & Leggett, 1988) and career resilience (London, 1983), it seems likely that they will maintain or even increase their interest in such activities. As a result of participation, their cognitions may become more oriented toward learning and development activity. That is, they may obtain further self- and career-relevant knowledge during development activity (Stumpf et al., 1983), leading to even more accessible self-schemas (actual and possible selves). For example, they may learn more about their

own capabilities and interests, as well as more about potential professional and career goals. In addition, Gist and Mitchell (1992) have illustrated how mastery experiences or attainments will lead to increased self-efficacy. Success in learning activity will lead to greater self-efficacy for such activity. Observing one's own personal characteristics increase following a learning experience may also cause one's implicit theory of the self to become more incremental in nature.

Nordhaug (1989) has illustrated that one perceived outcome of participating in training activities is an increased interest in training and learning activities or the development of a learning motivation. Similarly, Kraiger, Ford, and Salas (1993) and Noe et al. (1997) have suggested that increased attitudinal as well as motivational variables (e.g., mastery vs. performance orientation, self-efficacy, and goal setting) may be outcomes of training. Thus, successful behavioral involvement in development will likely lead to strengthened schemas and more accessible positive attitudes (Fazio, 1989; Fazio & Zanna, 1981), which should lead to further behavioral involvement. This leads to the following:

> *Proposition 8:* Successful participation in learning and development activities will elevate the extent to which the cognitive self is oriented toward learning and development.

Antecedents of an ELDO

Within an organization, there are two major antecedents of an ELDO. The first is characteristics of the work context. The second is the content of the work itself. The antecedents presented here are drawn from research in several areas, but work in technical updating has identified climate/context and job variables as being key concerns in obsolescence (cf. Dubin, 1990; Kaufman, 1973, 1989; Kozlowski & Farr, 1988). Also, proponents of the quality movement in organizations (cf. Deming, 1986) have prescribed organizational contexts that promote continuous learning, and these ideas are integrated into the current model. Within the model, both of the antecedents work content and work context contribute to the formation, strengthening, and maintenance of a development orientation. These will be described below in detail, along with an analysis of the way in which they affect the cognitive, affective, and behavioral constructs of the model.

Work Context

The work context variables that affect a development orientation are company philosophy and emphasis on development and learning, the developmental resources provided to employees, coworker/supervisor emphasis/expectations, and coworker/supervisor support.

Company Philosophy and Emphasis

A president of Hanover Insurance is quoted as once saying, "In the type of organization we seek to build, the fullest development of people is on an equal plane with financial success" (Senge, 1990, p. 144). In this vein, London (1991) presented an analysis of the differences between the human resource philosophies in two companies. In one organization, the employees were viewed as tools for the accomplishment of immediate business needs. In the other company, employees were viewed as resources for both current and future business needs. These two philosophies affected the level of support and the purpose of career development efforts in the companies. The second company offered a variety of development programs whereas the first emphasized managers' ability to meet immediate business needs and provided few opportunities for development. Similarly, Farr and Middlebrooks (1990) pointed out that some organizations are concerned with only performance of employees. They suggested that to enhance updating (and development), organizations need to emphasize learning goals (e.g., Dweck & Leggett, 1988).

One key principle within organizations espousing total quality management (TQM) is learning and continuous improvement. Hackman and Wageman (1995) noted that the founders of the quality movement believe people inherently want to learn, but this inclination can be undermined by systems that create fear and defensiveness. Deming (1986) suggested that punishment for poor performance and appraisal systems that involve comparative evaluations of employees will negatively affect learning. TQM organizations create good learning environments by minimizing fear and competition and providing workers with a rich set of learning tools (Hackman & Wageman, 1995).

Independent of the quality literature, several researchers (cf. Dubin, 1990; Kozlowski & Farr, 1988; Kozlowski & Hults, 1987; London, 1991; Maurer & Tarulli, 1994; Tracey, Tannenbaum, & Kavanaugh, 1995) have noted the relevance of policies and/or a development orientation by the organization. Examples of policies or organization climate factors that facilitate development activity are encouraging innovation, accepting occasional failure, disseminating career information, creating a climate in which peers communicate and foster creativity, and management policies that reward development.

Developmental Resources Provided by Company

To the extent that the organization provides not only an emphasis on learning and development but also the resources with which to become

involved in such activity, involvement should be greatly enhanced. London (1991) discussed differences in developmental opportunities that companies may provide and listed methods for increasing career motivation. Training and development activities such as workshops, skill-building seminars, job or task-force assignments, independent reading, videotapes, or other types of learning activities can be very valuable for skill development (Goldstein, 1993). Greenhaus (1988) discussed career exploration activities that can also be quite useful to employees in career development efforts. Appropriate feedback systems (such as 360-degree ratings) are among the useful resources that might be provided.

Coworker/Supervisor Emphasis and Support

To the extent that coworkers and supervisors emphasize and support learning and development in their daily activities, this should affect the development orientation of an employee (and also transfer of trained behaviors to the job; see Tracey et al., 1995). Noe (1986); Noe and Wilk (1993); Maurer, Mitchell, and Barbeite (in press); and Maurer and Tarulli (1994) discussed the importance of a social context that is favorable and supportive toward training and development activity. Dubin (1990) also included peer and supervisor factors in his model of updating. McCauley and Young (1993) asserted that for a relationship to be developmental, it must affect motivation, opportunity, or support for learning. To provide support, coworkers or supervisors can act as friends, cheerleaders, and reinforcers or providers of rewards for reaching developmental goals (see also Douglas & McCauley, 1999; Leibowitz & Schlossberg, 1981; Noe, Noe, & Bachhuber, 1990).

Social support from supervisors and from coworkers may not be identical in content (Hayes, 1993). Coworkers may, for example, assist with developmental efforts (e.g., providing peer feedback ratings or assisting in the completion of a task assignment). Similarly, they may cover job assignments while the person is away at a seminar or workshop. Likewise, coworkers may serve career-enhancing functions by sharing career information, training materials, knowledge, or other materials related to career-developmental endeavors, or they may serve psychosocial functions by providing friendship, emotional support, and confirmation (cf. Kram & Isabella, 1985).

Supervisors may especially provide support for development. Kozlowski and Farr (1988); Dubin (1990); Maurer and Tarulli (1994); Hazucha, Hezlett, and Schneider (1993); and Noe and Wilk (1993) all noted the importance of supervisors in supporting developmental efforts by subordinates. Supervisor support for career development might consist of such things as providing a useful performance appraisal and ongoing feedback, jointly setting performance objectives with a subordinate, helping develop

career plans, and providing adequate time for attending training. London (1993) found that supervisor support for career development was related to subordinate self-relevant career knowledge (career insight) and effective striving under challenging conditions (career resilience). Noe et al. (1990) also found a relationship between managerial support and career motivation. London (1991) pointed out the need for organization policies to provide support for supervisors' developmental efforts. Supervisors are limited in the extent to which they can contribute to subordinates' development if the organization does not support this effort. Mone (1988) outlined the importance of training managers to be "developers" of their subordinates.

A special form of support that may come from a supervisor or senior colleague is mentoring. Mentors also provide career-enhancing functions such as sponsorship, coaching, exposure, visibility, and challenging work, and they can provide psychosocial functions such as role modeling, counseling, confirmation, and friendship (Kram, 1988).

Work Content

Kozlowski and Farr (1988) reviewed research on technical updating that illustrates that the degree of job challenge or complexity is a key factor in fostering updating. They asserted that jobs that are rich in details, provide opportunities to apply a variety of knowledge and skills on identifiable chunks of tasks, and have capabilities stretched should promote updating (Dubin, 1990; Kaufman, 1973). Kozlowski and Farr (1988) recognized the relevance of Hackman and Oldham's (1976) job characteristics model, which acknowledges the importance of skill variety, task significance, task identity, autonomy, and feedback. Kozlowski and Farr (1988) found that updating behavior by engineers was related to job characteristic perceptions.

In managerial jobs, McCauley, Ruderman, Ohlott, and Morrow (1994) identified three categories of job variables that are related to learning and development: job transitions (involving changes in role, job content, status, etc.), task-related characteristics (such as creating change, high level of responsibility, and nonauthority relationships), and obstacles (such as coping with difficult situations, difficult boss, etc.). These job components reflect the task characteristics discussed above.

Maurer and Tarulli (1997) raised the question of whether certain types of jobs will promote a learning and development orientation whereas others will not. Those authors addressed occupational environment dimensions from Holland's (1985) theory of vocational choice, which is used widely in career development and planning. This system can be used to identify occupational interests and potentially compatible jobs and careers. Maurer and Tarulli (1997) found that certain types of occupations in Holland's (1985)

framework (e.g., investigative) were associated with the job characteristics described above, whereas other Holland job types (e.g., conventional) were not associated with characteristics that promote development.

Impact of Work Content and Context Variables on the Cognitive Self

Consistent with the current model that emphasizes cognition, affect, and behavior, Hackman (1992) asserted that the stimuli to which one is exposed at work can influence an employee's informational states, affective states, and behaviors. It is posited throughout the current discussion that one's work and work context can influence the content and structure of one's cognitions. Two factors that will increase the accessibility of a cognitive schema are recency and frequency of activation (Higgins & King, 1981). To the extent that information relevant to learning and development is frequently encountered by an employee, it should have an impact on the nature and accessibility of the cognitive constructs relevant to a development orientation.

The work and work context variables have effects on four aspects of the self system: (a) the degree to which the employee believes that personal attributes are improvable (or espouses an incremental theory), (b) the extent to which conceptions of "what I am" versus "what I might be" (actual vs. possible selves) are assessed against a criterion task instead of against other people, (c) the discrepancy between "what I am" and "what I might be" (actual and possible selves), and (d) self-confidence for learning and development.

Work Content and Context and Incremental Implicit Theories

Human resource philosophies that emphasize employee flexibility, growth, and continuous development set the tone for an employee's self-relevant cognitions and implicit theories. For example, TQM firms emphasize an incremental approach to success (Hackman & Wageman, 1995), potentially causing employees to think along these lines. The presence of a wide variety of learning and growth resources communicates to employees that continuous growth is not only possible but is also essential. Likewise, when one continuously encounters coworkers or supervisors who emphasize and support growth and self-development, this should shape one's thinking about the malleability of personal characteristics. In a developmental peer/subordinate rating program, Maurer and Tarulli (1996) found that several factors were positively related to raters' beliefs that the group of managers being rated in the program were capable of developing or improving their skills. These factors were availability of development resources, social support for development, and time constraints that conflict with training and develop-

ment activities. The development capability beliefs were also positively related to attitudes toward the developmental intervention.

In a sense, information encountered by the employee within his or her work context can have a persuasive effect on his or her beliefs about the malleability of job-relevant capabilities. In support of the idea that persuasion may influence implicit theories, Dweck et al. (1995) described research by Bergen (1991) in which he induced college students to adopt either incremental or entity implicit theories of intelligence by presenting them with a scientific article that compellingly argued for one or the other theory.

Wood and Bandura (1989) also induced incremental versus entity conceptions of ability in subjects participating in a managerial decision-making task through introductory instructions to the task. They informed subjects that the skill was either developed through practice and effort or that the skill reflected stable, underlying cognitive capabilities. Those who received the entity induction experienced a loss in self-efficacy, set lower goals, and became less efficient. Those performing under an incremental induction sustained self-efficacy, set challenging goals, and were more effective. In a similar manner, Martocchio (1994) induced conceptions of ability in a microcomputer training course. Those in an incremental condition experienced a significant decrease in computer anxiety and significant increase in computer efficacy beliefs between pretraining and posttraining assessments. Those in an entity condition experienced no change in computer anxiety and showed a decrease in efficacy beliefs. Thus, research suggests that implicit theories of ability are susceptible to influence and that these schemas affect learning goals, efficacy beliefs, anxiety, and performance.

Implicit theories of the malleability of job-relevant capabilities might also be affected by modeling. To the extent that learning and development is common within an organization, it is likely that any employee may observe a coworker engage in learning activities and successfully develop personal qualities. Directly observing an incremental change may affect the employee's beliefs in the feasibility of that process.

Another potential influence on implicit theories is mastery. To the extent that a person observes a change in his or her own capabilities due to a learning experience, this should serve as a particularly compelling source of information that helps to shape an employee's implicit theory of the self.

Work content may similarly lead to an incremental theory of the self. Challenging work such as that described above involves task assignments that may require learning of new techniques, knowledge, procedures, or skills. To the extent that these experiences result in an increase in specific personal characteristics, these discrete on-the-job learning mastery experiences should also shape an employee's implicit theory. Likewise, to the extent that one is surrounded by others engaged in the same challenging work, and they can be observed to engage in developmental experiences successfully, this can serve as a source of modeling, which also can shape the implicit theory. This leads to the following:

> *Proposition 9a:* Work content and context variables will influence the extent to which an employee believes that personal attributes are improvable (i.e., espouses an incremental theory).

Work Content and Context and Use of Task-Focused Standards

Ames and Archer (1988) performed an analysis of climate in the classroom and found that climate could be characterized by the degree of emphasis on mastery and performance goals. An emphasis on mastery goals meant that success was defined as improvement and progress in learning. Value was put on effort and learning, and satisfaction was derived from challenge and hard work. Errors and mistakes were viewed as part of the process of learning, and the focus of attention was on learning itself. The criteria used to evaluate success were absolute or criterion referenced and whether or not one was making progress toward those criteria. An emphasis on performance goals meant that success was defined as high grades or high normative performance. Value was put on having normatively high ability, and satisfaction was derived from doing better than others. Errors and mistakes were anxiety eliciting, and the focus of attention was on how well the student was performing relative to others. The criteria used to evaluate success were normative. In the study by Ames and Archer (1988), an emphasis on mastery goals in the classroom was associated with more positive attitudes toward the class, a preference for more challenging tasks, and more effective learning.

Along these lines, Deming (1986) called for organizations to remove systems that create fear such as punishment for poor performance and performance appraisal systems that involve comparative evaluation of employees. Organizations that define work and career-relevant objectives in criterion-referenced terms help to shape the accessibility of possible selves defined in these terms. For example, providing an employee with individualized skill feedback and developmental objectives without reference or comparisons to others will focus attention on intrapersonal change in the skill, relative to a criterion-referenced standard. In this vein, Masterson and Taylor (1996) proposed a performance appraisal system to be used in organizations espousing TQM: The scale of measurement proposed was absolute, against objective, behaviorally defined expectations. It is important to note that performance of employees is still very important in such organizations; however, performance is defined in criterion-referenced terms (specific behavioral objectives) and not in relative or normative terms.

This literature suggests that the context in which a learning task occurs may influence how that task is framed and, specifically, how learners assess themselves. Higgins (1987, 1989) suggested that the actual or possible self

that is accessible may originate from one's own standpoint or from other people's standpoint. For example, supervisors and coworkers may communicate what they think a person is like currently or what they think the person should be like, and these conceptions may capture a person's attention. Similarly, Cantor et al. (1986) described the working self-concept as a subset of self-relevant knowledge or one of all possible self-concepts that are salient at any given time. Markus and Cross (1990) similarly asserted that structures of the self are social products. These authors point out that one's current view of the self can be derived from the particular collection of self-conceptions made salient by the prevailing social context. Therefore, it is posited in the current model that the work context may play a significant role in shaping the standards used to assess actual and possible selves.

Assessment feedback, developmental opportunities, and supervisors and coworkers that put an emphasis on defining and achieving individualized goals promote the use of criterion-referenced standards in assessing the self. This contributes to a learning and development orientation. Organizations that promote competition and comparative performance will promote the adoption of interpersonal and norm-referenced standards, which contributes to a performance goal emphasis.

In agreement with this general idea, Butler (1992) found that students' interest in normative versus criterion-referenced/task information was affected by the degree of emphasis in the task setting on performance or learning goals. Likewise, Butler (1987) found that different types of feedback to students shifted them to either a performance-oriented or learning-oriented state. Praise and grades (which are normative or performance oriented and focus attention on social comparison) led to a performance orientation by students. Individualized comments (which focus attention on the task and are criterion referenced/intrapersonal) led to a learning orientation.

Work content can also influence the use of intrapersonal standards in assessing the self. Challenging work such as that described above will likely involve constantly encountering new situations and having to learn and use a variety of skills and knowledge. The work may frequently require growth in specific skill areas. To the extent that work frequently involves this growth process, employees will necessarily need to monitor changes in their skills and relevant characteristics as indexed by the tasks they are performing. This will promote the use of intrapersonal, criterion-referenced standards in assessing the self. This leads to the following:

> *Proposition 9b:* Work content and context variables will influence the extent to which conceptions of the self are assessed against criterion tasks instead of against other people.

Work Content and Context and the Accessibility of Actual Self–Possible Self Discrepancy

An organization that espouses continuous improvement and development will provide incentive for and emphasis on the ongoing pursuit of personal growth. Through assessment, feedback, and other developmental resources, knowledge of the actual self can be increased and made more accessible. Likewise, through careful thought about and exploration of career opportunities, options, and expectations, one may clarify possible selves. Gaps (McCauley & Young, 1993) or discrepancies (Higgins, 1987) between the two should thus increase greatly in accessibility. Work content can also increase the accessibility of the actual self–possible self discrepancy. Characteristics of work such as skill variety and feedback should provide relevant information on skill strengths and weaknesses, enhancing the availability and accessibility of self-relevant knowledge (actual self). Furthermore, the opportunity to be involved in new and varied tasks should also provide an opportunity to learn about preferences or likes and dislikes for various types of work. This should contribute to knowledge about viable career options based on these interests. Thus, enriched work may also increase the availability and accessibility of possible selves and the discrepancy between the two. Consistent with this reasoning, Noe et al. (1990) found that motivating job characteristics were related to career insight. This leads to the following:

> *Proposition 9c:* Work content and context variables will influence the accessibility of the discrepancy between actual and possible selves.

Work Content and Context and Self-Efficacy for Learning and Development

An organization that emphasizes and supports learning and development and that provides resources to develop should enhance employees' self-confidence in their own capacity to develop (Maurer, 2001). In addition, to the extent learning and development is common in such organizations, any employee is likely to observe others engaged in such activity, providing a source of modeling. Modeling has been shown to enhance self-efficacy for accomplishment of a goal (Gist & Mitchell, 1992). Likewise, to the extent that learning goals are emphasized and mistakes or errors are perceived as being part of the process (e.g., Ames & Archer, 1988), there should be less anxiety by employees during challenging activities, also enhancing self-efficacy (Gist & Mitchell, 1992) for learning.

Work content can also enhance self-efficacy for learning and development. If an employee is frequently involved in challenging task assignments that require learning new skills or knowledge, these discrete learning experiences, if successfully completed, are essentially learning mastery experiences (Maurer,

2001). These mastery experiences should enhance self-efficacy for learning (Gist & Mitchell, 1992). Likewise, to the extent that one is surrounded by others in the job engaged in challenging work, and they can be observed to engage in developmental experiences successfully, this can serve as a source of modeling, which also can increase self-efficacy. This leads to the following proposition:

> *Proposition 9d:* Work content and context variables will influence self-efficacy for development.

Direct Impact of Work Content and Context on Behavior

The work content and context variables described above can have a direct effect on development behavior independent of the effects on the self-system. Social variables that directly affect behavior are referred to as normative influences (Fishbein & Ajzen, 1975; Hackman, 1992; Triandis, 1994). Under this type of influence, one's behavior does not necessarily reflect one's own beliefs and attitudes toward the behavior. This distinction is an important one within the current model. Under normative influence, one is only getting involved in learning activity to be consistent with others' expectations. The organization, supervisors, coworkers, or one's job may require one to engage in learning and development activity.

A lack of self-determination to act will likely influence the degree of intrinsic interest and motivation the person has for participation (Deci & Ryan, 1991). In a training context, Baldwin, Magjuka, and Loher (1991) observed that those trainees that had a choice of training had a greater motivation to learn, and not receiving one's choice was associated with significantly lower motivation to learn and lower learning outcomes. Similarly, in research by Hicks and Klimoski (1987), those perceiving they had high freedom to attend training reported more favorable posttraining reactions and higher achievement scores than those who perceived little freedom in their choice.

Normative influences on behavior in the current model do not occur through the cognitive and affective constructs. Thus, variables within the work content or context may influence a person to participate in development, but bypassing the cognitive and affective constructs means that participants may not perceive the self-relevance of learning and development or its value in career success or in achieving valued outcomes. Similarly, they may not possess high efficacy beliefs for success in those activities. As a result, their affect toward and during development activities may not be positive. In fact, if they have negative experiences during these activities, they may develop negative attitudes and may be prone toward helpless behavior (Dweck & Leggett, 1988) during the potentially challenging tasks. Therefore, organizations should be wary of requiring or forcing participation in

development activities. Noe, Wilk, and Gorski (1994) recently demonstrated that perceived obligation to participate in development activities was counterproductive: It was negatively related to subsequent participation in training.

This is not to say that normative influences are all bad. For example, it is conceivable that "coaxing" participation in a supportive environment or in a situation that is explicitly designed to ensure success and learning will help develop favorable affective reactions. Likewise, to the extent that the developmental experience includes some type of orientation or educational component that provides relevant information on the value and relevance of development, it is also possible that people may develop favorable feelings. In such interventions, the constructs identified within the cognitive self-system should receive explicit attention. Hackman (1992) suggested that in group settings, it is likely that both social influence processes (informational, normative) operate to some extent. Likewise, within organizational settings, it is likely that both sources influence development behavior. The critical point to note in the current model, however, is that normative influences alone or with insufficient concurrent cognitive influences will likely be counterproductive. This leads to the following:

> *Proposition 10:* Work content and context variables will directly affect behavioral involvement in learning and development activity independent of the effects on the cognitive self. This effect alone is counterproductive in the pursuit of building a learning and development orientation among employees.

Summary and Conclusions

As technology and business markets evolve at a rapid rate and as organizations undergo continuing changes, voluntary employee learning and development will remain a critical issue in the workplace. For organizations to be competitive, and for workers to meet individual challenges and to pursue careers that provide multiple rewards, voluntary continuous learning and self-development will be key. Given the complexity of the problem of promoting a learning and development orientation among employees, a parsimonious integration of scattered concepts, theories, and research was needed to explain differences in ELDO. The current model is an effort toward that end.

The model is consistent with existing research, but it reconceptualizes and integrates concepts such as growth needs, personal mastery, and development orientation within organizational settings, and it provides some ideas regarding how future research should pursue a new understanding of these concepts. An advantage of the model is that it attempts to move toward an understanding of content and processes underlying an ELDO, as well as the processes by which work and work context variables combine to engender and maintain a development orientation. The major research agenda to

come out of this article is the set of propositions described, the unique collection of propositions and constructs, and their interrelations in the form of a proposed model. The 10 research propositions provide relatively specific ideas for relationships to be tested in organizational settings. However, there are any number of other research issues that come out of this model.

For example, with respect to the idea of beliefs about the improvability of person attributes (incremental implicit theory), it would be interesting to know more about the dimensionality of these beliefs within the world of work. Are some work-relevant attributes perceived to be more improvable than others? Do some types of employees believe work-relevant attributes are improvable whereas other types of employees do not?

Another research issue that follows from this model is the degree to which constructs such as learning and performance goals, growth needs, development orientation, and motivation to learn are empirically related to the constructs and processes outlined in this model. Can variables in the ELDO model account for the others empirically? Are other personality constructs such as conscientiousness, openness to experience, or other "Big 5" constructs related to these variables? Very little research has examined personality variables in relation to learning motivation (see Colquitt & Simmering, 1998). Also, can growth need and learning goal measures be influenced through manipulating the constructs identified in the ELDO model? It would also be interesting to trace the developmental evolution of a learning and development orientation following the introduction and implementation of developmental opportunities in an organization to determine if the cognitive self changes in response to developmental interventions, resulting in subsequent affective and behavioral changes.

Another research issue centers on constructs relevant to continuous learning and how they might be used in other human resource functions such as employee selection. Could and/or should some of the kinds of constructs addressed in the ELDO model be considered when selecting employees into a setting that demands continuous learning of employees? If so, how should these kinds of constructs best be measured? Research on these issues has employed various types of self-rating scales and self-report instruments; however, would these measures work effectively in an employee selection setting in which applicants would have a motive for describing themselves more favorably than they actually are on these dimensions? How could this issue be addressed in measurement? Use of constructs relevant to the tendency to be involved in continuous learning might be considered and explored in employee selection using various types of instruments.

Several research issues stem from the portion of the model in which work content and work context variables influence cognitive and behavioral aspects of ELDO. One general question is, Which types of organizational designs, policies, and programs are most effective at engendering and fos-

tering ELDO among employees? What types of developmental resources and which types of developmental relationships are most effective at enhancing ELDO? A related question exists in relation to performance management, goal setting, feedback, and training interventions: Is ELDO enhanced when there is an emphasis on defining performance in specific, task-related terms instead of, or in addition to, emphasizing relative performance and being competitive? Also, the model describes how forced participation in development activity may not result in optimal results. However, might an enhanced ELDO result from required participation if it is paired with careful attention to attempts to positively influence the cognitive constructs described in the model?

Another research issue that comes out of the ELDO model is how to address and understand demographic differences (e.g., race, gender, and age) in learning and development behavior. Can differences in behavior associated with age, for example, be traced to differences in not only the cognitive, affective, and behavioral constructs but also the work and work context variables? If there are age differences in resources, support, and job experiences, this could negatively affect employee development opportunities and, subsequently, ELDO of older workers. Maurer and Rafuse (2001) described how differences in treatment of older workers with respect to employee development might negatively affect their careers and could constitute a legal concern. Likewise, Maurer (2001) illustrated how these processes could affect self-efficacy for development of older workers. Perhaps research on the ELDO model could be oriented to understand differences in development behavior associated with age as well as gender and race.

Several types of research designs might be used to test the research propositions presented in the model. First, given that organizational-level variables such as organizational philosophy and emphasis are included in the model, it might be worthwhile to use multilevel research designs (cf. Mossholder & Bedeian, 1983), which allow for cross-level inferences regarding organizational-level or higher level effects on individual perceptions, beliefs, attitudes, and behaviors. Ideally, such designs would include data from many, diverse organizations. Second, it would be helpful to conduct experimental or quasi-experimental research (Cook & Campbell, 1979) involving organizational interventions, redesign, and/or policy changes in which the effect of changes or differences in the antecedent variables on cognitive, affective, and behavioral constructs in a development orientation can be directly assessed. Longitudinal data would be particularly useful. Cross-sectional studies can also be useful to identify nomological networks of constructs to determine whether systems of relations are consistent with predictions. Research thus far has suggested that both objective or "hard" data and perceptual or "soft" measures are relevant within this research and that the two may not necessarily be strongly or even

significantly related (e.g., Noe & Wilk, 1993). Therefore, data sets including both types of variables would be ideal.

From a practical perspective, the model reframes the ways in which organizations may successfully affect employee interest and participation in learning and development activities. The model also helps to illustrate why some attempts at this endeavor may fail. For example, it is clear that it is not enough for an organization to simply require training and development activity to build an ELDO. Push alone will not necessarily engender a state of mind that leads to people's feeling favorably toward and during learning activities. This highlights the difference between self-development and mandated development. The model suggests that an ELDO is a motivational state that depends on the degree to which learning and development is relevant to the self. For practitioners to affect the cognitive parts of ELDO, the portions of the model that describe the influence of work content and context are particularly relevant.

The processes by which work and work context variables affect the cognitive, affective, and behavioral constructs are described in the model. The description illustrates that participation in learning and development activities is determined by many variables. The model might serve as a diagnostic tool to help determine why attitudes toward or participation in learning and development activity is less than desired in any given situation. That is, the constructs and processes presented here may provide clues regarding the source of differences in ELDO. Similarly, the variables might be monitored across time within a given organization that is attempting to maintain a learning culture.

A related concern in practice is the relationship between performance and learning. In a recent meta-analysis, Beaubien and Payne (1999) found that learning and performance goals are independent (uncorrelated); they are not opposite ends of the same continuum. Therefore, it seems quite possible that people can have a high ELDO and also a high concern for effective performance. It is not the case that those who are highly oriented toward development are not concerned with job performance. The model illustrates that an emphasis on learning and on performance need not be mutually exclusive. Rather, when specific performance objectives are set and evaluated using task-referenced, intrapersonal terms, this should promote learning and favorable performance. When employees are striving to achieve conceptions of what they might be, defined in terms of specific achievements on a relevant task rather than in terms of outperforming others, ELDO might be enhanced and performance goals can be reached.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50* 179-211.

Alderfer, C. (1972). *Existence, relatedness, and growth: Human needs in organizational settings*. New York: Free Press.

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, *80*, 260-267.

Baldwin, T., Magjuka, R., & Loher, T. (1991). The perils of participation: Effects of choice of training on trainee motivation and learning. *Personnel Psychology*, *44*, 51-66.

Baldwin, T. T., & Ford, J. K. (1988). Transfer of training: A review and directions for future research. *Personnel Psychology*, *41*, 63-105.

Banaji, M., & Prentice, D. (1994). The self in social contexts. *Annual Review of Psychology*, *45*, 297-332.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*, 191-215.

Beaubien, J. M., & Payne, S. C. (1999, April). *Individual goal orientation as a predictor of job and academic performance: A meta-analytic review and integration*. Paper presented at the annual meeting of the Society for Industrial and Organizational Psychology, Atlanta, GA.

Bergen, R. (1991). *Beliefs about intelligence and achievement-related behaviors*. Unpublished doctoral dissertation, University of Illinois, Urbana-Champaign.

Butler, R. (1987). Task-involving and ego-involving properties of evaluation: Effects of different feedback conditions on motivational perceptions, interest, and performance. *Journal of Educational Psychology*, *79*, 474-482.

Butler, R. (1992). What young people want to know when: Effects of mastery and ability goals on interest in different kinds of social comparisons. *Journal of Personality and Social Psychology*, *62*, 934-943.

Button, S. B., Mathieu, J. E., & Zajac, D. M. (1996). Goal orientation in organizational research: A conceptual and empirical foundation. *Organizational Behavior & Human Decision Processes*, *67*, 26-48.

Cantor, N., Markus, H., Niedenthal, P., & Nurius, P. (1986). On motivation and the self-concept. In R. Sorrentino & E. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 96-121). New York: Guilford.

Carver, C., Reynolds, S., & Scheier, M. (1994). The possible selves of optimists and pessimists. *Journal of Research in Personality*, *28*, 133-141.

Cherrington, D. (1991). Need theories of motivation. In R. Steers & L. Porter (Eds.), *Motivation and work behavior* (pp. 31-43). New York: McGraw-Hill.

Colquitt, J. A., & Simmering, M. J. (1998). Conscientiousness, goal orientation, and motivation to learn during the learning process: A longitudinal study. *Journal of Applied Psychology*, *83*, 654-665.

Cook, T., & Campbell, D. (1979). *Quasi-experimentation*. Boston: Houghton Mifflin.

Deci, E., & Ryan, R. (1991). Intrinsic motivation and self-determination in human behavior. In R. Steers & L. Porter (Eds.), *Motivation and work behavior* (pp. 44-58). New York: McGraw-Hill.

Deming, W. E. (1986). *Out of the crisis*. Cambridge, MA: MIT, Center for Advanced Engineering Study.

Douglas, C., & McCauley, C. (1999). Formal developmental relationships: A survey of organizational practices. *Human Resource Development Quarterly*, *10*, 203-220.

Dubin, S. T. (1990). Maintaining competence through updating. In S. Willis & S. Dubin (Eds.), *Maintaining professional competence* (pp. 9-43). San Francisco: Jossey-Bass.

Dweck, C. (1989). Motivation. In A. Lesgold & R. Glaser (Eds.), *Foundations for a psychology of education*. Hillsdale, NJ: Lawrence Erlbaum.

Dweck, C., Chiu, C., & Hong, Y. (1995). Implicit theories and their role in judgments and reactions: A world from two perspectives. *Psychological Inquiry*, *6*, 267-285.

Dweck, C., Hong, Y., & Chiu, C. (1993). Implicit theories: Individual differences in the likelihood and meaning of dispositional inference. *Personality and Social Psychology Bulletin*, *19*, 644-656.

Dweck, C., & Leggett, E. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*, 256-273.

Farr, J. L., & Middlebrooks, C. L. (1990). Enhancing motivation to participate in professional development. In S. Willis & S. Dubin (Eds.), *Maintaining professional competence* (pp. 195-213). San Francisco: Jossey-Bass.

Fazio, R. (1989). On the power and functionality of attitudes: The role of attitude accessibility. In A. Pratkanis, S. Breckler, & A. Greenwald (Eds.), *Attitude structure and function* (pp. 153-179). Hillsdale, NJ: Lawrence Erlbaum.

Fazio, R. H., & Zanna, M. P. (1981). Direct experience and attitude-behavior consistency. *Advances in Experimental Social Psychology*, *14*, 161-201.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Fishbein, M., & Ajzen, I. (1981). Acceptance, yielding, and impact: Cognitive processes in persuasion. In R. Petty, T. Ostrom, & T. Brock. (Eds.), *Cognitive responses in persuasion*. Reading, MA: Addison-Wesley.

Fishbein, M., & Stasson, M. (1990). The role of desires, self-predictions, and perceived control in the prediction of training session attendance. *Journal of Applied Social Psychology*, *20*, 173-198.

Fiske, S., & Taylor, S. (1991). *Social cognition* (2nd ed.). New York: McGraw-Hill.

Fiske, S. T., & Kinder, D. R. (1981). Involvement, expertise, and schema use: Evidence from political cognition. In N. Cantor & J. Kihlstrom (Eds.), *Personality, cognition, and social interaction*. Hillsdale, NJ: Lawrence Erlbaum.

Fossum, J., Arvey, R., Paradise, C., & Robbins, N. (1986). Modeling the skills obsolescence process: A psychological/economic integration. *Academy of Management Review*, *11*, 362-374.

Gist, M. (1987). Self-efficacy: Implications for organizational behavior and human resource management. *Academy of Management Review*, *12*, 472-485.

Gist, M., & Mitchell, T. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review*, *17*, 183-211.

Goldstein, I. (1993). *Training in organizations* (3rd ed.). Pacific Grove, CA: Brooks/Cole.

Greenhaus, J. (1987). *Career management*. Hinsdale, IL: Dryden.

Greenhaus, J. (1988). Career exploration. In M. London & E. Mone (Eds.), *Career growth and human resource strategies* (pp. 17-30). New York: Quorum.

Hackman, J., & Oldham, G. (1976). Motivation through the design of work: A test of a theory. *Organizational Behavior and Human Performance*, *16*, 250-279.

Hackman, J., & Wageman, R. (1995). Total quality management: Empirical, conceptual, and practical issues. *Administrative Science Quarterly*, *40*, 309-342.

Hackman, J. R. (1992). Group influences on individuals in organizations. In M. Dunnette & L. Hough (Eds.), *Handbook of industrial and organizational psychology* (Vol. 3, pp. 199-267). Palo Alto, CA: Consulting Psychologists Press.

Hayes, B. E. (1993, April). *The measurement and meaning of work social support*. Paper presented at the annual conference of the Society for Industrial and Organizational Psychology, San Francisco.

Hazucha, J., Hezlett, S., & Schneider, R. (1993). The impact of 360-degree feedback on management skills development. *Human Resource Management*, *32*, 325-352.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: John Wiley.

Hicks, W., & Klimoski, R. (1987). Entry into training programs and its effects on training outcomes: A field experiment. *Academy of Management Journal*, *30*, 542-552.

Higgins, E., & King, G. (1981). Accessibility of social constructs: Information processing consequences of individual and contextual variability. In N. Cantor & J. Kihlstrom (Eds.), *Personality, cognition, and social interaction* (pp. 69-121). Hillsdale, NJ: Lawrence Erlbaum.

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychology Review*, *94*, 319-340.

Higgins, E. T. (1989). Continuities and discontinuities in self-regulatory and self-evaluative processes: A developmental theory relating self and affect. *Journal of Personality*, *57*, 407-444.

Holland, J. (1985). *Making vocational choices: A theory of vocational personalities and work environments*. Englewood Cliffs, NJ: Prentice Hall.

Jagacinski, C. (1992). The effects of task involvement and ego involvement on achievement-related cognitions and behaviors. In D. Schunk & J. Meece (Eds.), *Student perceptions in the classroom: Causes and consequences*. Hillsdale, NJ: Lawrence Erlbaum.

Kaufman, H. G. (1973). A critical incident study of personal characteristics associated with technical obsolescence among engineers. *Studies in Personnel Psychology*, *5*, 63-67.

Kaufman, H. G. (1989). Obsolescence of technical professionals: A measure and a model. *Applied Psychology: An International Review*, *38*, 73-85.

Kelly, G. (1955). *The psychology of personal constructs*. New York: Norton.

Kozlowski, S., & Farr, J. (1988). An integrative model of updating and performance. *Human Performance*, *1*, 5-29.

Kozlowski, S., & Hults, B. (1987). An exploration of climates for technical updating and performance. *Personnel Psychology*, *40*, 539-563.

Kraiger, K., Ford, J., & Salas, E. (1993). Application of cognitive, skill-based, and affective theories of learning outcomes to new methods of training evaluation, *Journal of Applied Psychology*, *78*, 311-308.

Kram, K. (1988). *Mentoring at work: Developmental relationships in organizational life*. Glenview, IL: Scott, Foresman.

Kram, K., & Isabella, L. (1985). Mentoring alternatives: The role of peer relationships in career development. *Academy of Management Journal*, *28*, 110-132.

Leibowitz, Z., & Schlossberg, N. (1981, July). Training managers for their role in a career development system. *Training and Development Journal*, pp. 72-79.

London, M. (1983). Toward a theory of career motivation. *Academy of Management Review*, *8*, 620-630.

London, M. (1989). *Managing the training enterprise*. San Francisco: Jossey-Bass.

London, M. (1991). Career development. In K. Wexley & J. Hinrichs (Eds.), *Developing human resources* (pp. 152-184). Washington, DC: Bureau of National Affairs.

London, M. (1993). Relationships between career motivation, empowerment and support for career development. *Journal of Occupational and Organizational Psychology*, *66*, 55-69.

Markus, H. (1977). Self-schemas and processing information about the self. *Journal of Personality and Social Psychology*, *35*, 63-78.

Markus, H. (1983). Self-knowledge: An expanded view. *Journal of Personality*, *51*, 543-565.

Markus, H., & Cross, S. (1990). The interpersonal self. In L. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 135-164). New York: Guilford.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41*, 954-969.

Martocchio, J. (1994). The effects of conceptions of ability on anxiety, self-efficacy, and learning in training. *Journal of Applied Psychology*, *79*, 819-825.

Masterson, S., & Taylor, S. (1996). Total quality management and performance appraisal: An integrative perspective. *Journal of Quality Management*, *1*, 67-90.

Maurer, T. (2001). Career-relevant learning and development, worker age, and beliefs about self-efficacy for development. *Journal of Management*, *27*, 123-140.

Maurer, T., Mitchell, D., & Barbeite, F. (in press). Predictors of attitudes toward a 360-degree feedback system and involvement in post-feedback management development activity. *Journal of Occupational and Organizational Psychology*.

Maurer, T., & Rafuse, N. (2001). Managing employee development and avoiding age discrimination. *Academy of Management Executive*, *15*(4).

Maurer, T., & Tarulli, B. (1994). Perceived environment, perceived outcome, and person variables in relationship to voluntary development activity by employees. *Journal of Applied Psychology*, *79*, 3-14.

Maurer, T., & Tarulli, B. (1996). Acceptance of peer/upward performance appraisal systems: Role of work context factors and beliefs about managers' development capability. *Human Resource Management Journal*, *35*, 217-241.

Maurer, T., & Tarulli, B. (1997). Managerial work, job analysis, and Holland's "RIASEC" vocational environment dimensions. *Journal of Vocational Behavior*, *50*, 365-381.

Maurer, T. J., & Palmer, J. K. (1999). Management development intentions following feedback: Role of perceived outcomes, social pressures, and control. *Journal of Management Development*, *18*, 733-751.

McCauley, C. D., Ruderman, M. N., Ohlott, P. J., & Morrow, J. E. (1994). Assessing the developmental components of managerial jobs. *Journal of Applied Psychology*, *79*, 544-560.

McCauley, C. D., & Young, D. P. (1993). Creating developmental relationships: Role and strategies. *Human Resource Management Review*, *3*, 219-230.

Mone, E. (1988). Training managers to be developers. In M. London & E. Mone (Eds.), *Career growth and human resource strategies* (pp. 207-222). New York: Quorum.

Mossholder, K., & Bedeian, A. (1983). Cross-level inference and organizational research: Perspective on interpretation and application. *Academy of Management Review*, *8*, 547-558.

Muchinsky, P. (1993). *Psychology applied to work*. Pacific Grove, CA: Brooks/Cole.

Nicholls, J. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, *91*, 328-346.

Noe, R. (1986). Trainee's attributes and attitudes: Neglected influences on training effectiveness. *Academy of Management Review*, *11*, 736-749.

Noe, R., Noe, A., Bachhuber, J. (1990). An investigation of the correlates of career motivation. *Journal of Vocational Behavior*, *37*, 340-356.

Noe, R., & Wilk, S. (1993). Investigation of factors that influence employees' participation in development activities. *Journal of Applied Psychology*, *78*, 291-302.

Noe, R. A., Wilk, S. L., & Gorski, J. (1994, April). *Can do, will do, have to: The effects of ability, motivation and obligation on participation in development activities*. Paper presented at the annual conference of the Society for Industrial and Organizational Psychology, Nashville, TN.

Noe, R. A., Wilk, S. L., Mullen, E. J., & Wanek, J. E. (1997). Employee development: Issues in construct definition and investigation of antecedents. In J. K. Ford, S. Kozlowski, K. Kraiger, E. Salas, & M. Teachout (Eds.), *Improving training effectiveness in work organizations* (pp. 153-188). Hillsdale, NJ: Lawrence Erlbaum.

Nordhaug, O. (1989). Reward functions of personnel training. *Human Relations*, *42*, 373-388.

Oyserman, D., & Markus, H. (1990). Possible selves and delinquency. *Journal of Personality and Social Psychology*, *59*, 112-125.

Rosow, J., & Zager, R. (1988). *Training-the competitive edge*. San Francisco: Jossey-Bass.

Senge, P. M. (1990). *The fifth discipline*. New York: Doubleday.

Stumpf, S., Colarelli, S., & Hartman, K. (1983). Development of the career exploration survey, *Journal of Vocational Psychology*, *22*, 191-226.

Tharenou, P., Latimer, S., & Conroy, D. (1994). How do you make it to the top? An examination of influences on women's and men's managerial advancement. *Academy of Management Journal*, *37*, 899-931.

Tracey, J. B., Tannenbaum, S. I., & Kavanaugh, M. J. (1995). Applying trained skills on the job: The importance of the work environment. *Journal of Applied Psychology*, *80*, 239-252.

Triandis, H. (1994). Cross-cultural industrial and organizational psychology. In M. Dunnette & L. Hough (Eds.), *Handbook of Industrial and Organizational Psychology* (pp. 103-172). Palo Alto, CA: Consulting Psychologists Press.

Wood, R., & Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanisms and complex decision making. *Journal of Personality and Social Psychology*, *56*, 407-415.

Wurf, E., & Markus, H. (1991). Possible selves and the psychology of personal growth. *Perspectives in Personality*, *3*, 39-62.

Todd J. Maurer's work addresses employee and leadership development, aging workers, performance appraisal and feedback, and employee selection. As a researcher or private consultant, he has worked with several public- and private-sector organizations on projects dealing with these issues, and he has also conducted research funded by the National Institutes of Health and the National Science Foundation. Dr. Maurer is on the editorial boards of the Journal of Management and Personnel Psychology. *He has a Ph.D. in industrial-organizational psychology.*