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Behavior, Performance, and Effectiveness – In the 21st Century

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Abstract

Sometime during the 1980's Industrial and organizational Psychology stopped merely complaining about the "criterion problem" and began thinking about occupational or work role performance as a construct that could be substantively modeled. Subsequently, there has been considerable theory and research dealing with the substantive latent structure of performance, performance dynamics, and performance measurement issues. This chapter reviewers these developments and argue that despite differences in terminology and points of emphasis, there is virtually complete convergence concerning the principal components of job performance. The convergent picture is described, along with its implication for theory and research in I/O Psychology. Finally, and somewhat unexpectedly, it is argued that at a particular level of generality/specificity the substantive structure of individual work performance is invariant, regardless of occupation, organizational level, situational context, or performance dynamics.

Keywords: Models of work performance, leadership performance, management performance, performance adaptability, performance dynamics.

In spite of its title this chapter is not meant to be a retrospective of *Managerial Behavior, Performance, and Effectiveness* (Campbell, Dunnette, Lawler, & Weick, 1970). The objectives, slightly paraphrased, of the project on which the book was based were to: (a) survey and summarize all published *and* unpublished literature (broadly defined) pertaining to the identification, development, support, and assessment of managerial effectiveness; (b) develop a framework/model for managerial effectiveness and its determinants that would serve to organize the available information in a meaningful way, identify the critical variables, and review both the strengths and the weaknesses of the research record; and (c) compare the prescriptions for the identification, development, and nurturance of managerial talent with prevailing HR practices.

Could this same approach be used again? In a word, no. Thankfully, there has been a virtual explosion in the scope and complexity of the *independent* variable landscape, and the models/theories used to represent particular parts of it. Consequently, the Campbell et al. (1970) modus operandi won't work and its function must be replaced by handbooks such as this one; and even very large handbooks must struggle to represent the landscape.

The objective of this chapter is to revisit the dependent variable side and to consider again the implications of the distinctions among behavior, performance, and effectiveness for research and practice. Much has happened since 1970 and the degree to which there is a consensus on how behavior, performance, and effectiveness should be represented (i.e., modeled) and assessed will be reviewed in some detail. But first the context.

The Context of I/O Psychology

The context of I/O Psychology is multifaceted, and this complexity is both a strength and a source of some conflict. However, when building theory, conducting research, developing applications, or practicing what we know how to do, it is important to recognize the assumptions

we are making about the context in which we are working. The way the context is framed can have a significant influence on how questions are asked, how data are interpreted, and how applications are designed. It is particularly important when talking about "performance" and "effectiveness," words which sometimes take on Rorschach like properties.

The contextual issues that deserve attention are at least the following.

1. Should the substantive domain of I/O Psychology be defined broadly or narrowly? If what concerns us is behavior in organizations, should it be individual behavior, group (e.g., team) behavior, or the "behavior" of some larger unit? Are the organizations of interest limited to those that employ adults, or can they be educational, social, or volunteer organizations? Can there be "organizations" of N = 1 (as in the self-employed plumber)? The perspective taken here is that of the individual and/or the team within an organization when the organization is construed as broadly as possible.
2. Toward what goals should the work of I/O Psychology be directed? Should it be the goals of the organization, be it profit or nonprofit, public or private? That is, should the managements' goals be our goals? Or should it be toward the goals of the individual, as in achieving overall well being, career success, job satisfaction, or employment itself? Or should our goal simply be the advancement of the science of behavior in organizations, with no thought of application? All are legitimate. However, choices among such goals are value judgments and they have a lot to do with how the resources of I/O Psychology are invested.

3. When conducting research must all research questions be overtly "theory driven," or can specific questions, in the context of discovery (Reichenbach, 1938), be every bit as legitimate, so long as answering the questions advances the field, even if they are not overtly derived from theory? The position here is that theory should be a facilitator, not a constraint.

The Dependent Variable

As one learns when first studying the scientific method in middle school, the dependent variable is the variable of real interest. It is the property that we want to predict, change, or explain. It is not a means to an end, it is the end. The dependent variable must be valued for its own sake. In contrast, independent variables have no extrinsic or intrinsic value, except as they are able to account for variance in the dependent variable. For example, the measurement of general mental ability, personality, priming effects, or cognitive expectancies have no value, except as they are able to account for variance in one or more important dependant variables. However, it is also true that today's dependent variables could be tomorrow's independent variable. We could value college GPA as an end in itself, or we could exploit college GPA as a predictor of occupational performance. A counter argument is that college GPA is *never* an end in itself, its only value is in what it can predict.

The above paragraph may sound sophomoric, but the IV/DV distinction is frequently lost in the literature and the potential impact of a particular kind of research, be it goal setting or competency modeling, is not perfectly clear. However, it does beg the question of just what are our dependent variables anyway. Answering the question depends on some value judgments and these have to do with basic versus applied research, science versus practice, and the individual versus institutional (i.e., organizational) point of view.

For purposes of this chapter the most important of these value judgments is the individual versus organizational distinction, which Cronbach and Gleser (1965) viewed as being of fundamental importance when modeling the utility of personnel decision making. Simply put, what dependent variables studied by I/O Psychology are important for the goals of the organization and its management, and which are important for the goals of the individual. Consider the following lists.

From the Organization Point of View

- Individual performance in a work role
- Voluntary turnover
- Team performance
- Team viability
- Organizational unit effectiveness
- Productivity (in the economist's sense) of:
  - Individuals
  - Teams
  - Organizational units

From the Individual Point of View

- Career/occupational achievement
- Satisfaction with the outcomes of working (which could include satisfaction with performance achievement)
- Fair Treatment
- Overall health and well being

These two lists carry at least the following assumptions and/or qualifications.

1) Organizations are not concerned about job satisfaction or subjective well being as dependent variables, but only as independent variables that have implications for performance, productivity, effectiveness, or turnover.
2) Information pertaining to the determinants of performance may be used in a selection system, to benefit the organization; or in a career guidance system to benefit the individual (e.g., using ability, personality, and interest assessment to plan educational or job search activities.) Similarly, training programs that produce higher skill levels, can enhance individual performance for the benefit of the organization or enhance career options for individuals.
3) Fair and equitable treatment of individual employees *may* be an important dependent variable for the organization if it is incorporated as a goal in the organization's ethical code or in a policy statement of corporate social responsibility for which the management is then held responsible.

For the most part, I/O Psychology does not operate from the individual point of view, even though a number of its early pioneers did, such as Donald Paterson or Walter van Dyke Bingham (cf., Koppes, Thayer, Vinchur, & Salas, 2007). At some point vocational psychology (i.e., the individual point of view) became part of counseling psychology (Campbell, 2007; Meyer, 2007). The concern in this chapter is individual performance, and primarily from the organizational point of view, broadly interpreted.

Individual Performance

From the organizational point of view, individual performance in the work setting is our dominant dependent variable. As many have noted, in spite of its criticality, there was almost no treatment of performance as a construct in its own right before the mid to late 1980's. There was

simply the "criterion problem" (Austin & Villanova, 1992; Campbell, 1991a, and investigators searched for specific measures that might be judged as "good" measures of performance, and perhaps defined as an indicator of an individual's overall contribution to the organization. Virtually all the theory and research attention was on the independent variables (e.g., individual abilities, skills, and motivation).

Much has changed in the last 25 years. There is now a bona fide theory and research literature on performance as a construct; and an integrated description of current views follows in the next section. However, the influence of this literature on I/O psychology research has been depressingly small. When investigating the influence of various domains of independent variables on performance, researchers do not generally locate the measures of performance within a broader *substantive* picture. Perhaps the prime offenders are meta-analyses that average correlations between well known predictor variables and a multitude of unspecified "criterion" measures that are lumped in a category labeled as performance measures. It is difficult to know what the meta-analytically estimated mean correlation represents under these circumstances. Consider the current chapter as an attempt to "try again."

A Definition of Performance

There seem to have been no major disagreements with Campbell et al. (1970) specifications for behavior, performance and effectiveness, although there have been extensive elaborations. That is, individuals enter the work setting and they do things. Some, hopefully a lot, of the things they do are directed toward the achievement of organizational goals. These actions must be at least potentially observable. For example, sometimes it takes a great deal of covert thinking before the individual does something. Performance is the action, not the thinking that preceded the action. This has nothing to do with the cognitive psychology versus behaviorism

debate. That debate focuses on what controls the actions. Some say it's our reinforcement histories, some say it's our cognition. However someone must identify those actions that are relevant for the organization's goals and those which are not. For those that are (i.e., performance), the level of proficiency with which the individual performs them must be scaled. Both the judgment of relevance and the judgment of level of proficiency depend on a specification of the important *substantive* goals of the organization, not content-free goals such as "make a profit."

Nothing in this definition requires that a set of performance actions be circumscribed by the term "job" or that they remain "static" over a significant length of time. Neither does it require the goals of an organization remain fixed, or that a particular management cadre is responsible for determining the organization's goals (aka "vision"). Neither does it say actions, or goals must be described at a certain level of specificity. However, for performance assessment to take place, the major operative goals of the organization, within some meaningful time frame, must be known; and the methods by which individual actions are judged to be goal relevant, and scaled in terms of what represents high and low proficiency, must be legitimized. Consequently, it is not a violation of this definition of performance for individual organization members to decide themselves what actions are most relevant for what they think the goals of the organization are, or should be. That is, they can be quite active (Frese, 2008), or proactive (Griffen, Neal, & Parker, 2007) in this regard. However, these goal choices, and decisions about what actions best serve them, must be legitimized by the stakeholders empowered to do so by the organization's charter. Otherwise, there is no organization. Perhaps the indictment of "conventional" job analysis (e.g., see Pearlman & Sanchez, 2010) should be that it does not validly reflect current and future goals and does not consider the most relevant set of actions that

could serve those goals, when it uses "job analysts" to make importance judgments about a job's performance requirements, because job analysts are too unknowledgeable about the organization's goals.

The distinction between performance, as defined above, and effectiveness (aka: organizational outcomes, the bottom line, organizational goal achievement) is that effectiveness is not solely determined by the performance of a particular individual even if that individual is one of the organization's critical "leaders." For example, effectiveness indicators, judged to be valid measures of a unit's effectiveness, such as sales volume, number of windows installed in new housing, number of on-time arrivals along a bus route, dollar value of research grants, or standardized test scores of middle school students are not solely a function of the individual performance of the salesperson, carpenter, bus driver, researcher, or public school teacher. If these indicators represent the goals of the organization then individual performance should certainly be related to them (if not, the specifications for individual performance are wrong and need changing, or conversely the organization is pursuing the wrong goals). However, by definition, effectiveness indicators have other determinants as well, for which the individual should not be held responsible. If the variability in an effectiveness indicator is *totally* under the control of the individual then it <u>is</u> a measure of performance.

Similar definitions apply to team performance, but team performance is not a simple aggregation of the individual performance of team members. Virtually by definition team performance requires some form of collective *interdependent* actions on the part of the team members (Kozlowski & Ilgen, 2006). However, the analogous distinction between team performance and team effectiveness is a real one, if variance in measures of team effectiveness is

determined by sources (e.g., resource availability) not under the control of the team itself (see Mathieu, Maynard, Rapp, & Gilson, 2008).

Modeling Performance

Since the mid-1980's there have been several efforts to specify the "dimensionality" of performance, in the context of the latent structure of the actions required by a particular, occupation, job, position or work role (see Borman & Brush, 1993; Borman & Motowidlo, 1993; Campbell, McCloy, Oppler, & Sager, 1993; Griffen et al., 2007; Murphy, 1989; Organ, 1988; Yukl, Gordon, & Taber, 2002). These have become known as performance models and they seem to offer differing specifications for what constitutes the nature of performance as a construct. However the argument here is that there is virtually total correspondence. To support this assertion, a brief synopsis of each is presented first, followed by a discussion of why they might seem different, but aren't. All of this leads to assembling a composite picture of performance dimensionality that *could* be used for identifying appropriate dependent variables for specific research or HR management purposes, *and* to code research results for archival storage (i.e., to be used in meta-analyses).

Some Issues

Proceeding along this path raises some important issues. First, proposing models of performance seems quite normative. That is, they seem to stipulate that performance in any job or work role of the moment is composed of the same set of components, or dimensions. How can that be if performance is characterized as a set of actions relevant for a particular organization's goals? Doesn't that make the substantive content of performance unique to a particular time and place? The only legitimate answer must be that at a particular level of specificity/generality, research has shown that particular sets of actions (e.g., refraining from substance abuse, showing

consideration for co-workers, setting goals with subordinates) contribute to goal accomplishment in virtually any organization. The story is not quite the same for what is called the "technical performance" factor in each of the models, but more about that later.

A second issue arises because there are really two different kinds of performance models in the literature. The first kind specifies performance as a set of *substantive* content factors (e.g., flying an airplane, delegating responsibilities to subordinates) and the second focuses on sets of cognitive/behavioral processes, such as "active" performance (Frese, 2008), or performance "adaptability" (Pukalos, Arad, Donovan, & Plamondon, 2000). Although not always perfectly clear, there are major distinctions to be made between these two kinds of models. It is argued below that they are complementary and not competing renditions.

A third issue is whether or not the models are, or should be, hierarchical in nature (i.e., performance components are identified at more than one level of specificity. That is, can major factors be decomposed into subfactors; and if they are, are the different levels fully nested? The argument below is that yes they are hierarchical; and are fully nested, even after different models are aggregated into a composite.

As might be anticipated, the aggregation process will start with brief discussion of the individual models, Campbell et al. (1993) first.

The Campbell et al. Model

This model posits eight major substantive factors at the highest level of generality that seems useful. That is, each factor describes a specifiable content domain of goal relevant actions such that aggregating them into a smaller number of higher order factors would tend toward adding apples and oranges. The eight factors are briefly characterized in Table 1.

Insert Table 1 about here

The argument for eight factors was not made solely on the basis of the observed or forecasted intercorrelation matrix of scores on measures of the factors, although the available data indicate the "corrected" (for attenuation and method variance) estimates of the factor intercorrelations to be considerably less than 1.0 (Campbell & Knapp, 2001; Sager, 1990; Viswesvaran, Schmidt, & Ones, 2005). It is also based on the judged appropriateness of describing each of the eight factors as a *construct*. There is a distinction to be made between composite scores that are simply aggregations of scores on different constructs and scores that do represent a definable construct. And, as Podsakoff, MacKenzie, Podsakoff, & Lee (2003) point out, they require different latent models. By this same reasoning, while a criterion intercorrelation matrix will usually yield a general factor, due to common determinants (e.g., GMA) or method variance, the notion of overall performance has no substantive meaning as a construct. Performance is not one thing. If it is, no one as yet has been able to provide a substantive description of what it is without simply appealing to the aggregation of scores across different factors. Now, this does not rule out the possibility that individual "raters" might base their "overall" performance assessments on their personal combination of several latent factors, or primarily on the basis of one factor, and not tell anybody, or even be aware of what they were doing when they make such a rating.

The identification of the factors in Table 1 came from two primary sources. The first was simply the extant literature, as it existed in the late 1980's. For example, the much maligned two factors of leadership and supervisory behavior, consideration and initiating structure, are very

robust and appeared in study after study (Bass, 1990). Also, there is a frequently appearing structure for the functions of management (Borman & Brush, 1993; Yukl, 2010), and both leadership and management functions are ascribed to peers in certain kinds of work teams such that it is possible to make a distinction between peer leadership and supervisory leadership, when the subfactors within each are similar (Hiller, Day, & Vance, 2006).

The second major influence was the work on modeling individual performance conducted as part of Project A (Campbell & Knapp, 2001). In Project A, two cohorts of 10,000 Army enlisted personnel separated by three years and distributed over a wide range of skilled, but entry level, jobs were assessed on multiple indicators of individual performance. Each cohort was assessed after approximately three years on their first job (Military Occupational Specialty – MOS in Army parlance), and then a second time approximately four years later, after reenlisting and beginning to take on leadership/supervisory responsibilities. The multiple performance indicators were reduced, via subject matter expert (SME) judgment and a series of correlational analyses, to a set of 24 basic performance scores, varying in both content and method, which were then subjected to a series of confirmatory factor analyses. That is, alternative substantive factor models of the latent structure of the 24 scores were proposed and evaluated for best fit in each of the two cohorts at each of the two points in time. The conceptual generation of alternative models was done independently for each of the four performance data sets. The clear winners were a five-factor model of entry level performance and a six-factor model of leader/supervisory performance (see Campbell & Knapp, 2001, for details). Within organizational level the best fitting models in each of the two cohorts were identical. Further, when the model identified in one cohort was subjected to confirmatory analysis in the other, the fit was also identical. The lawfulness of these data had an influence on the specifications for the

Campbell et al. (1993) model. All but one of the Project A factors, Military Presence and Bearing, which was unique to the Army, appear in some form in Table 1.

In retrospect, the distinction between factor one and factor two, which was also generated by the Project A data, is a bit too military-centric. That is, there is a large category of technical performance actions (e.g., first aid) that every uniformed individual must be able to do, in addition to the technical side of their specialty. This dichotomy may not appear in many occupations, although it certainly does in education (i.e., research versus teaching). Also, the use of the work "task" as if it was synonymous with the technical components of performance was ill-advised. Task is simply a unit of description, and could be used as the unit of description in any of the factors.

The Demonstrating Effort factor, depending on how it is framed, also might be problematic. Effort underlies performance on all factors and in that sense is a determinant of individual differences in performance, not an independent performance action. However, this factor was intended to represent observable actions that are independent of performance on the other factors, such as putting in more time, and continuing under different kinds of adverse conditions (e.g., extensive traveling). Defined in this way, the factor repeatedly emerged from critical incident data collections in Project A; and, as detailed below, it also appears in various forms as an Organizational Citizenship factor (Organ, 1988) and as a Contextual Performance factor in the Borman and Motowidlo (1997) model.

Again, Table 1 represents a substantive content model. It does not preclude performance dynamics. Such dynamics must surely occur. It does not preclude changes in the sample of behaviors or actions comprising each factor, or changes in the level of difficulty of the

performance requirements. It only requires that the required actions in each factor be sampled from the same construct *domain*.

Viewed from this model, individual differences in performance itself are a function of two sets of determinants: (1) direct, and (2) indirect.

1. The direct determinants are *current* job related knowledge and skill, and three volitional choices (euphemistically referred to as "motivation") corresponding to the traditional (a) choice to perform, or choice to expend effort, (b) the amplitude or level of effort to which the individual commits, and (c) the persistence, over time, of that level of effort expenditure. The direct determinants operate in real time, or "on the job," so to speak. The knowledge and skill versus volitional choice distinction is similar to the resource level versus resource allocation distinction discussed by Beal, Weiss, Barros, & MacDermid (2005). Variance in performance can also be accounted for by their interactions. For example, being highly knowledgeable about a particular job requirement could increase the probability of choosing to do it and investing effort in it.
2. Indirect determinants are all the things that produce individual differences in the direct determinants (e.g., IQ, personality, training, goal setting, reward preferences, self efficacy, etc.). They can influence performance only by influencing the direct determinants. That is, the direct determinants totally mediate the effects of the indirect determinants. The available path model studies support this assertion (Borman, White, & Dorsey, 1995; Borman, White, Pulakos, & Oppler, 1991; Hunter, 1983; Lance & Bennett, 2000; Schmidt & Hunter, 1992).

The model also distinguishes determinants of individual differences in performance from influences on the mean of performance, for a specific sample of individuals. For example, one of the most important influences on the performance mean these days, at least in the *opinion* of many people, is technology. Technology only becomes a determinant of individual differences in performance if we assess the individual differences in how well people have learned to use the technology. Then it becomes part of Factor one. The same would be true for any intervention, constraint, or situational factor that is intended to influence the mean.

Individual differences in performance can also be a function of the interactions among individual determinants, or between individual differences and features of the intervention, constraint, or situation. For example, while a particular constraint (time limits) could lower the mean, higher ability people could compensate more effectively.

The above specifications are presented in the context of the variance *between* individuals. It also can portray the substantive content and the determinants to performance differences across time *within* individuals. The relative importance of skill level versus choice behavior may be different for the between versus within, although changes in skill level could occur quickly for an individual.

Core, Contextual, Prosocial, and Organizational Citizenship Performance

Since 1990, considerable conceptual and research activity has been focused on the Borman and Motowidlo (1993, 1997) distinction of core technical versus contextual performance and on categories of performance behaviors referred to as Organizational Citizenship (Organ, 1988; Smith, Organ, & Near, 1983). Both are examples of substantive models of performance; and, in terms of the behaviors that make up their content, there is considerable, if not complete, overlap. Probably the most comprehensive discussions of the similarities and differences are in

the papers comprising a special issue of the *Human Resource Management Review* (Spring, 2000): and in a comprehensive review of research on OCB by Podsakoff et al. (2000), which summarizes research on the dimensionality of OCB, the determinants of individual differences in performance on OCB dimensions, and the relationship of the OCB dimensions to indicators of unit/organizational effectiveness.

Technical Core and Contextual Performance

As described by Borman and Motowidlo (1997), individual performance is comprised of two major factors.

1. *Core Technical Task Performance* is defined as, …"activities that contribute to the organization's technical core either directly by implementing a part of its technological process, or indirectly by providing it with needed materials or services. Examples of task performance dimensions for a sales job might include, Product Knowledge, Closing the Sale, and Organization and Time Management. For a firefighter job, Performing Rescue Operations, Conducting Salvage Operations, and Applying Ventilation Procedures are good examples of task dimensions" (pp. 99-100).

   This definition is not without its ambiguities. Is a technical core synonymous with a product or service? Is there more than one? Are there nontechnical cores (e.g., providing a particular community service)? Also, for the sales example, do product knowledge and time management constitute performance itself or are they determinants of individual differences in performance? These ambiguities notwithstanding, the Borman and Motowidlo (1997) core

technical performance factor is very similar to the substantive technical factor that appears in other models.

2. *Contextual Performance* consists of activities that, "contribute to organizational effectiveness in ways that shape the organizational, social, and psychological context that serves as a catalyst for task activities and processes. Contextual activities include volunteering to carryout task activities that are not formally part of the job and helping and cooperating with others in the organization to get tasks accomplished" (p. 100). As noted by Organ (1997), this definition contains language with considerable surplus meaning (i.e., *shape* the organizational, social, and psychological *contexts* that *serve* as catalysts for task activities and processes). Their 1997 taxonomy of contextual performance subfactors helps reduce much of the ambiguity. The five subfactors described there are as follows.
    1) Persisting with enthusiasm and extra effort as necessary to complete ones task activities successfully.
    2) Volunteering to carry out activities that are not formally part of ones job.
    3) Helping and cooperating with others, including co-workers, customers (in some jobs).
    4) Following organizational rules and procedures.
    5) Endorsing, supporting, and defending organizational objectives.

The five factor taxonomy is also intended to subsume the performance factors discussed by Smith et al. (1983) and Organ (1988, 1997) under the rubric of organizational citizenship

behavior (OCB), which refers to performance behaviors that are relevant for the organization's goals but are not required by the prevailing job description. The original OCB measure (Smith et al., 1983) contained 16 items which yielded two factors when used in a hypothetical rating task. The first factor, labeled altruism, contained items dealing with helping others, which may in fact be voluntary in most organizations. The second factor, labeled compliance, contained items (e.g., punctuality, taking too many breaks, giving advance notice of absences) which *are* requirements in most job settings. Organ (1988) subsequently added the factors labeled: Civic Virtue (responsible involvement in the governance of the organization); Organizational Courtesy (showing respect for others); and Sportsmanship (tolerating less than desirable organizational conditions for the good of the enterprise). The compliance factor was subsequently relabeled as Conscientiousness. Podsakoff and his colleagues (e.g., Podsakoff & MacKenzie, 1994), developed scales to assess the five OCB dimensions and they have been used in considerable empirical research, meta-analyses of which have been reported by Hoffman, Blair, Meriac, and Woehr (2007), LePine, Erez, and Johnson (2002), Organ and Ryan (1995), Podsakoff and MacKenzie (1997), and Podsakoff, MacKenzie, Paine, and Bachrach (2000). Given the method variance that must be accounted for when ratings are the principal measurement method, the pattern of results is familiar. The relatively high intercorrelations among factor scores yield both a general factor as well as evidence for distinctiveness among the dimensions.

Conway (1999) found similar results for the factors commonly subsumed under contextual performance, as well as some evidence for the distinctiveness of the two higher order factors, Task vs. Contextual performance as conceptualized by Borman and Motowidlo (1997). However, as Hoffman et al. (2007) point out, the assessment of contextual performance has not been as consistently grounded in the same set of measures as it has for OCB.

As seems so often to be the case in I/O Psychology, investigators must put their own stamp on things and the number of variations in the OCB dimensions grew. In their review of the OCB literature, Podsakoff et al. (2000) counted "almost 30" different variables describing OCB. Because many of the variations in substantive content seemed small, or investigators simply used different words for the same thing, Podsakoff et al. (2000) identified seven common themes or dimensions that seemed to represent all the individual scales that had been used.

1) *Helping Behavior*, which seems to combine the dimensions of altruism and courtesy and is directed at coworkers, subordinates, supervisors/managers or clients/customers.
2) *Sportsmanship*, generally as defined by Organ (1988).
3) *Organizational Loyalty*, that part of Civic Virtue related to identifying with the organizations goals and management, and promoting and defending the organization to outsiders.
4) *Organizational Compliance*, with regard to organizational policies, regulations, norms, and work rules.
5) *Individual Initiative*, or going well beyond minimal requirements for adherence to rules and policies, taking on additional tasks and responsibilities, and commitments of time and resources.
6) *Civic Virtue*, participating actively in organizational governance, administration, and policy making—from reading one's mail, to attending nonrequired meetings, to offering views on policies and problems.
7) *Self Development*, which refers to voluntary behaviors intended to improve one's own knowledge, skill, and performance capabilities. As noted by

> Podsakoff et al. (2000), given the common distinction between performance and its determinants, this dimension is better describes as a determinant of performance and not performance itself. Consequently, it falls outside the definition of OCB.

Whether the content and dimensional structure of Contextual performance and Organizational Citizenship Behavior/Performance are the same or different is discussed at some length by Motowidlo (2000) and Organ (1997), and the conclusions seemed to be there are no substantive differences between the content of Contextual Performance and Citizenship Performance, with the possible exception of Civic Virtue. However, even though the idea for a dimension labeled Civic Virtue came from political philosophy applied to organizational behavior (Graham, 2000), the content of the dimensions could just as well have come from the participation in decision making literature (Vroom & Jago, 1988). Consequently, Civic Virtue might just as well be viewed as individual participation in certain management functions. Whether participation is "granted" by higher management or seized by the participants themselves, and, whether the goals being served are the organization's or the individual's, are different issues.

As noted by Organ, cited in Motowidlo (2000), perhaps the only difference between contextual and citizenship performance is that the former is "cold, gray, and bloodless" compared to the latter. That is, to paraphrase, the OCB labels have more emotional and exciting connotations. The synthesis of all existing models found later in this chapter will seem even colder, but then its origins are in the far North.

Prosocial Behavior

Prosocial behavior as a category of performance actions was introduced to the I/O psychology literature by Brief and Motowidlo (1986) where it was defined as behavior directed toward individuals, groups, or organizations with whom the individual interacts, and which is intended to promote the welfare of the individual, group, or organization to whom it is directed. The *functional* subcategories of prosocial *organizational* behavior are things like: providing service or products to consumers, helping customers with personal matters, suggesting organizational improvements, putting forth extra effort, volunteering for additional assignments, staying with the organization during hard times, and representing the organization favorably to outsiders. As is frequently pointed out, many of these kinds of actions were described by Katz and Kahn (1978) as extra-role (i.e., not prescribed by the management) behaviors that in fact contribute to the effectiveness of the unit or organization. Brief and Motowidlo (1986) did not make this distinction. Prosocial behaviors could be either; and, as described later in this chapter, can be sorted into existing dimensions identified in subsequent performance models.

The phenomenon of prosocial behavior has been a much bigger topic in social psychology for many decades (e.g., see Batson & Shaw, 1991; Cialdini & Kendrick, 1976; Darley & Latane□, 1968; Eisenberg & Miller, 1987; Penner, Dovidio, Piliavin, & Schroeder, 2005), where it is generally specified as, "actions that are defined by some significant segment of society and/or one's social group as generally beneficial to other people" (Penner et al., 2005, p. 22).

In the social psychology literature, the general issues have been: (a) whether prosocial behavior is altruistic or egoistic (i.e., does the giver expect some sort of return or reward, or benefit?); (b) what are the origins and determinants of prosocial behavior, including genetic

predispositions (e.g., Rushton, 1991; Trivers, 1971); (c) is "empathy" a requirement for prosocial behavior; and (d) is there a prosocial personality? Issues b, c, and d are concerned with the determinants of prosocial performance, not the nature of prosocial performance itself; and issue a remains unsettled. That is, identifying performance actions that are motivated by altruism is experimentally difficult.

Modeling Leadership and Management Performance

The literature on leadership is of course voluminous (e.g., Bass, 1990; Yukl, 2010). Virtually since the beginning of written history there have been theories/models of what leadership performance is, what determines individual differences in leadership performance, and what effects leadership performance has on subordinate, group, and organizational effectiveness. A part of this literature is concerned with describing the substantive content of leader performance. It is also true that the substantive specifications for leader performance are almost always embedded within a model or theory of leadership dynamics, although not all models are perfectly clear about what they mean by leader performance itself. It is certainly not the intent here to attempt a review of leadership theory. Bass (1990) and Yukl (2010), and the *Yearly Review of Leadership* issues of the *Leadership Quarterly* do that quite thoroughly. However, over the last 60-70 years a succession of leadership theories have incorporated specifications for the actions (behaviors) that comprise leader performance. A brief list is as follows. The somewhat disdainful criticisms of this literature are discussed later. Be advised that ambiguities concerning the identity of the dependent variable, and the confusion of performance with both its determinants and its outcomes (i.e., effectiveness) seem rampant throughout the leadership literature.

Beginning soon after WWII a series of "behavioral" leadership models attempted to describe what high performing leaders do. The results of the Ohio State studies (Fleishman, 1983) and research at the University of Michigan's Survey Research Center, the Research Center for Group Dynamics (Cartwright & Zander, 1960), and the Institute for Social Research (Likert, 1961) converged on a four factor description, which was summarized in the classic paper by Bowers and Seashore (1966), both of whom were at Michigan. The four factors are given below. The equivalent titles from the Ohio State studies are shown in parentheses.

1. *Support* (Consideration)

   Behavior that enhances someone else's feeling of personal worth and importance and shows mutual trust and respect.

2. *Interaction Facilitation* (Sensitivity)

   Behavior that encourages members of the group to develop close, mutually satisfying relationships and shows awareness of potential conflict and stressors.

3. *Goal Emphasis* (Production Emphasis)

   Behavior that stimulates an enthusiasm for meeting the group's goal or achieving excellent performance.

4. *Work Facilitation* (Initiating Structure)

   Behavior that helps achieve goal attainment by such activities as scheduling, coordinating, planning, providing ways to get the job done, and by providing resources such as tools, materials, and technical knowledge. Note that the factor does not refer to being unilaterally directive and "telling people what to do."

From the 1960's to the present, these basic factors occur again and again in leadership theory and research. Sometimes only two of the factors are emphasized (i.e., consideration and structure) and sometimes more fine grained subfactors are used, as in the Leader Behavior Description Questionnaire (LBDQ-12; Stogdill, Goode, & Day, 1962) or the Managerial Behavior Survey (Yukl & Nemeroff, 1979; Yukl, Wall, & Lepsinger, 1990). Virtually all the "contingency" models of leadership such as Fiedler's (1967) LPC (Least Preferred Coworker) and Path-Goal theory (House, 1971; House & Mitchell, 1974) incorporate the same factors. For example, leaders acting in a high LPC environment, rely on consideration and participation while leaders acting in a low LPC environment, rely on being structured and directive. The House and Mitchell (1974) version of the Path-Goal model uses four factors which are virtually identical to the four factors described by Bowers and Seashore (1966). What is characteristic of the contingency models is that the effectiveness of high scorers on particular performance dimensions is influenced by (i.e., contingent upon) certain characteristics of the situation, including the characteristics of the followers. However, the research support for major interactive effects in this regard, after various artifacts are accounted for, is very sketchy (Yukl, 2010). For example, the initial LPC contingency effects did not cross-validate well (Graen, Alvares, Orris, & Martella, 1970).

The models discussed so far essentially deal with leadership as a one-on-one process. Another group of models frame leadership influence in the group context. That is, the concern is how leadership performance influences work group effectiveness. Certainly this was the orientation early on at the University of Michigan Institute for Group Dynamics (e.g., Bales, 1958; Cartwright & Zander, 1960), when the collective concerns of both leaders and group members in high-performance groups were with behaviors directed at achieving the group's

goals and behaviors directed at group maintenance (i.e., keeping people involved, interested, feeling rewarded, and committed), which are the group centered analogs to structure and consideration at the individual level. Blake and Mouton (1964, 1983) incorporated these same two dimensions in a model of group leadership known as the Managerial Grid. The two dimensions were labeled Production Centered and Employee Centered and the Grid stipulated that it was most advantageous for a leader/manager to be proficient on both.

The group and one-on-one perspectives are essentially merged in Leader-Member-Exchange (LMX) theory (Graen & Uhl-Bien, 1995) which emphasizes that the influence process is reciprocal. That is, a leader develops a distinct relationship with each of his or her subordinates because of a mutual influence process that moves through several stages to a relatively stable psychological contract that essentially specifies who will do what for whom under what circumstances. The nature of the contract (i.e., the quality of LMX) can vary widely across leader-member pairs, as a function the performance capabilities and reward preference of each and the success of mutual influence attempts based on, in so many words, high consideration, mutually satisfying initiating structure, agreement on important goals, and sensitivity to sources of conflict and stress in the LMX relationship.

Currently, the leadership literature seems dominated by leader performance and effectiveness descriptions incorporated in the concepts of charismatic leadership and transformational leadership (Hunt, 1999). Charismatic behavior has been characterized by Weber (1947), House (1977), Shamir, House, and Arthur (1993), Conger and Kanungo (1998), and Yukl, 1999, 2010) as: articulating important and “visionary” goals for the organization, communicating the vision in a very expressive and positive emotional way, showing a willingness to take risks to accomplish the goals, communicating high expectations for followers,

expressing optimism and confidence in followers, and empowering followers to participate in decision making associated with achieving the visionary goals.

The specifications for transformational leadership performance were first articulated by the historian J.M. Burns (1978) after studying the careers of widely recognized national leaders. Transformational leadership was brought into the I/O Psychology mainstream by Bass (1985) and his colleagues (Bass, Avolio, Jung, & Berson, 2003). In general, transformational leadership performance is seen as less emotional and less hero-centered than charismatic leadership, but no less visionary, and focused on future goals of great importance. The measurement of transformational and transactional leadership has been facilitated by the development of the Multifactor Leadership Questionnaire (Bass & Avolio, 1990) The scales pertaining to transformational leadership performance include Individualized Consideration, Intellectual Stimulation, Inspirational Motivation, and Idealized Influence, although the item assignments to factors are not without ambiguity (Hinkin & Schriesheim, 2008). Some of the items also assess the follower's reactions to the leader (i.e., without reference to things the leaders did) which makes them assessment of effectiveness outcomes, and not leader performance actions. Given these ambiguities, the item content for the first three scales bears a striking resemblance to Consideration, Structure, and Production Emphasis from the Ohio State studies and to the Support, Work Facilitation, and Goal Emphasis factors from the Bowers and Seashore (1966) synthesis. As part of the MLQ description, the high performing transformational leader also communicates confidence, enthusiasm, and the importance of collective interests regarding the goals to be accomplished. Consequently, Idealized Influence might also be referred to as "modeling" the attitudes and behaviors desired from others.

From this brief examination of current and past attempts to specify the behaviors on actions that comprise leadership performance, one major conclusion stands out. There is simply an amazing degree of consistency across models and theories stretching from 1950 to the present, in terms of the basic dimensions that constitute the latent structure of leader performance when performance is defined as this chapter defines it. The literature is not helter-skelter, it converges. Further, as will be subsequently discussed, the same latent structure seems to be applicable to any organizational level, and to peer leadership as well. It deserves to be part of any comprehensive model of individual performance.

*Leadership Performance **versus** Management Performance*

The relationship between leadership and management is a traditional issue in the literature. Are they the same thing? Are they mutually exclusive? Do they overlap? Is one part of the other? It is possible to find proponents for each of the above alternatives, but the core of the issue is whether there are a set of functions, or performance dimensions, that can be called "leadership" and a relatively distinct set of other functions or dimensions that can be called "management." Whether or not the two sets of functions can be found in the same work role, or performed by the same person, or whether they are always part of the same role, is another issue. This chapter is concerned with the first issue, not the second.

To some degree, there has been a separate literature devoted to identifying the performance dimensions comprising management that parallels the leadership literature. For example, there have been intensive case studies of a small number of managers (e.g., Kotter, 1996, Mahoney, Jerdee, & Carroll, 1963; Mintzberg, 1973), several critical incident data collections intended to identify categories of management performance (see Borman & Brush, 1993), and several research programs that developed questionnaire assessments of management

performance behavior (e.g., Hemphill, 1959; Mahoney, Jerdee, & Carroll, 1965; Page & Tornow, 1987; Wilson, O'Hare, & Shipper, 1990; Yukl & Nemeroff, 1979; Yukl, Wall, & Lepsinger, 1990).

There is also a parallel literature on management theory (see Carroll & Gillen, 1987, for a review) which provides specifications for critical management functions such as planning, coordinating resources, negotiating, monitoring and evaluating, and staffing. Prescriptions for the formal functions of management go back to Weber (1947), Fayol (1949), Urwich (1952), and others, and can be found in virtually any management textbook.

Within I/O psychology there have been two major efforts to provide a composite picture of management performance dimensions, and they each used a very different approach. However, comparing where they ended up and how they relate to the leadership performance models previously discussed is instructive.

Borman and Brush (1993) analyzed the results from seven published and 19 unpublished critical incident studies of management performance by first aggregating the distinct dimensions indentified in each study, the total of which was 187, and then asking an SME sample of 30 I/O psychologists to sort the 187 dimensions into homogeneous categories. The resulting matrix of similarities was factor analyzed, and an 18-factor solution seemed the most appropriate. A brief description of the 18 factors is shown in Table 2.

Insert Table 2 about here

Yukl et al. (2002) developed a composite set of 12 leadership-management performance dimensions by reviewing all available measures of management-leadership performance, from

the Ohio State Leader Behavior Description Questionnaire to his own Managerial Practice Survey (Yukl et al., 1990) to the Bass and Avolio (1990) Multi-Factor Leadership Questionnaire (MLQ), and categorizing the dimensions from each into the twelve factors shown in Table 3.

Insert Table 3 about here

Looking at the results of the Borman & Brush (1993) and Yukl et al., (2002) efforts suggests the following:

1. There is a great deal of overlap, but some dimensions found in one were not identified in the other.
2. Both sets contain dimensions that some call leadership and some might call management (e.g., planning and organizing).
3. Some dimensions seem to be neither (e.g., Technical Proficiency, Persistence in reaching goals).
4. Some dimensions seem reminiscent of Contextual or OCB factors (Representing the organization, Organizational commitment).

Resolving these issues, or at least making them clearer, requires a more explicit specification of leadership vs. management.

The position taken here is that leadership and management each involve a distinct set of functions to carry out, or roles to perform. That is, each has its own set of performance dimensions, which can be differentiated, to a degree that is useful for selection, training and development, job design, and performance assessment purposes. Most often these two sets of functions are, to some degree, the responsibility of one individual, who usually carries the title

of supervisor, manager, or executive (Yukl & Lepsinger, 2005). However, individuals with other job, occupation, or work role titles can perform these functions as well, and the composition of a particular work role can change dramatically, as regards management and leadership functions, when the goals of the organization or unit change. That is, there is nothing that is particularly static about these two sets of responsibilities.

For present purposes, the overall distinction between these two sets of performance dimensions is that leadership involves direct interpersonal influence. That is, actions taken in the name of leadership attempt to influence the behavior of other people such that their performance is enhanced, both individually and collectively. Individual performance can be enhanced by other processes as well (e.g., on-line training), but direct interpersonal influence is, by definition, the domain of "leadership." This definition was not handed down from some higher authority. It simply seems to be very useful.

As distinct from leadership, management involves activities that best use (i.e., manage) the organization's resources to achieve its goals. They involve cognitive and communicative processes that influence others, but they do not rely, again by definition, on interpersonal influence. For example, developing a budget is a management function that will have important effects on others. However, selling it to other individuals may take interpersonal influence (i.e., leadership).

Again, there is no one best way to define leadership and management. The above is simply one that seems to be useful for developing a comprehensive substantive model of individual performance at work.

A Synthesized Taxonomy

Given the above working definition of leadership and management, and based on the accumulated research summarized above that attempts to specify the latent structure of leadership and management performance, a proposed synthesis is presented in Table 4. Given that the world of work can never be carved up quite so neatly, a set of caveats and conditionals follows.

Insert Table 4 about here

Table 4 is intended to be a distillation of all previous taxonomic, or taxonomic appearing, research on the substantive performance content of leadership and management. There are 14 factors, written at a fairly high level of generality. Both higher order and more specific subfactors can be found in the literature (see Yukl, 2010). The level of generality/specificity was chosen because 60 years of theory and research seems to converge on it. Using fewer higher order factors would seem to cover up some useful distinctions. Using more specific factors would be both possible and useful for specific research or application purposes, such as determining training needs or investigating particular kinds of performance dynamics.

Again, no jobs, occupations, or work roles would be comprised of only leadership factors, or only management factors. Many positions might incorporate substantially all of them, but some would not. The 14 factors are meant to represent leadership and management wherever they might occur. It is intended that the same factors could be used to describe executive, management, supervisory, and peer leadership and management, although the criticality or relative emphasis of the factors might change significantly across different levels.

Although to a certain extent this separation of leadership and management performance content is forced, they do come from different research streams and the differential emphasis on direct interpersonal influence seems meaningful. Two factors that are not in Table 4 but which do appear in the management literature are *communication* performance and performance in the appropriate *technical* specialty. These two factors appear as separate dimensions in most performance models and they have no particular link to leadership and management. Consequently, they are omitted from Table 4, but included in the general model to be discussed subsequently.

It is noteworthy that virtually all of the performance dimensions discussed under the headings of Contextual Performance and Organizational Citizenship Behavior (OCB) also appear as major dimensions in the leadership/management literature. For example, helping and cooperating with others, organizational courtesy, and altruism have specifications that are very similar to the leader consideration factor. The external representation factor in the management taxonomy is very similar to the contextual factor of endorsing, supporting, and defending organizational objectives and to the civic virtue factor of OCB. Both the Contextual Performance taxonomy and the OCB taxonomy have factors reflecting compliance with organizational policies, regulations, work rules, and norms. Theory and research dealing with management performance also produced such a factor. A study by Conway (1999) also supports the convergence between leadership and OCB.

The considerable overlap between the content of Contextual/OCB and leadership/management performance lends credence to the previous assertion that peer leadership and peer management performance can be described with the same factors as

supervisor/manager/executive leadership and management performance. Whether such dimensions are in-role or extra-role is a separate issue (e.g., see Vey & Campbell, 2004).

In the Campbell et al. (1993) model, Effort appears as a separate factor even though performance on every substantive factor is in part a function of effort. This seems to confuse performance and its determinants. Again Campbell et al. (1993) tried to avoid this conundrum by defining effort in observable substantive terms, such as working extra hours or working under extreme conditions of weather or risk, that would contribute independently to the organization's goals. Specifying the "content" of effort in terms of such observables serves to make effort at least somewhat independent of the other substantive factors. It is noteworthy that Contextual Performance and OCB, as well as the management performance literature (see Table 4) include a factor labeled "Persistence," or "Extra Effort," or "Individual Initiative" defined much as Campbell et al. (1993) defined Effort. Consequently, this factor does not appear in Table 4 because it is not specific to a leadership or management role, regardless of the organizational level at which the role is located. It appears later as part of the overall model of individual performance.

The Negative Reaction Potential

Asserting that six decades of theory and research have produced a virtual consensus regarding the latent structure of leadership and management performance, when performance is defined as it is in this chapter, will probably not sit well with the current community of leadership scholars and researchers in organizational behavior as represented by their publications in the *Journal of Applied Psychology*, the *American Academy of Management Journal/Review*, and the *Leadership Quarterly*. Such an assertion will be labeled as naïve, simple minded, and mired in static, out-of-date overly positivist leadership models that focus on

one-on-one leader/follower relationships at only one organizational level (e.g., see Drath et al., 2008). Making a big deal of such a latent structure could be seen as committing serious errors because it does not take into account multi-level effects, the myriad interactions with the complex features of the context in which leadership takes place, and the dynamic complexity of organizational functioning in the 21st century (Uhl-Bien, Marion, & McKelvey, 2007). Further, some make the argument that there has been a genuine paradigm shift in leadership theory that has revitalized that field, and markedly reduced the usefulness of Table 4. To be specific, the argument is that introduction of transformational leadership theory, and the reformulation of charismatic leadership, speak to issues that excite scholars, researchers, and practitioners (Hunt, 1999). Table 4 does not.

The message here is not to worry. Asserting that Table 4 is a consensus about the latent structure of leadership and management performance is really not incompatible with any recent major developments in leadership theory, unexciting as that might seem. For example, it is not incompatible with any of the chapters in the Society of I/O Psychology Frontiers Series volume on organizational leadership edited by Zaccaro and Klimoski (2001). One reason is that leadership is an area where the independent and dependent variable *do* get confused and the distinctions among behavior, performance, and effectiveness are anything but consistent. Also, new labels are frequently invented for the same phenomenon and "theory" sometimes becomes an end in itself rather than a means to an end. Theories and models are not the dependent variable, and our goal is not to "prove" whether a theory is right or wrong (Campbell, 1991b). The function of theory is to identify critical research questions (or hypotheses if you prefer) that, if answered (or tested), would advance our knowledge of (a) the assessment of leadership performance; (b) the prediction and development of leadership performance; (c) the relationship

of leadership performance to peer, team, unit, and organizational effectiveness; (d) the processes by which leaders (or leadership) influence other people and thereby achieve desired outcomes; and (e) the optimal allocation of leadership resources across the organization.

Again, the assertion that there is a consensus regarding the latent structure of leadership performance is not incompatible with any previous or current theory/model of leadership and the assertion is not guilty of most of the charges leveled against it. The following is a list of perceived shortcomings that are misdirected.

1) Leadership theory itself, in scientific psychology, is frequently seen as representing a historical progression from one competing model to the next and that the newest model supplants those that came before, as if they were competing explanations for the same thing, so out with the old and in with the new. In the beginning there were "trait" models (see Mann, 1965; Stogdill, 1948) that were found wanting and were supplanted by the "behavior" models developed at Michigan and Ohio State. However, "trait" models and "behavioral" models don't address the same issues. The traits in question were predictors or *determinants* of leader performance and most of the research focused on predicting who would "emerge" as the nominated leader in, initially leaderless, small groups. As discussed previously, the Michigan and Ohio State studies focused on specifying the substantive content of leader *performance*. Consequently, in the beginning there was an immediate confusion between performance itself and its determinants, some of which could be, and are, traits. They are not competing explanations of "leadership."

   Similarly, the subsequent contingency models (Fielder, 1967; Hersey & Blanchard, 1977; House, 1971; House & Mitchell, 1974) did not reject the consensus latent

structure of leadership performance. Instead, they attempted to specify the properties of the context that would moderate the effects of different dimensions of leader performance on the behavior of subordinates (an outcome). This does not invalidate the consensus latent structure model. It makes its identification even more critical. Leader Member Exchange (LMX; Graen & Uhl-Bien, 1995) goes further and says the influence process is reciprocal and the initial performance of the "other" will in turn influence what the leader does subsequently. A high performing leader will emphasize the most appropriate performance actions as LMX continues. That is, the latent structure of leader performance has the same meaning, but the dimensions that are emphasized with each subordinate, or peer, are unique to that person, and also vary as a function of the developmental stage in the LMX process. High performing leaders optimize this differential emphasis to achieve the highest quality LMX that is possible, given the characteristics of the other individual and the context in which exchange is occurring.

The consensus latent structure is also not contradicted by the charismatic (Conger & Kanungo, 1987) or transformational (Bass, 1985) leadership models. They are compatible with their historical predecessors and do not represent a paradigm shift in the Kuhnian (1963) sense, as asserted by Hunt (1999). The differences are really a matter of degree even if it is a fairly large degree. That is, the specifications for leader performance incorporated in the charismatic and transformational models cover most of the latent factors listed in Table 4, but they emphasize the high end of the performance distribution, or "exceptional" leadership, in Bass's terms (1985). Conversely, Bass's notion of laissez-faire leadership really represents the low scorers

on certain leadership dimensions. Because it does focus on exceptionally high performance, the transformational model resonates with people who are worried about the increased intensity and dynamics of the global economy, and there is nothing wrong with that, but it is not really a paradigm shift regarding the latent structure of leadership performance, when performance is defined as it is in this chapter.

Something called the Complexity Theory of Leadership is also a recent development (Marion & Uhl-Bien, 2001; Uhl-Bien et al., 2007). It addresses leadership in the kinds of modern organizations referred to as Complex Adaptive Systems (CAS). The principal point is that for such systems (i.e., organizations) to be effective, leadership must be distributed throughout the system via teams, groups, and networks, that can be both formal or informal, such that the system can react quickly and effectively to changing conditions without having to rely on a cumbersome central chain of command to provide leadership resources. This notion is not incompatible with previous work on leadership functions in high performance teams (Goodman, Devadas, & Griffith-Hughson, 1988; Weick & Roberts, 1993). Nothing in the consensus model says that these leadership capabilities cannot distribute themselves across the organization to meet the dynamics and complexities of the 21st century organizations. However, what the consensus model does say is that the content of the leadership *and* management capabilities being distributed are described by the consensus latent structure. The current literature on complexity leadership does seem to focus more on management functions than leadership functions, as they are distinguished in Table 4.

2) Some (e.g., Zaccaro, Rittman, & Marks, 2001), seem to argue that the Table 4 specifications of leadership and management performance are much less useful than a functional specification of leadership (McGrath, 1962) that directs the leadership focus to getting done whatever needs to be done to accomplish group, unit, or organizational goals (Kozlowski & Ilgen, 2006). However, discussions of leadership functionality seem to confuse performance and effectiveness by virtually equating functional leadership with leadership effectiveness, or the achievement of valued outcomes. Consequently, there is no fundamental incompatibility between Table 4 and a functional view of leadership. The form of the relationship between leadership performance and functional leadership (i.e., leadership effectiveness) is as discussed earlier in this chapter.
3) By implication (e.g., Day & Harrison, 2007) Table 4 is viewed as not being able to describe leadership performance at multiple organizational levels. However, the argument here has been just the opposite. The latent structure described in Table 4 is applicable at any organizational level, although the relative emphasis across the performance dimensions may vary, and the actions with each dimension that are the most critical may vary. For example, the nature of the training and coaching role would be different for supervisors versus executives, but there would still be such a role.
4) Team leadership in the modern era is seen by some (e.g., Day, Gronn, & Salas, 2006) as qualitatively different than the leadership role in more traditional settings. Consequently, one should not look to Table 4 for specifications of leadership performance in team settings. However, what is different about leadership in teams is

not that the latent structure of leadership performance is different, but that the team members also take on leadership and management responsibilities and leadership is often shared across levels (Burke et al., 2006; Day et al., 2006; Hiller et al., 2006). When performance is defined as it is in this chapter, the available data support the assertion that the dimensions shown in Table 4 describe the major leadership and management components of team member *and* team leader performance.

5) Leadership at different organizational levels is not to be confused with "level effects," which refer to the unit of analysis. Table 4 refers to the performance of individuals. Could it also describe the performance of a team, a unit, or an organization? That is, for example, could research focus on the independent effects of individual *team member* consideration/support, goal emphasis, and problem solving, and on the same "actions" as provided by the group, as a group? The group or organizational effect is often referred to as the management/leadership climate or culture, but there is no consensus about the latent structure of leadership/management climate that rivals that for Table 4. The dimensions described in Table 4 are individual performance dimensions, not climate dimensions; although leadership climate may interact with leadership performance.
6) The latent structure portrayed in Table 4 does *not* preclude a multitude of context effects (e.g., Mumford, Antes, Caughron, & Friedrich, 2008; Osborn, Hunt, & Jauch, 2002) that govern how leadership performance will influence outcomes. Contextualizing leadership/management does not remove the need for a latent structure of performance, defined in the way this chapter defines it. It is simply the

case that performance, contextual effects, the interaction of performance and context, and leader performance outcomes (i.e., effectiveness) should not be confused.

7) Modeling leadership as a political process *does* have implications for Table 4 (e.g., see Ammeter, Douglas, Gardner, Hochwarter, & Ferris, 2002). Invoking a political model implies that there are genuine conflicts among constituencies over goals and the distribution of resources. Table 4 implies that high performance on certain critical dimensions can resolve such conflicts in the best interests of achieving the organizational goals. If leadership and management performance, as characterized by Table 4, fails to resolve the conflict, then a political process could ensue which would to some degree call for different performance actions on the part of leadership and management within the competing factions. The use of power, political influence, and manipulative social influence tactics to carry the day does stand in contrast to Table 4, and we probably have all been in organizations where it happens
8) The leadership dimensions in Table 4 are sometimes referred to as "styles" (e.g., Schreisheim, Wu, & Scandura, 2009). Lord & Hall (2005) are particularly dismissive when they refer to them as mere styles which can be learned in a short time. They then go on to talk at length about the development of leadership "skills" (i.e., performance determinants), which in their view, is a long and complex process of developing expertise. Again, Table 4 is meant to be a portrayal of the principal things leaders <u>do</u>. For example, production emphasis is not a style. It is a set of performance actions required by a leadership role, although its specific content may vary depending on organizational level, etc. There is no implication that being a high performer on this dimension is easy and can be learned in a few days. Acquired skills,

which may take a long time to develop, are important determinants of performance on this factor, and also on other factors. Performance has multiple determinants.

The overall moral here regarding theory and research in management and leadership, is that both modernists and post-modernists (Esade & McKelvey, 2010) should not make negative comparisons between the new and the old until it is perfectly clear that they are talking about the same thing. Very often, they are not.

Team Member Performance

The literature on work team functioning has grown considerably over the past 25 years (e.g., Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Kozlowski & Ilgen, 2006). One reason for the expansion is that an increasing amount of an individual's work is performed in a team context, where a team is defined as a group of individuals with somewhat different roles and responsibilities, but who must work interdependently, and who are chartered to accomplish a set of *team* goals or objectives. The team goals usually, but not necessarily, flow from the team's role in accomplishing the goals of a larger organizational system (i.e., there may be no larger system). There are many varieties of such work teams (e.g., see Guzzo & Dickson, 1996) ranging from advisory groups, to specific project groups, to ongoing production or service teams, to so-called action teams that spend most of their time preparing for the occasion when they must address their chartered goals in a very intense context (e.g., firefighting units or sports teams). Work teams may exist over long periods of time, or over relatively short periods of time; however, their defining characterizations are a common goal, or set of goals, and the need for coordinated or integrated effort. Consequently, they are to be distinguished from the traditional hierarchical work group in that the team members assume some level of leadership and management responsibilities (Goodman et al., 1988).

Considerable research and theory have been directed at the determinants of work team success such as the abilities, personality, and motivation of the team members; the teamwork processes that are used to accomplish objectives, the quality of team leadership, the nature of the goals to be pursued, and a variety of situational and context efforts such as technology, the organizational climate/culture, group norms, group cohesion, team efficacy, team member diversity, etc. (Guzzo & Shea, 1992; Hackman, 1992; Salas, Stagl, & Burke, 2004).

Somewhat strangely, relatively little attention has been devoted to individual performance *as a team member*. That is, what must team members do to meet the performance requirements of being in a particular team at a particular time and place within a particular structure with a certain set of objectives? In other words, how should individual performance as a team member be modeled, or can it be? There have been only a few efforts in that direction. Stevens and Campion (1994) developed specifications for individual teamwork "skills" by synthesizing what literature was available. Podsakoff, Ahearne, and MacKenzie (1997) used an OCB framework to describe team member performance. Olson (2000) used a critical incident strategy to identify individual teamwork performance factors, and Hiller, Day, and Vance (2006), proposed and tested a four-factor model that included (a) planning and organizing, (b) problem solving, (c) support and consideration, and (d) development and mentoring. All of these efforts made the assumption that at some level of generality the dimensions of individual teamwork performance could be specified such that they would not be situationally specific.

The study by Olson (2000) is helpful because it is based both on a review of the previous literature, which yielded a set of seven dimensions, and on a relatively extensive critical incident data collection that produced a revised taxonomy. Several hundred (650) critical incidents were collected from four high performance work teams. Two were project teams in engineering firms

and two were advisory/planning teams in medical centers (total N = 93). Each individual was asked to describe examples they had observed of both "effective" and "ineffective" performance as a team member. A random sample of 200 incidents was sorted into categories by 20 SME's. These sorts were both (a) retranslated by another sample of SME's, and (b) subjected to a principal component analysis of the 200 x 200 agreement matrix. The process was then replicated using another random sample of incidents. The final set of dimension specifications is shown in Table 5.

Insert Table 5 about here

The critical incidents were unprimed in the sense that no apriori structure was provided to the incident writers. However, what emerged was something very similar to the specifications that emerged from the leadership/management literature. Members of high performance work teams do in fact see their roles as having leadership and management responsibilities, in addition to their technical performance responsibilities. Also, they are very much aware of the coordination, work load distribution, and problem solving components of their teamwork role. Overall, their inductively derived specifications are quite consistent with the previous teamwork literature, with the subsequent research by Hiller et al., (2006), with the previous 60 years of research on leadership and management as portrayed in Table 4, and with the previous 25 years of research on job performance modeling, including the research on contextual performance and organizational citizenship.

While the focus of this chapter is on individual performance, including individual performance as a team member, the above literature is also consistent with the findings of Marks,

Mathieu, and Zaccaro (2001) and LePine, et al., (2008) who focused on the team itself as the unit of analysis. Their dimensions of what they call team *processes* map very well onto the dimensions in Table 5, as well as the broader taxonomy represented in Table 4. Useful research questions would revolve around the relationships between individual assessments of performance as a team member and assessment of the performance of the "team" on the same dimensions.

Models of Performance Revisited

Given this brief synopsis of approaches to modeling individual work role performance, is there a useful synthesis? The simple answer here is an emphatic, yes. Further, there is so much commonality across the various models that very little "synthesis" or "integration" is actually needed. Many of the differences noted in the literature (without naming names) seem to be straw people.

The following properties of the synthesized description should be kept in mind.

a) The "model is composed of *dimensions* of *performance*, when performance is *defined as it is in this chapter.* That is, each dimension is intended to circumscribe a domain, or universe, of actions/behaviors, each of which belongs in that particular domain, and not some other one. There are most likely identifiable subdomains, or subfactors, within each. However, each dimension should not be characterized as a small finite list of specific behaviors. To do so is to set up a straw person. Each major dimension constitutes a domain of behavior. Measurement must necessarily sample from each domain, and for various purposes, the samples could be nonrandom, as in assessing theft behavior at various organizational levels.

Again, the actions that comprise a particular factor cannot be divorced from a consideration of unit or organization goals. The content of a dimension must be goal relevant, in either a positive or negative way, and scalable in terms of the level of performance exhibited by an individual.

b) The composite model, as well as the individual models on which it is based, is intended to identify the *substantive* content of performance. It does *not* address how performance proficiency develops, or how individual differences in performance interact with parameters of the "situation" to influence particular outcomes. These are research questions to be addressed, but they should be addressed using a meaningful substantive specification for the main effects, in this case individual performance.

c) The model is intended to be taxonomic and hierarchical, and there are most certainly multiple levels in the hierarchy, only some of which are currently specified.

d) The model is intended to be applicable to any occupation, job, or work role, however briefly occupied. That is, accusations of being anachronistically tied to "jobs" reflect a straw person.

e) At any given time, a particular work role is composed of more than one dimension of performance, but not necessarily all of them, at a particular level in the hierarchy. However, there may be universals (e.g., technical performance, counterproductive work behavior), and there may be more management or leadership requirements in many work roles than would be expected by the conventional wisdom.

f) The model does not address issues of adaptability or performance dynamics. More about these issues later, but to accuse it of being a "static" picture is to invoke another straw person. Both the performance requirements of the work role and the performance capabilities of the individual can readily change. *However*, all such changes should be described in terms of the content of the model.

Given these perspectives, an extended discussion of the composite picture of the dimension of work performance follows.

A Composite Model of Individual Work Performance Dimensions

This composite is intended to be based on all work in I/O Psychology, and related fields, as of the current date. Consequently, it reflects empirical factor analytic work, job analyses, case studies, conceptual frameworks that seem to have stood the test of time, and performance measurement efforts. Orthogonality is not asserted or implied, but content distinctions among dimensions that have different implications for selection, training, and organizational outcomes certainly are. While scores on the different dimensions may be added together for a specific measurement purpose, it is not possible to provide a *substantive* specification for a "general" factor. Whether there can be dimensions as general as Contextual Performance or Citizenship Behavior will be addressed later.

The Basic Factors

The basic substantive factors of individual performance in a work role stated at the highest feasible level of generality seem to be the following. (They are *not* synonymous with Campbell et al., 1993).

Factor 1 - technical performance. All models acknowledge that virtually all jobs or work roles have technical components. Such requirements can vary by substantive area (driving a vehicle vs. analyzing data) and by level of complexity or difficulty within area (driving a taxi vs. driving a jet liner; tabulating sales frequencies vs. modeling institutional investment strategies). By definition, such performance content does not involve interpersonal influence relative to subordinates, superiors, or coworkers, or general management functions, but it could involve persuasion of customers or clients to make choices beneficial to the organization. Consequently, persuasion and negotiation qualify as technical content for some jobs or roles. Technical performance is not to be confused with "task" performance. A task is simply one possible unit of description that could be used for any performance dimension.

The subfactors for this dimension are obviously numerous, and the domain could be parsed into large or narrow slices. In days of old, the Dictionary of Occupational Titles (DOT) contained technical task descriptions for 13,000+ "jobs." Currently, the U.S. Department of Labor uses occupational classifications at varying levels of technical specificity. The Occupational Information Network (O*NET; Peterson, Mumford, Borman, Jeanneret, & Fleishman, 1999) is based on the Department of labor's Standard Occupational Classification (SOC) structure which currently uses 821 occupations for describing the distinctions of technical task content across the entire labor force and the 821 occupations are further aggregated into three higher order levels consisting of 449, 96, and 23 occupational clusters respectively. Interestingly, the managers of O*NET have divided some of the SOC's into narrower slices to better suit user purposes and have also added "new and emerging" occupations such that O*NET 14.0 collected data on 965 occupations. The number will grow in the future (National Research

Council, 2010). Potentially at least, an occupational classification based on technical task content could be used to archive I/O Psychology research data on individual performance.

Factor 2 - communication. The Campbell et al. (1993) model is the only one that isolated communication as a separate dimension. More typically it is part of the technical factor or appears as a facet of management (Yukl et al., 2002). It remains in this composite picture because it does "seem" to be part of many occupations ranging from teaching, to research, to the arts, to sales, to customer service, to management. Again, it refers to the proficiency with which one conveys information that is clear, understandable, and well organized. It is independent of subject matter expertise. The two major subfactors would be oral vs. written communication.

Factor 3 - initiative, persistence, and effort. This factor emerged from the contextual performance and management performance literatures, as well as the OCB literature where it was referred to as Individual Initiative. To make this factor conform to the definition of performance used in this chapter it must be composed of substantive observable actions. Consequently, it is typically specified in terms of extra hours, voluntarily taking on additional tasks, working under extreme or adverse conditions, etc.

Factor 4 - counterproductive work behavior. As it has come to be called, Counterproductive Work Behavior (CWB) refers to a category of individual actions or behaviors that have negative implications for accomplishment of the organization's goals. While such counterproductive actions as theft on the job, absenteeism, and freeloading have been studied as single phenomena, the first study to include such variables as specifications for a latent dimension of performance was Project A (Campbell, 1991a) where it was termed Personal Discipline. It was derived from archival and ratings data and included a wide variety of rule infractions and disciplinary actions. The factor appeared in the covariance analyses of the

performance indicators in all four of the Project A data sets. The dimension had no positive end, just varying degrees of a lack of personal discipline.

The current literature does not speak with one voice regarding the meaning of CWB, but the specifications generally circumscribe actions that are intentional, that violate or deviate from prescribed norms, and which have a negative effect on the individual's contribution to the goals of the unit or organization. Descriptions of this domain are provided by Gruys and Sackett (2003) and Robinson and Bennett (1995). There seems to be general agreement that there are two major subfactors (e.g., see Bennett & Robinson. 2000; Berry, Ones, & Sackett, 2007; Dalal, 2005) distinguished by the deviant behaviors directed at the organization (theft, sabotage, falsifying information, malingering) and behavior directed at individuals, including the self (e.g., physical attacks, verbal abuse, sexual harassment, drug and alcohol abuse). Although not yet fully substantiated by research, it seems reasonable to also expect an approach/avoidance, or moving toward versus moving away distinction for both organizational deviance and individual deviance. That is, the CWB's dealing with organizational deviance seems to divide between aggressively destroying or misusing resources versus avoiding or withdrawing from the responsibilities of the work role. Similarly CWB's directed at individuals seem to divide between aggressive actions that are directed at other people and destructive actions directed at the self, such as alcohol and drug abuse, and neglect of safely precautions. The approach-avoidance distinction is a recurring one in the study of motivation (Elliot & Thrash, 2002; Gable, Reis, & Elliot, 2003) and of personality (Watson & Clark, 1993) including a major two-factor model of psychopathology (Markon, Krueger, & Watson, 2005). It is also suggested in a study of counterproductive work behavior by Marcus, Schuler, Quell, and Humpfner, (2002).

Consequently CWB's that reflect aggressive actions should be predicted by different factors than CWB's that represent withdrawal.

A major issue in the CWB literature is whether its principal subfactors are simply the extreme negative end of other performance factors, or whether they are independent constructs. For example, do withdrawal actions constitute the negative end of the Initiative, Persistence, Effort factor, and do the deviant behaviors directed at individuals constitute the negative end of the peer leadership factors, or do they constitute a different construct. The general question is whether two variables constitute one bipolar variable or two independent variables (i.e., an individual could be high or low on both and individual differences on each item variable are predicted by different things). This is a classic issue in psychological measurement and "more research is needed;" however, the evidence currently available (Berry et al., 2007; Dalal, 2005; Kelloway, Loughlin, Barling, & Nault, 2002; Miles, Borman, Spector, & Fox, 2002; Ones & Viswesvaran, 2003; Spector, Bauer, & Fox, 2010), suggest that CWB's are not simply the negative side of other performance components. Low scores on other performance dimensions could result from a lack of knowledge or skill, but low scores on CWB reflect intentional deviance and are dispositional in origin.

One area of research and theory that has not been incorporated in the CWB discussion thus far pertains to the definition and assessment of business ethics (e.g., Henle, Giacolone, & Jurkiewicz, 2005). To the extent that unethical behavior is judged to be counterproductive for the organizations goals, the ethics literature is relevant for modeling job performance.

Factor 5 - supervisory, manager, executive (i.e., Hierarchal) leadership. This factor refers to leadership in a hierarchical relationship and the substantive content is most parsimoniously described by the six leadership factors in Table 4. Again, the parsimony results

from the remarkable convergence of the literature from the Ohio State and Michigan studies through the contingency theories of Fielder, House, Vroom, and Yetton to the current emphasis on being charismatic and transformational, leading the team, and operating in highly complex and dynamic environments. Depending on the particular research stream, or the leadership model under consideration, the emphasis may be on leader performance, as defined in this chapter, or it may be on the outcomes of leader actions (i.e., effectiveness), or on the determinants (predictors) of leadership performance, or on the contextual influences on leader performance or effectiveness. However, when describing or assessing leadership *performance*, the specifications are always in terms of one or more of these six factors. The relative emphasis may be different, and different models may hypothesize different paths from leader performance to leader effectiveness, which for some people may be the interesting part, but the literature's characterization of leader performance itself seems always within the boundaries of these six subfactors.

Similarly, the six subfactors circumscribe hierarchical leadership performance at all organizational levels. However, the relative emphasis may change at higher organizational levels and the specific actions with each subfactor may also receive differential emphasis. For example, at the supervisory level Consideration/Support and Training/Coaching may be more important than at the executive level; while Goal Emphasis becomes dominant at the higher executive levels to the point that it becomes transformational when skillfully done.

Factor 6 - management performance (hierarchical). Within a hierarchical organization this factor includes those actions that deal with obtaining, preserving, and allocating the organization's resources to best achieve its goals. The major subfactors of management performance are also given in Table 4. As it was for the components of leadership, there may be

considerably different emphases on the management performance subfactors across work roles. For example, there may be no Staffing requirement, or the External Representation factor may dominate everything (think BP CEO performance during the Gulf oil spill). Situational changes may change the emphasis on different subfactors, or specific managers may emphasize different factors, as a way of designing their own job. The model does not imply that the management performance requirements of a particular position or work role are static and cannot change. The relative emphasis most likely will change as a function of the type of organization, the organizational level, changes in the situational context, changes in organization goals, etc. However, these six subfactors are intended to provide the general specifications for the performance domain labeled "management."

Factor 7 - peer/team member leadership performance. The content of this factor is parallel to the actions that comprise hierarchical leadership (Factor 5 above). That is, the subfactors are: Providing consideration and support; Providing structure, guidance, and direction (to one's peers); Emphasizing goals; Facilitating the participation of others in decision making and problem solving; Training and Coaching others; and Serving as a model. The defining characteristic is that these actions are in the context of peer or team member interrelationships; and the peer/team relationships in question can be at any organizational level (e.g., production teams vs. management teams). That is, the team may be comprised of nonsupervisory roles or a management team of unit managers. Again, at different organizational levels the peer leadership performance requirements may differ in terms of the relative importance of the subfactors. For example, depending on a number of context factors, the importance of Goal Emphasis may increase and the importance of Teaching and Coaching may decrease at higher organizational

levels. However, the overall domain of peer leadership and support is intended to be described by the six leadership subfactors in Table 4.

Factor 8 - team member/peer management performance. A defining characteristic of the high performance work team (Goodman et al., 1988) is that team members perform many of the management functions shown in Table 4. For example, the team member performance factors in the Olson (2000) taxonomy that are not accounted for by the technical performance factors or the peer leadership factor concern such management functions as planning and problem solving, determining within team coordination requirements and workload balance, and monitoring team performance. In addition, the contextual performance and OCB literatures both strongly indicate that representing the unit or organization to external stakeholders and exhibiting commitment and compliance to the policies and procedures of the organization are critical performance factors at any organizational level. Consequently, to a greater extent than most researchers realize or acknowledge, there are important elements of management performance in the peer or team context as well as in the hierarchical (i.e., management/subordinate) setting.

Summary

As stated at the outset, these eight factors are intended to be an integrative synthesis of what the literature has suggested are the principal dimensions of performance in a work role. They are meant to encompass all previous work on individual performance modeling, team member performance, and leadership and management. Even though the different streams of literature may use somewhat different words for essentially the same performance actions, there is great consistency across the different sources.

It must be kept in mind that these eight factors address the substantive content of individual work performance when performance is defined as it is in this chapter. The model

does not speak to the determinants of individual differences in performance on these factors, or to the contextual factors that might influence the group mean on a particular factor, or to the effect of performance differences on various outcome measures. It also does not speak to the dynamics of performance or to the processes by which individual performance affects other variables or outcomes. Other chapters in this volume take up these issues in some detail. However, substantive models such as this one do have some important implications for these other issues, one of which is performance dynamics.

Performance Dynamics

When attempting to summarize I/O Psychology's collective efforts to model work performance, it is important to distinguish between substantive and nonsubstantive properties of individual performance. So far, this chapter has centered on a substantive model of performance content about which there is virtually a consensus.

There is a parallel universe that addresses the parameters of performance dynamics, including the concepts of active, proactive, and adaptive performance. These two areas of inquiry, the latent structure of work performance content and the nature of performance dynamics, are not in competition. They address different issues, but each has important implications for the other.

Again, excellent discussions of performance dynamics appear elsewhere (e.g., Sonnentag & Frese, this volume), and they are not repeated here. However, the major parameters of performance dynamics are summarized below for purposes of illustrating their juxtaposition with the latent structure of performance content.

No one seriously argues that individual work performance does not change over time, and there are many reasons why such changes could occur. Obviously, the performance requirements for an individual could change. That is, the substantive content of a work role could change over time (perhaps a short time) with the result that specific individuals will make lesser contributions to the organization's goals unless they change as well. However, there are at least three ways performance requirements could change: (a) the substantive content of the requirements; (b) the level of performance expected; or (c) the conditions under which a particular level of performance is expected; or some combination of these. Change is complicated. If the changes in performance requirements were the same for each person, but the within-person changes in performance varied by individual, then the rank ordering of people in a sample would also change over time. If the changes in performance requirements are not identical across people and there are interactive effects between individuals and the nature of the work role content changes, then changes in the rank ordering of people over time results from multiple sources. Given the current and future nature of employment, it is reasonable to expect that such things will happen, and are happening.

Much of I/O Psychology research and practice deals with planned interventions designed to enhance the individual knowledge, skill, and motivational determinants of performance, such as training and development, goal setting, feedback, rewards of various kinds, better supervision, etc. Such interventions, with performance requirements held constant could increase the group mean, or have differential effects across people, or both. The performance changes produced can be sizeable (e.g., Carlson, 1997; Katzell & Guzzo,1983; Locke & Latham, 2002).

Interventions designed to enhance individual performance determinants can also be implemented by the individual's own processes of self-management and regulation (Kanfer, Chen, & Pritchard, 2008; Lord, Diefendorff, Schmidt, & Hall, 2010). That is, as a result of an individual's self monitoring and self evaluation of their own performance against goals, additional training can be sought (perhaps from coworkers), different performance goals can be self-set, feedback can be sought, and self efficacy could change. The effectiveness of these self regulation processes could vary widely across people. In addition, if they have the latitude to do so, individuals could conduct their own job redesign (i.e., change the substantive content of their work role) to better utilize their knowledge and skills and increase the effort they are willing to spend. Academics are fond of doing that.

As noted by Sonnentag and Frese (this volume) individual performance can also change simply as a function of the passage of time. Of course, time is a surrogate for such things as: practice and experience, the aging process, or changes in emotional states (Beal et al., 2005).

It is most likely the case that for any given individual over any given period of time, many of these sources of performance change can be operating simultaneously. Performance dynamics are complex and attempts to model the complexity have taken many forms. For example, there could be characteristic growth curves for occupations (e.g., Murphy, 1989), differential growth curves across individuals (Hofmann, Jacobs, & Gerras, 1992; Ployhart & Hakel, 1998; Stewart & Nandkeolyar, 2006; Zyphur, Chaturvedi, & Arvey, 2008), both linear and nonlinear components for growth curves (Deadrick, Bennett, & Russell, 1997; Reb & Cropanzano, 2007; Sturman, 2003), and cyclical changes resulting from a number of self regulatory mechanisms (Lord et al., 2010). Empirical demonstrations of each of these have been established.

Active, Proactive, and Adaptive Performance

Perceptions that organizations face increasing amounts of uncertainty and that the substantive performance requirements of jobs and work roles are becoming more fluid and dynamic have produced increased interest in modeling performance capabilities that can deal with the increase in change and uncertainty. Frese (2008) uses the term *active performance* to describe individual capabilities for going beyond the organization's prescribed requirements and taking additional actions that will better result in achieving valued outcomes. Active performance means taking the initiative, hopefully in a useful way, in responding to the organization's goals. Griffen et al. (2007) use a very similar term, *proactive performance*, to describe, "the extent to which the individual takes self-directed actions to anticipate or initiate change in the work system or work role" (p. 329).

The concepts of "active" or "proactive" performance are quite similar to the older, and broader, notion of performance adaptability. The concept of adaptability has taken on many meanings in the literature (Ployhart & Bliese, 2006), but was given a big boost in I/O Psychology by Hesketh and Neal (1999) and by the widely cited study by Pulakos et al. (2000) that used a critical incident methodology to identify eight dimensions of adaptive performance. In its broadest sense, adaptability refers to being able to deal effectively with some combination of: changes in organization goals; changes in individual performance requirements; or changes in the performance environment, which have been either already identified or are anticipated. This would include using knowledge and skill learned in training to deal with performance requirements in the work role that were not incorporated in the training objectives. Kozlowski, Gully, Nason, and Smith (1999) refer to this as adaptive transfer.

Adaptability can be viewed either as a characteristic of performance itself (i.e., a category of performance actions), as do Hesketh and Neal (1999), or as a property of the individual (i.e., determinant of performance). Ployhart and Bliese (2006) present a thorough discussion of this issue and argue that it is more useful to model (i.e., identify the characteristics of) the adaptive individual then it is to propose adaptability as a distinct content dimension of performance. One reason is that the general definition of adaptability is not content domain specific, and it has been difficult to provide specifications for adaptability as a performance dimension. The best attempt is represented by the Pukalos et al. (2000) factors shown in Table 6. The factors were obtained by mining a large database of critical incidents of performance, and using systematic SME judgments to identify and categorize incidents reflective of adaptation.

Insert Table 6 about here

However, the interpretation of the factors as representing adaptability is not straightforward. To take the eight factors in order, factor one (Handling emergencies) could also be viewed as a subfactor of the technical performance dimension for certain jobs or work roles (e.g., medic, police officer, military personnel). Factors two (Handling stress), three (Solving problems), four (Dealing with unpredictable situations), and five (Learning tasks and procedures), are essentially domain general and could be viewed as general *skills* (i.e., performance determinants) that would support domain specific performance when performance requirements changed. Factor six (Interpersonal adaptability) seems to be part of the Peer Leadership factor discussed previously, and is consequently a domain specific performance

factor. Factor seven (Cultural adaptability) is also a domain specific performance subfactor that could be classified in the peer leadership dimension. Finally, Factor eight (Physical adaptability) can be viewed as a subfactor of the Initiative, Effort dimension in the revised model.

In general the Pulakos et al. (2000) taxonomy illustrates the difficulty of trying to treat components of adaptability as domain-specific dimensions of performance. Some of them fit, others seem not to. Ployhart and Bliese (2006) chose to treat the eight factors as part of the KSAO array that *predicts* adaptive responses to changes in substantive performance requirements.

Domain Specific Dynamics

In sum, it can be taken as a given that work role performance requirements change over time, sometimes over very short periods of time, as the result of factors such as changes in organization/work goals, increased competition, organization and work redesign, technological advances, personnel changes, changes in the organization's environment (e.g., increased government regulations), etc. If performance requirements change, can individuals change (i.e., adapt) to meet them, and at what level of proficiency? Also, can individuals change (i.e., adapt) in *anticipation* of changes in performance requirements? Many interventions (e.g., training, goal setting, reward systems) have been developed to help individuals adapt to changing performance requirements. Individuals can also actively engage in their own self management to develop additional knowledge and skill and to regulate the direction and intensity of their effort. If the freedom to do so exists, they can even proactively change their own performance responsibilities, or at least their relative emphases, so as to better utilize their own knowledge and skill or to better accomplish unit goals. Even if performance requirements remain relatively constant, individual performance can change over time as the result of practice, feedback,

increasing experience, cognitive and physical changes resulting from aging, or even fluctuation in affect or subjective well being.

These known dynamics of performance have resulted in an increasing body of research dealing with such issues as: (a) what individual differences predict or explain adaptability; (b) the extent to which performance correlates with performance over time (i.e., a between individuals effect); and (c) the patterns of intraindividual change across time, given relatively constant performance requirements. Consequently, one might ask what implications performance dynamics and individual adaptability have for substantive models of individual work performance. This is not the right question. A more appropriate question is what implications substantive models of performance have for studying performance dynamics and individual adaptability.

As noted by Ployhart and Bliese (2006) virtually all of the research and conversation dealing with performance dynamics and adaptation is in the context of technical task performance (i.e., Dimension one in the composite model, or with reference to "overall" performance (unspecified). However, the message in this chapter is that the latent structure of individual work performance is multidimensional, and the eight factors discussed previously represent a consensus developed over several decades. In terms of investigating such things as (a) the determinants of adaptive performance, (b) the correlation of performance with performance over time (and the reasons why it increases or decreases), (c) characteristic performance growth curves for occupations, (d) intra-individual growth curves, or (e) the nature of performance changes over time, the research should be *domain specific*. That is, the dynamics of technical performance and the dynamics of peer leadership, or management performance may not be the same. For example, for a particular occupation or work role, do

peer leadership and technical performance exhibit similar growth curves over time? What predicts adaptation to changes in technical performance requirements (Dimension one) versus adaptation to changes in requirements for initiative and persistence (Dimension three). To date, only one study of performance dynamics (Iles, Scott, & Judge, 2006) has moved outside the context of performance on the technical factor (i.e., Dimension one).

Implications for Measurement

The realities of performance criterion measurement are always complex and scary, but in contrast to the state of affairs in 1970, thorough reviews of criterion measurement issues, from a number of perspectives, are now available (e.g., see Bennett, Lance, & Woehr, 2006; Farr & Tippins, 2010; Scott & Reynolds, 2010). However, it is not the intent here to summarize the current state of criterion measurement research and practice, but only to note the critical implications of the substantive latent structure of performance, and its dynamic features, for performance measurement methods.

In general, there are three principal purposes for performance assessment.

1) For research purposes only, whether it is in a controlled situation (e.g., a training or laboratory environment) or in the naturally occurring work situation.
2) For developmental feedback, where the goal is to improve performance, not evaluate it, and the complexities and dynamics of feedback itself become relevant.
3) For operational administrative decision making where there is something "riding on it" for both the assessee and the assessors, and the goals of both assessor and assessee must be considered.

For any one of these three measurement purposes, both the substantive latent structure of performance and the dynamic properties of individual performance have implications for performance assessment. There are two overarching considerations. First, while virtually any estimated matrix of intercorrelations among multiple performance measures will yield a general factor, the substantive meaning of the general factor cannot be specified, except by aggregation of the substantive factors that load on it. Consequently, measurement must always focus on the substantive latent factors. Asking raters to rate overall performance is no solution. Although ratings of overall performance do show non-zero reliabilities and exhibit correlations with other variables, it is the rater who must first aggregate performance on the latent factors, in one way or another (e.g., Rotundo & Sackett, 2002), and in ways we may not like.

Second, performance on each of the substantive latent factors certainly may change over time, as the result of changes in the person, changes in the performance requirements, changes in the environmental conditions, or because of the interactions among them. Performance assessment must accommodate these potential dynamics. How it accommodates them is in part a function of how well they can be anticipated. It is also a function of the measurement purpose. For example, the assessment of occupational training achievement is intended to assess performance at a particular point in time (e.g., at the end of the course). In contrast, the assessment of transfer may be with reference to a particular date by which transfer should occur, if it's going to occur. Ignoring a host of other problems, such as those described by Murphy and Cleveland (1995), performance appraisal for compensation purposes could be intended to sum past performance on each factor over a particular period (e.g., six months or one year). In contrast, performance assessment for promotion purposes must try to anticipate both changes in performance requirements that will occur and the intra-individual growth curves on the latent

factors, such that the individual with the highest probability of excelling on the future performance requirements should be promoted. This is a complex set of considerations, even before the assessment goals and motives of the assessors and assessees are considered.

Performance Outcomes and Performance Effectiveness

This chapter has repeatedly made a distinction between performance, specified in terms of individual actions, and the outcomes of performance (i.e., effectiveness). This is not a distinction between "behavior" and "nonbehavior" or a distinction between "subjective" and "objective" measurement. It is a distinction between what an individual should do (i.e., what actions he or she should take), and do well, to optimize the individual's contribution to the goals of the organization, and subsequent assessments of the bottom line, or the organizationally relevant outcomes that are produced, at least in part, by individual performance. Again, *performance* measures, and *effectiveness* measures, could be either "subjective" or "objective." By definition, individual differences in a performance measure are the result of what individuals do, plus the inevitable measurement error and contamination error. Variation in indicators of effectiveness is a function of measurement error, contamination error, and individual performance (hopefully), as well as additional sources of variation that might not be regarded as contamination. For example, team effectiveness depends on the performance of the team members (including the leader, if there is one) and on the availability of various kinds of team resources as a function of budget constraints. Similarly for such things as per unit costs, sales, ROI, etc. If it can be demonstrated that variation in an indicator is solely a function of the individual's actions plus measurement error then, by definition, it is a measure of performance. The influence of contamination errors detract from the construct validity of the measure as an

indicator of individual performance. As assessments of performance, both subjective and objective measures can be contaminated with systematic sources of variation that are unwanted.

As already noted, work roles are (or should be) designed to contribute to organizational goal attainment (i.e., effectiveness). Consequently, if individual performance is multi-dimensional then a particular indicator of effectiveness is most likely a function of more than one performance dimension. Differential effects across dimensions are expected and should be investigated.

Performance Ratings (i.e., Subjective Measures)

As a method of performance measurement, "ratings" of one person by another have generated a substantial literature (e.g., Lance, Baxter, & Mahan, 2006) which will not be reviewed here. Only the main points will be summarized to provide a fuller context for discussing the implications of performance models for performance assessment.

There is no doubt that performance ratings are contaminated, not highly reliable, and assess varying degrees of valid systematic variance as a function of rater type, rater characteristics (within type), rater training, rating method, rating format (within method), and ratee characteristics unrelated to their performance, as well as a host of interactions among the various sources of variation. As a function of the measurement objective (i.e., for research, development, or operational appraisal), the goals of the rater and ratee also influence ratings (Murphy & Cleveland, 1995), and goal effects are more pronounced when operational appraisal is the measurement purpose. For example, for both good reasons and bad, the rater(s) may not want to rate anyone as a low performer. This obviously disturbs the rank ordering of the ratees on "true" performance and compromises performance measurement for research purposes.

In spite of the frequency and complexity of unwanted sources or variation, research also suggests the following conclusions.

1) If reasonably well constructed and implemented, ratings do reflect actual differences in individual performance (e.g., Conway, & Huffcutt, 1997), as well as the influence of measurement error and contamination error.
2) Although reliabilities (i.e., inter-rater agreement) are not high, they are sufficient to yield a consistent and meaningful pattern of correlations with predictor variables used in personnel selection (LeBreton, Burgess, Kaiser, Atchley, & James, 2003; Schmidt & Hunter, 1998). Meta-analytic estimates of single rater reliability for a single performance dimension range from .35 to .50. Using the mean of several raters and/or composite scores obtained from several individual dimensions will yield commensurably higher estimates. It is also true that the reliability estimates may be partially a function of systematic differences across ratees that are unrelated to performance, such as interpersonal liking (Conway, 1998).
3) Differences across rater types (e.g., supervisor, peer, subordinate) holding ratees constant, may be due to a variety of sources, one of which is that different rater types see different parts of a ratee's performance, in addition to those aspects of an individual's performance that are observed by all raters (e.g., see Lance, Teachout, & Donnelly, 1992). That is, all differences across rater types should not be assumed to be error.
4) Individual rating scales, when carefully developed to assess well specified factors, do yield meaningful factor structures, in spite of a general factor due

to common determinants and/or common method variance (Hoffman, Lance, Bynum, & Gentry, 2010; Viswesvaran et al., 2005).

5) There are various forms of rater training designed to improve rating accuracy, most often defined as the correspondence between the rater's judgment and a "true score" rating provided by experts or between a rater's assessment of a video-taped model and the model's scripted performance levels. The major kinds of rater training are:
    a) *Rater error training* designed to reduce some combination of halo, leniency, and central tendency.
    b) *Performance dimension training* intended to better explain to the rater the meaning and specifications for the performance dimensions to be rated.
    c) *Frame-of-reference training* which, in addition to familiarizing raters with the meaning of the dimensions to be rated, also attempt to calibrate the specifications for what constitutes different levels of performance on the dimension.
    d) *Behavioral observation training* deals with trying to improve the ways in which the potential rater observes, collects, and stores information on performance actions relevant for particular performance dimensions. Such training should lead to better recall of relevant information when the time for the actual rating comes.

Based on meta-analyses of the extant research literatures (Woehr & Huffcutt, 1994) a reasonable conclusion is that each of the rater training methods

produces gains in accuracy and reductions in the classic rating errors. Using two or more of the four methods in the same rater training program produces significant incremental gain compared to using just one method.

6) When performance rating is viewed through the lens of the person-perception literature some additional complications occur.
    a) Specific negative information about a ratee has a disproportionate weight on summary ratings. Raters sometimes use themselves as an anchor against which ratees are compared and there is most likely a recency effect (e.g., McIntyre & James, 1995).
    b) Raters may have very strong personal or implicit theories about the latent structure of performance for a particular work role (Borman, 1987), which may or may not correspond to the content of the dimensions to be rated that are specified by the organization. If the implicit models are strongly held, or even operate without conscientious awareness, then it would be difficult for rater training to succeed in getting raters to use the prescribed dimensions/scales, etc. We need to know a lot more about the dimensions the raters are <u>really</u> using when the ratees are assessed, even when measurement is for research purposes only. Do raters still use their implicit model? Do they still formulate rating goals (Murphy & Cleveland, 1995) that do not correspond to the researchers' goals?

In sum, the rating process is a complex activity about which much is known, and about which much more needs to be known, and there are at least three major implications of

substantive and dynamic properties of performance modeling for assessments of performance via ratings.

1) The content of rating scales should reflect the latent structure of performance. The specific scales may be more general or more specific, but they should be locatable in the eight factor structure described previously, even if highly specific technical, leadership, or team member responsibilities are selected as the dependent variable in an experiment. Ratings of "quality" or "productivity" do not meet this specification.
2) The time frame over which the rater is asked to aggregate information about a ratee should be made explicit, and should correspond to the measurement purpose.
3) Finally, while research on rater training has produced valuable results, we need to know much more about the latent structure and measurement goals the rater actually uses. There is really a dearth of research on the implicit, or personal, theories of performance held by raters in the work setting. Such research is needed both for the research context, and for the operational context where distortions of the measurement goal could be quite deliberate.

Subjective vs. Objective Measures

The need for, and the advantages of, objective measures of performance have been argued for a long time, most recently by Pulakos (2008) and Pulakos and O'Leary (2010). However, the distinctions between the two are not always perfectly clear (Muckler & Seven, 1992). For example, the choice of which objective indicators to use is inherently a subjective one and the estimated degree of construct validity possessed by an objective indicator for a specific

purpose is also a subjective judgment. Also, as noted previously, an objective indicator could be used either as an indicator of individual performance itself or as an indicator of the outcomes of performance, which by definition have legitimate determinants of variance that are not under the individual's control. When used as a measure of individual performance the indicator cannot (i.e., should not) be contaminated by significant sources of variance over which the individual has no control. What has now become a classic example is the measurement of teacher performance by assessing student gains in standardized achievement test scores. Many things effect such scores that cannot be controlled by the teacher (e.g., the student actually having parents at home).

There is a modest literature comparing subjective and objective indicators. The most frequently cited is a meta-analysis by Bommer, Johnson, Rich, Podsakoff, & MacKenzie, (1995) who reported an overall corrected correlation of .39 between subjective and objective measures. When the objective measure was "sales" it was slightly higher, .41. Generally, in these studies, the objective and subjective measures were not designed to assess the same performance factors. However, in a small number of instances, when both measures were intended to measure individual performance on the same performance dimension, the corrected correlation was .71, which indicates a much higher degree of correspondence, but still leaves room for significant contamination.

A previous meta-analysis by Heneman (1986) had explicitly examined the relationship between supervisory ratings and measures of results. Depending on the rating format, the corrected mean correlations ranged from .19 to .60. The lowest correlation was for ratings of "overall" performance. One way to look at these findings is that direct (but still contaminated)

measures of performance (i.e., the ratings) have reasonably high correlations with bottom line results, which is as it should be.

Pulakos and O'Leary (2010) tries to finesse the potential contamination of objective measures by proposing wider use of assessments of performance achievement against specific objectives, in the Locke and Latham (2002) way. Implicit in the setting of such objectives are provisions for choosing objectives that are indeed a function of the individual's actions. Consequently, the contamination frequently experienced when objective metrics are chosen off the shelf is, in theory, controlled at the outset. The "results" measures Pulakos describes are very close to what this chapter means by performance. The definition of performance used here does not stipulate that ratings are the only permissible assessment method.

The implications of a multidimensional substantive latent structure and the dynamic characteristics of performance described elsewhere in this volume are the same for objective or goal achievement measures as they are for subjective (rating) measures. That is, the substantive content of the indicators must be a valid representation (in the construct validity sense) of a specified performance dimension and the specified context for measurement must correspond to a time frame that is appropriate for the measurement purpose and consistent with what is known about the dynamics of that particular performance dimension.

In Conclusion

The chapter has belabored the point that at a particular level of specificity there is a virtual consensus about the latent variables that comprise individual performance at work. Going only a small step further, it is strongly suggested that this latent structure is invariant across work roles, organizational levels, organizational structures, organizational contexts, etc., etc., etc. This is <u>not</u> an argument that the importance or utility of individual differences on each

latent variable is the same across work roles, organizational levels, and situations. For example, not all jobs would have a significant management component (although this number may be larger than we think), and communication, as specified there, might be a critical component of only a small percentage of jobs.

The assertion of invariance is also not an argument that individuals won't adapt their performance behavior to changing contexts or situations. It is that such adaptations or differential emphases across situations are best described within the consensus latent structure framework.

Also, asserting that the latent structure of performance is invariant across levels of work roles is not synonymous with saying that the actions comprising high and low performance on the dimension are invariant. However, it comes close. When is technical performance expertise not good? When is expert communication not good? When is a lack of CWB not good? When is extra effort and initiative not good? When is it not good to be highly competent on the components of leadership and management, *even if* the relative utility of the subfactors varies across situations? The only possible exceptions are with regard the influence of culture. For some of the leadership subfactors, the same actions may have different effects on peers or subordinates as a function of cultural values. However, even here, the numbers of such cultural interactions may be relatively small (den Hartog, House, Hanges, & Ruiz-Quintanilla, 1999; Gibson & McDaniel, 2010).

This chapter also harped on the distinctions among the determinants of performance, performance itself, and the outcomes, or effectiveness, of performance. They are often confused, to the detriment of knowledge accumulation in I/O Psychology. For example, what is

a “competency?” What is adaptability? What is charisma? An inability to locate these concepts in an agreed upon latent structure does produce déjà vu all over again.

There is a consensus. We know what performance is, and how to distinguish it from its determinants and to its outcomes. More of our research and practice should be referenced to this consensus.

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Table 1

A Taxonomy of Higher-Order Performance Components

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1. Job-specific technical task proficiency

The first factor reflects the degree to which the individual performs the core substantive or technical tasks that are central to his or her job. They are the job-specific performance behaviors that distinguish the substantive content of one job from another. Constructing custom kitchens, doing word processing, designing computer architecture, driving a bus through Chicago traffic, and directing air traffic are examples.

2. Non-job-specific technical task proficiency

This factor reflects the situation that in virtually every organization, but perhaps not all, individuals are required to perform tasks that are not specific to their particular job. For example, in research universities the faculty must teach classes, advise students, make admission decisions, and serve on committees. All faculty must do these things, in addition to practicing chemistry, psychology, economics, or electrical engineering.

3. Written and oral communication task proficiency

Many jobs in the work force require the individual to make formal oral or written presentations to audiences that may vary from one to tens of thousands. For those jobs, the proficiency with which one can write or speak, independent of the correctness of the subject matter, is a critical component of performance.

4. Demonstrating effort

The fourth factor refers to the consistency of an individual's effort day by day, the frequency with which people will expend extra time when required, and the willingness to keep working under adverse conditions. It is a reflection of the degree to which individuals commit themselves to all job tasks, work at a high level of intensity, and keep working when it is cold, wet, or late.

5. Maintaining personal discipline (Counterproductive Work Behavior)

The fifth component is characterized by the degree to which negative behavior, such as alcohol and substance abuse at work, law or rules infractions, and excessive absenteeism, is avoided.

6. Facilitating peer and team performance

Factor 6 is defined as the degree to which the individual supports his or her peers, helps them with job problems, and acts as a de facto trainer. It also encompasses how well an individual facilitates group functioning by being a good model, keeping the group goal directed, and reinforcing participation by the other group members. Obviously, if the individual works alone, this component will have little importance.

7. Supervision/leadership

Proficiency in the supervisory component includes all the behaviors directed at influencing the performance of subordinates through fact-to-face interpersonal interaction and influence. Supervisors set goals for subordinates, they teach them more effective methods, they model the appropriate behaviors, and they reward, punish, or are supportive in appropriate ways. The distinction between this factor and the preceding one is a distinction between peer leadership and supervisory leadership.

8. Management/administration

This factor is intended to include the major elements in management that are distinct from direct supervision. It includes the performance behaviors directed at articulating goals for the unit or enterprise, organizing people and resources to work on them, monitoring progress, helping to solve problems or overcome crisis that stand in the way of goal accomplishment, controlling expenditures, obtaining additional resources, and representing the unit in dealings with other units, with other organizations, or with the public.

Table 2

Dimensions of Management Performance (from Borman & Brush 1993)

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1. Planning and organizing*:* formulating short-and long-term goals and objectives, forecasting possible problems for the unit/organization and developing strategies for addressing these problems.
2. Guiding, directing, and motivating subordinates and providing feedback*:* providing guidance and direction to subordinates.
3. Training, coaching, and developing subordinates**:** identifying training needs and assisting subordinates in improving their job skills.
4. Communicating effectively and keeping others informed both orally and in written form.
5. Representing the organization to customers and the public**:** contributing professional expertise in response to community needs including stockholders and government agencies.
6. Technical proficiency**:** keeping up-to-date technically, solving technical problems, providing technical advice to others in the organization.
7. Administration and paperwork**:** performing day-to-day administrative tasks such as reviewing reports, approving routine requests, and administering policies, as appropriate.
8. Maintaining good working relationships*:* developing and maintaining smooth and effective working relationships with superiors, peers, and subordinates.
9. Coordinating subordinates and other resources to get the job done**:** properly utilizing personnel and other resources to increase until and organizational effectiveness.
10. Decision making/problem solving**:** making sound and timely decisions, and developing effective solutions to organizational problems.
11. Staffing**:** maintaining staff and workforce; recruiting interviewing, selecting, transferring, and

promoting: maintaining an effective career development system.

12. Persisting to reach goals**:** persisting with extra effort to attain objectives and overcoming obstacles to get the job done.
13. Handling crises and stress**:** recognizing and responding effectively to crises and stress, addressing conflict appropriately.
14. Organizational commitment**:** working effectively with policies, procedures, rules: carrying out orders and directives.
15. Monitoring and controlling resources*:* controlling cost and personnel resources and monitoring and overseeing utilization of funds.
16. Delegating**:** assigning subordinates duties and responsibilities in line with their interests and abilities as well as the needs of the organization.
17. Selling/influencing**:** persuading others in the organization to accept good ideas, presenting own positions clearly and decisively.
18. Collecting and interpreting data**:** knowing what data are relevant to address a problem or issue; properly interpreting numerical data and other information

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Table 3

Yukl's 12 Factors

Clarifying Roles: assigning tasks and explaining responsibilities, objectives, and expectations.

Monitoring Operations: Monitoring progress and evaluating individual and unit performance.

*Short-Term Planning***:** determining how to use personnel and resources to accomplish a task efficiently.

Consulting: checking with people before making decisions that affect them, encouraging participation in decision making, and using the ideas and suggestions of others.

Supporting: showing consideration, sympathy, and support when someone is anxious, and providing encouragement when there is a difficult task.

Recognizing: providing praise and recognition for effective performance, special contributions, and performance improvements.

Developing: providing coaching, advice, and opportunities for skill development.

Empowering: allowing substantial responsibility and discretion, and trusting people to solve problems and make decisions without getting prior approval.

Envisioning Change: presenting an appealing description of desirable outcomes that can be achieved by the unit with great enthusiasm and conviction.

Taking Risks for Change: taking personal risks and making sacrifices to encourage and promote desirable change in the organization.

Encouraging Innovative Thinking: challenging people to question their assumptions about the work and consider better ways to do it.

External Monitoring: analyzing information about events, trends, and changes in the external environment to identify threats and opportunities for the organizational unit.

Table 4

A Proposed Set of Basic Factors Comprising Leadership and Management Performance

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Leadership Performance Factors

1. *Consideration, Support, Person-Centered*: Providing recognition and encouragement, being supportive when under stress, giving constructive feedback, helping others with difficult tasks, building networks with and among others.
2. *Initiating Structure, Guiding, Directing*: Providing task assignments, explaining work methods, clarifying work roles, providing tools, critical knowledge, and technical support.
3. *Goal Emphasis:* Encouraging enthusiasm and commitment for the group/organization goals, emphasizing the important missions to be accomplished.
4. *Empowerment, Facilitation*: Delegating authority and responsibilities to others, encouraging participation, allowing discretion in decision making.
5. *Training, Coaching*: One-on-one coaching and instruction regarding how to accomplish job tasks, how to interact with other people, and how to deal with obstacles and constraints.
6. *Serving as a Model*: Models appropriate behavior regarding interacting with others, acting unselfishly, working under adverse conditions, reacting to crisis or stress, working to achieve goals, showing confidence and enthusiasm, and exhibiting principled and ethical behavior.

Management Performance Factors

1. *Goal Setting, Planning, Organizing, and Budgeting*: Formulating operative goals; determining how to use personnel and resources (financial, technical, logistical) to accomplish goals; anticipating potential problems; estimating costs.

2. *Coordination*: Actively coordinating the work of two or more units, or the work of several work groups within a unit. Scheduling operations. Includes negotiating and cooperating with other units.
3. *Monitoring Unit Effectiveness*: Evaluating progress and effectiveness of units against goals: monitoring costs and resource consumption.
4. *External Representation*: Representing the organization to those not in the organization (e.g., customers, clients, government agencies, nongovernment organizations, the "public"); maintaining a positive organizational image: serving the community; answering questions and complaints from outside the organization.
5. *Staffing*: Procuring and providing for the development of human resources. Not one-on-one coaching, training, or guidance; but providing the human resources the organization or unit needs.
6. *Decision Making, Problem Solving, and Strategic Innovation*: Making sound and timely decisions about major goals and strategies. Includes gathering information from both inside and outside the organization, staying connected to important information sources, and forecasting future trends and formulating goals (innovative or potentially profitable) to take advantage of them.
7. *Administration*: Performing day-to-day administrative tasks, keeping accurate records, documenting actions. analyzing routine information, and making information available in a timely manner.
8. *Commitment and Compliance*: Compliance with the policies, procedures, rules, and regulations of the organization. Full commitment to orders and directives, together with loyal constructive criticism of organizational policies and actions.

Table 5

A taxonomy of components of individual performance as a team member (from Olson, 2000)

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1. *Fulfilling Team-Related Task Responsibilities*. Takes ownership for and completes assigned tasks according to committed timelines. Does not pass work off to others or take shortcuts that compromise quality.
2. *Peer Leadership: Initiating Structure***.** Helps to define goals and organize and prioritize tasks. Generates plans and strategies for task completion, identifies resources needed to meet team goals, and shares resources or guides team members to resources to help them complete their tasks.
3. *Peer Leadership: Consideration*. Provides social support and empathy, offers verbal encouragement, and acts respectfully toward other team members, especially when tasks or situations are difficult or demanding. Facilitates cohesion and effective working relationships between team members by acting honestly, communicating openly, and helping to manage or resolve conflicts. Does not embarrass team members in front of others, act impatiently, or blame others.
4. *Training Team Members/Sharing Task Information*. Shares information with team members, provides task explanations and demonstrations, answers questions, and gives timely and constructive feedback to team members. Does not withhold information about team-related tasks.
5. *Team Member Helping/Backup Relief*. Fills in or covers for team members who are overwhelmed or absent. Rearranges own schedule and demonstrates flexibility to help other team members. Puts in extra time and effort to help team members without being asked and

without complaining. Does not engage in off-task activities when other team members could use help.

6. *Monitoring Performance*. Observes and is knowledgeable about the performance of other team members. Pays attention to what individual team members are doing. Evaluates progress of self and others and recognizes when team members may need help.
7. *Monitoring Team Effectiveness*. Pays attention to the team's situation, including relevant conditions, procedures, policies, resources, systems, equipment, technology, and level of team accomplishment. Notices and identifies ream-relevant problems and obstacles.
8. *Individual Contributions to Problem Solving*. Helps in identifying alternative solutions, strategies, or options for dealing with problems, obstacles, or decisions. Helps in evaluating courses of action, and takes preventive measures to avoid future problems.
9. *Individual Contributions to Workload Distribution/Coordination*. Contributes to and encourages discussion of work distribution, workload balance, potential workload problems, and the sequencing of team member activities. Coordinates own task activities with other team members. Does not make unnecessary request or overload other team members.

Table 6

Eight Dimensions of Adaptive Performance (adapted from Pukalos et al., 2000)

	Title	Definition
1.	Handling emergencies or crisis situations	Reacting appropriately in life threatening, dangerous, or emergency situations; maintaining emotional control and objectivity while keeping focus on the situation and taking action.
2.	Handling work stress	Remaining composed when faced with difficult circumstances or a highly demanding workload or schedule; not overreacting to unexpected news or situations; managing frustration well by directing effort to constructive solutions rather than blaming others; acting as a calming and settling influence to whom others look for guidance.
3.	Solving problems creatively	Employing unique types of analyses and generating new, innovative ideas in complex areas; integrating seemingly unrelated information and developing creative solutions; entertaining wide-ranging possibilities others may miss; developing innovative methods of obtaining or using resources.
4.	Dealing with uncertain and unpredictable work situations	Taking effective action when necessary; readily and easily changing gears in response to unpredictable or unexpected events and circumstances; effectively adjusting plans, goals, actions, or priorities to deal with changing situations.
5.	Learning work tasks, technologies, and procedures	Demonstrating enthusiasm for learning new approaches and technologies; doing what is necessary to keep knowledge and skills current; quickly and proficiently learning new methods or

		how to perform previously unlearned tasks; anticipating changes in work demands; taking action to improve work performance deficiencies.
6.	Demonstrating interpersonal adaptability	Being flexible and open-minded when dealing with others; listening to and considering others' viewpoints and opinions and altering own opinion when it is appropriate to do so; being open and accepting of negative or developmental feedback regarding work; working well and developing effective relationships with highly diverse personalities.
7.	Demonstrating cultural adaptability	Taking action to learn about and understand the climate, orientation, needs, and values of other groups, organizations, or cultures; integrating well into and being comfortable with different values, customs, and cultures; willingly adjusting behavior or appearance as necessary to show respect for others' values and customs.
8.	Demonstrating physically oriented adaptability	Adjusting to challenging environmental states such as extreme heat, humidity, cold, or dirtiness; frequently pushing self physically to complete strenuous or demanding tasks, adjusting weight and muscular strength or becoming proficient in performing physical tasks as necessary for the job.