

Chapter Four

As new employees gradually become acclimated to their work environments, they eventually reach a point where they are capable of engaging in behavior that contributes positively to organizational goals and objectives. As examples, an accountant becomes capable of handling the tax returns of several clients of an accounting firm, a retail store employee becomes capable of operating a cash register with minimal supervision, and a scientist becomes capable of independently carrying out his or her own original research investigations. The behaviors described in the examples may be thought of collectively as *productive behavior*, which is the focus of this chapter.

After thoroughly defining productive behavior, the chapter shifts to a discussion of job performance. This is, by far, the most common form of productive behavior in organizations, and organizational psychologists have devoted considerable attention to its study. Much work, for example, has been devoted to simply understanding what is meant by job performance, and in determining performance dimensions that are common across jobs.

After addressing models describing the different aspects of basic job performance, we then address the critical issue of how job performance has been measured by organizational psychologists. The effective measurement of job performance is critical if we hope to better understand the predictors of employees who excel versus falter at work. Organizational psychologists encounter a number of challenges in trying to effectively

Productive Behavior in Organizations



measure job performance, including such issues as all employees being given high ratings (restriction of range) and the performance of employees varying over time as a result of personal and environmental factors.

Having addressed the basic dimensions of job performance and how to assess these dimensions, we then move to the important area of the causes of job performance. Considerable work has been devoted to determining the relative contribution of abilities, skills, motivation, personality, and situational factors in explaining performance differences across employees. As researchers have found, the interaction among all of

these predictors is complex. Fortunately, the amount of research done allows us to draw some fairly definitive conclusions about what predicts employees who perform well versus poorly.

The chapter then addresses the second major form of productive behavior at work, which is when employees do things that are not required in their formal job descriptions. For example, organizations may at times need employees to provide assistance to each other, even though this activity is not part of their formal job descriptions. These types of behaviors have been defined as *organizational citizenship behaviors* (OCBs). Research into OCB has focused primarily on understanding the factors that lead employees to perform OCBs.

Finally, we address a third form of productive behavior at work: innovation. For example, to remain competitive, a computer manufacturer may need employees to consistently design new computer models that have innovative designs and features. There is considerable research on creativity in the general psychological literature, but organizational psychologists have also examined organization-specific innovation and creativity. Like other forms of productive behavior, innovation and creativity result from a complex interaction between characteristics of individual employees and the organizational environments in which they work.

DEFINING PRODUCTIVE BEHAVIOR

For the purposes of this chapter, *productive behavior* is defined as employee behavior that contributes positively to the goals and objectives of the organization. When an employee first enters an organization, there is a transition period during which he or she is not

contributing positively to the organization. For example, a newly hired management consultant may not be generating any billable hours for his or her consulting firm. From an organizational perspective, a new employee is actually a liability because he or she is typically being compensated during this unproductive period. The organization is betting, however, that, over time, the new employee will reach a point where his or her behavior contributes positively to the organization. When productive behavior is viewed in financial terms, it represents the point at which the organization begins to achieve some return on the investment it has made in the new employee. In the sections that follow, we take an in-depth look at three of the most common forms of productive behavior in organizations: job performance, organizational citizenship behavior (OCB), and innovation.

JOB PERFORMANCE

Defining Job Performance

Job performance is a deceptively simple term. At the most general level, it can be defined simply as "all of the behaviors employees engage in while at work." Unfortunately, this is a rather imprecise definition because employees often engage in behaviors at work that have little or nothing to do with job-specific tasks. For example, in a study of enlisted military personnel, Bialek, Zapf, and McGuire (1977) found that less than half of the work time of these individuals was spent performing tasks that were part of their job descriptions. Thus, if performance were defined simply in terms of employee behaviors performed while at work, many behaviors that have no relation to organizational goals would be included (e.g., talking with coworkers about last

night's game). On the other hand, if job performance were confined only to behaviors associated with the technical aspects of the basic tasks employees perform, much productive behavior in the workplace would be excluded.

According to Campbell (1990), job performance represents behaviors employees engage in while at work that contribute to organizational goals. This definition is obviously more precise than simply defining performance as all behaviors that employees perform at work. It is also not too restrictive; job performance is not confined only to behaviors directly associated with task performance. One other important aspect of this definition is that job performance represents behaviors that are formally evaluated by the organization as part of the employee's responsibilities and duties. This aspect of the definition distinguishes job performance from the other forms of productive behavior we address later in the chapter.

In defining job performance, it is important that we distinguish it from several related terms. According to Campbell (1990), job performance should be distinguished from effectiveness, productivity, and utility. *Effectiveness* is defined as the evaluation of the results of an employee's job performance. This is an important distinction because employee effectiveness is determined by more than just job performance. For example, an employee who is engaging in many forms of productive behavior may still receive a poor performance rating (a measure of effectiveness) because of performance rating errors, or simply because he or she is not well liked by the person assigned to do the rating.

Productivity is closely related to both performance and effectiveness, but it is different because productivity takes into account the cost of achieving a given level of performance

or effectiveness. For example, two salespeople may perform equally well and ultimately generate the same level of commissions in a given year. However, if one of these individuals is able to achieve this level of sales at a lower cost than the other, he or she would be considered the more productive of the two. A term that is closely related to productivity, and is often used interchangeably, is *efficiency*. This refers to the level of performance that can be achieved in a given period of time. If a person is highly efficient, he or she is achieving a lot in a relatively short period of time. Given that "time is money," one can consider efficiency a form of productivity. Some organizations, in fact, are highly concerned with efficiency. United Parcel Service (UPS), for example, places a strong emphasis on the efficiency of the truck drivers who deliver packages to customers.

Finally, *utility* represents the value of a given level of performance, effectiveness, or productivity for the organization. This definition may seem redundant alongside the description of effectiveness. Utility is somewhat different, however. An employee may achieve a high level of effectiveness (i.e., the results of his or her performance are judged to be positive), but utility still could be low. An organization simply may not place a high value on the level of effectiveness achieved by the employee. In large research universities, for example, faculty research productivity and grant writing are typically given higher priority than teaching performance. Consequently, it is possible to be denied tenure at such universities even though one is a superb teacher.

At first glance, distinguishing among performance, effectiveness, productivity, efficiency, and utility may appear to be a rather trivial exercise. On the contrary, these distinctions are extremely important if one is

interested in understanding and ultimately predicting performance. Many studies in organizational psychology purport to predict "performance" when they are actually predicting "effectiveness" or "productivity" (Jex, 1998). Employees typically have more control over performance than they do over effectiveness or productivity, so studies often fail to adequately explain performance differences among employees. This gap may ultimately lead to erroneous conclusions about the determinants of performance differences.

Models of Job Performance

Efforts to model job performance are aimed at identifying a set of performance dimensions that are common to all jobs. Given the vast number of jobs that exist in the world of work, trying to determine a relatively small number of dimensions underlying job performance is a challenging task. However, modeling job performance is vitally important because so much research and practice in organizational psychology centers around performance prediction. A major reason for studying many of the variables that we do (e.g., motivation, leadership, stress) is their potential impact on performance. Even though models of job performance contain many different dimensions, two major categories of job performance can be found across models: *in-role (task) performance* and *extra-role (contextual) performance* (Borman & Motowidlo, 1993; Conway, 1999). In-role performance refers to performance on the technical aspects of an employee's job. For example, a nurse would be required to perform specific tasks such as drawing blood, ensuring proper delivery of medication, and so on. Likewise, a truck driver has to know how to effectively load and handle cargo, operate complex machinery, and perform other technical types of tasks. Extra-role per-

formance refers to nontechnical abilities such as being able to communicate effectively, exhibiting motivation and enthusiasm at work, and being a good team member.

The distinction between in-role and extra-role performance can be seen in Campbell's (1990,1994) comprehensive model of job performance. Campbell developed his model of job performance by analyzing a diverse set of jobs performed by soldiers in the U.S. Army. Based on an analysis of the performance dimensions of multiple jobs, he argued that performance on all jobs can be broken down into the eight dimensions listed in Table 4.1. We would argue that the first two dimensions in Campbell's model reflect the importance of in-role or task performance. The first dimension is *job-specific task proficiency*, and it includes behaviors associated with the core tasks that are unique to a particular job. For example, behaviors such as counting money, recording deposits, and cashing checks would represent some of the job-specific tasks of a bank teller. On the other hand, examples of the core job tasks of a teacher at a day-care center may include scheduling activities, maintaining discipline, and communicating with parents.

The second dimension reflective of in-role performance in this model is *nonjob-specific task proficiency*. This dimension is represented by behaviors that must be performed by some or all members of an organization, but that are not specific to a particular job. For example, the primary job-related activities of a college professor are teaching and research in a given substantive area (e.g., physics). However, regardless of one's specialty, most professors are required to perform common tasks such as advising students, serving on university committees, writing grants, and occasionally representing the university at ceremonial

TABLE 4.1
Campbell's (1990, 1994) Model of Job Performance According to the In-Role Extra-Role Distinction

Performance Dimensions	Description
<i>In-Role</i>	
1. Job-Specific-Task Proficiency	Technical aspects of job performance
2. Non-Job-Specific Task Proficiency	Common tasks performed by different employees
<i>Extra-Role</i>	
3. Written and Oral Communication	Ability to write and communicate effectively
4. Demonstrating Effort	Going the "extra mile" at work
5. Maintaining Personal Discipline	Refraining from negative behaviors, following through on tasks
6. Facilitating peer and team performance	Being a good team member; working well with other members
7. Supervision/Leadership	Effectively supervising and leading others
8. Management/Administration	Effectively organizing and keeping track of critical information

events such as commencement. In the military, soldiers must not only be able to carry out the technical aspects of their job (e.g., fire patriot missiles, ensure adequate quantities of helmets and ammunition), but they must also be proficient on tasks common to all soldiers (e.g., knowing how to react upon a chemical weapons attack, knowing how to read a map and navigate in an unfamiliar environment).

Both the first and second dimensions of Campbell's model reflect tasks that must be performed within a given occupational position and therefore represent in-role performance. The remaining six dimensions address the extra-role or contextual dimensions of performance that tend to cut across different jobs.

The third dimension is labeled *written and oral communication task proficiency*. Inclusion of this dimension acknowledges that incumbents in most jobs must communicate either in writing or verbally. For example, a high school teacher and an attorney obviously perform very different job-specific tasks. Both, however, must periodically communicate, both orally and in writing, in order to do their jobs effec-

tively. A high school teacher may need to communicate with parents regarding students' progress, and an attorney may need to communicate with a client in order to verify the accuracy of information to be contained in a legal document such as a trust or divorce agreement.

The fourth and fifth dimensions are labeled *demonstrating effort* and *maintaining personal discipline*, respectively. Demonstrating effort represents an employee's level of motivation and commitment to his or her job tasks. Regardless of whether one performs the job of dentist, firefighter, or professional athlete, it is necessary to exhibit commitment to one's job tasks. It may also be necessary at times to demonstrate a willingness to persist in order to accomplish difficult or unpleasant tasks. Professional athletes, at times, may have to *play through* nagging injuries in order to help their teams. Maintaining personal discipline is abiding by specified rules and refraining from negative behaviors such as substance abuse or other forms of unproductive behavior. Taken together, these two dimensions essentially represent the degree to which an employee is a *good citizen* in the workplace.

The sixth dimension is labeled *facilitating peer and team performance*. One aspect of this dimension is the degree to which an employee is helpful to his or her coworkers when they need assistance. This could involve assisting a coworker who is having trouble meeting an impending deadline, or perhaps just providing encouragement or boosting the spirits of others. This dimension also represents the degree to which an employee is a *team player*, or is working to further the goals of his or her work group. As Campbell (1990) points out, this dimension would obviously have little relevance if one worked in complete isolation. Today, when so many companies place strong emphasis on teamwork, working alone is more the exception than the rule (see Comment 4.1).

The seventh and eighth dimensions are labeled *supervision/leadership* and *management/administration*, respectively. Both of these dimensions represent aspects of job performance that obviously apply only to jobs that carry some supervisory responsibilities. Whether one is a supervisor in a retail outlet, a hospital, or a factory, certain common behaviors are required. For example, supervisors in most settings help employees set goals, teach employees effective work methods, and more generally attempt to model good work habits. Many supervisory positions also require a multitude of administrative tasks such as monitoring and controlling expenditures, obtaining additional resources, and representing one's unit within an organization.

When we consider each of these dimensions of job performance, it becomes clear that all eight dimensions would not be relevant for all jobs. In fact, Campbell (1990) argued that only three (core task proficiency, demonstrating effort, and maintenance of personal discipline) are major performance components for all jobs. This model is still

quite useful because it provides a common metric for examining performance across jobs. For example, using this model, we could compare employees from two completely different jobs on the dimension of demonstrating effort. In addition, the performance of different types of jobs could be compared across the dimensions. Having such a common metric is tremendously helpful in trying to understand the general determinants of job performance.

A second model of job performance was proposed by Murphy (1994). His model was specifically developed to facilitate an understanding of job performance in the U.S. Navy, but the performance dimensions are also relevant to many civilian jobs. As can be seen in Table 4.2, this model breaks performance down into four dimensions instead of eight. The first of these is labeled *task-oriented behaviors*, which closely mirrors the job-specific task proficiency dimension in Campbell's (1990, 1994) model. It is also reasonable to assume that, for supervisory jobs, this label would include the dimensions related to supervision and management/administration. In essence, this represents performing the major tasks associated with one's job. This dimension is also the only component of Murphy's model that refers explicitly to in-role performance. The remaining dimensions refer to extra-role performance. The second dimension, labeled *interpersonally oriented behaviors*, represents all of the interpersonal transactions that occur on the job. These might include a retail store clerk answering a customer's question, a nurse consulting a doctor about a patient's medication, or an auto mechanic talking to a service manager about a repair that must be done on a car. Because many interpersonal transactions in the workplace are task-related, this dimension mirrors facilitating peer and team performance in J. Campbell's

COMMENT 4.1

BEING A GOOD TEAM MEMBER

OF THE EIGHT dimensions of job performance described in Campbell's (1990) model, one of the most interesting, and potentially most important, is "Facilitating peer and team performance." One obvious reason is that more and more organizations are making use of *teams* for both projects and even as a basis for organizational structure. Given this greater use of teams, it is not surprising that much recent organizational research has focused on team effectiveness. However, one aspect of team effectiveness that has not been given great attention is identifying the characteristics of a good team member. According to Susan Wheelan, in her book *Creating Effective Teams: A Guide for Members and Leaders*, there are a number of behavioral characteristics of effective team members. These include:

- not blaming others for group problems
- encouraging the process of goal, role, and task clarification
- encouraging the adoption of an open communication structure
- promoting an appropriate ratio of task and supportive communications
- promoting the use of effective problem-solving and decision-making procedures
- encouraging the establishment of norms that support productivity, innovation, and freedom of expression

- going along with norms that promote group effectiveness and productivity
- promoting group cohesion and cooperation
- encouraging the use of effective conflict-management strategies
- interacting with others outside of the group, in ways that promote group integration and cooperation within the larger organizational context
- supporting the leader's efforts to facilitate group goal achievement

This list is obviously not meant to be exhaustive, but it illustrates the specific behaviors that contribute to effective team performance. As is evident from the list, most of these behaviors transcend technical specialties and even organization types. This is consistent with Campbell's notion that there is a general set of performance dimensions.

Source: J. P. Campbell. (1990). Modeling the performance prediction problem in industrial and organizational psychology. In M. D. Dunnette and L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 1, pp. 687-732). Palo Alto, CA: Consulting Psychologists Press; and S. A. Wheelan. (1999). *Creating effective teams: A guide for members and leaders*. Thousand Oaks, CA: Sage.

TABLE 4.2

Murphy's (1994) Model of Job Performance According to the In-Role Extra-Role Distinction

Performance Dimensions	Description
<i>In-Role</i>	
1. Task-Oriented Behaviors	Performing major tasks associated with job
<i>Extra-Role</i>	
2. Interpersonally oriented Behaviors	All interpersonal transactions that occur on job
3. Down-time Behaviors	Behaviors outside of work that affect job performance (e.g. drug/alcohol use, extra jobs)
4. Destructive/Hazardous Behaviors	Safety violations, sabotage, accidents

model. Not all interpersonal transactions in the workplace are task related. For example, employees may start off Monday mornings with *small talk* about what they did over the weekend. This dimension therefore also represents the extent to which employees generally maintain positive interpersonal relations with coworkers. This aspect of job behavior is not explicitly part of Campbell's model, although it is clearly an important aspect of performance (see Comment 4.2). The distinction between task-oriented performance and performance that occurs in the context of the job has also been highlighted by Van Scotter and Motowidlo (1996).

COMMENT 4.2

MAINTAINING POSITIVE INTERPERSONAL RELATIONS AT WORK

MAINTAINING POSITIVE INTERPERSONAL relationships with others is a performance dimension that is rarely noticed unless someone is unable to do it. Research over the years has shown, relatively consistently, that interpersonal conflict is perceived negatively by employees and leads to a number of negative outcomes (e.g., Spector & Jex, 1998). Specifically, when there are frequent interpersonal conflicts in the work environment, employees tend to dislike their jobs and feel anxious and tense about coming to work.

Another aspect of interpersonal relations that has been explored less frequently, but may be just as important, is the impact of interpersonal relations on promotions in organizations. Having worked in different organizations and taught many courses over the years, a frequent theme we have heard is that relatively few individuals fail to get promoted due to lack of technical skills. More often than not, a lack of mobility in organizations is due

The third dimension, *down-time behaviors*, represents behaviors that may lead the job incumbent to be absent from the worksite. These include counterproductive behaviors, such as drug and alcohol abuse, and other violations of the law. They are considered aspects of performance because an employee with a substance abuse problem, for example, may be frequently absent from work and is therefore not performing well. A closely related set of behaviors is included in the fourth category, *destructive/hazardous behaviors*. These would include such things as safety violations, accidents, and sabotage. The down-time behaviors and destructive/

to an inability to get along with others. In fact, many organizations invest considerable amounts of money in individual coaching programs that are often aimed at individuals who have a great deal of technical prowess but are lacking in interpersonal skills. Why is it so important to get along with others in organizations? The likely reason is that much of what gets done in any organization gets done through people. If someone has a hard time getting along with others, it is quite possible that he or she will have a hard time gaining others' cooperation and assistance—factors that are often necessary to get things done in organizations.

Source: P. E. Spector and S. M. Jex. (1998). Development of four self-report measures of job stressors and strain: Interpersonal Conflict at Work Scale, Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory. *Journal of Occupational Health Psychology*, 3, 356–367.

hazardous behaviors dimensions are most closely related to the dimension of maintaining personal discipline in Campbell's (1990, 1994) model. In some cases, though, destructive/hazardous behaviors may result from a lack of effort (e.g., not taking the time to put on safety equipment), so this dimension may overlap with the demonstrating effort dimension in Campbell's model.

Compared to Campbell's (1990, 1994) eight-dimension model, Murphy's (1994) four-dimension model is somewhat less useful, for two reasons. First, this model was developed to explain job performance—specifically, among U.S. Navy personnel. Campbell's objective was to describe performance in a broader spectrum of jobs, although his model could certainly be used to describe job performance among military personnel. Second, the performance dimensions described by Murphy are considerably broader than those described by Campbell. Because they are so broad, it is more difficult to determine the factors that led to differences among employees on these performance dimensions. Despite these disadvantages, this model again provides us with a set of dimensions for comparing performance across jobs. The importance of looking for cross-job dimensions of performance has also been emphasized by Viswesvaran (2002), who has argued that most models of job performance include a more general measure of performance followed by more specific measures depending on the theorist. Although not all researchers agree on the exact subdimensions of job performance, there is a general recognition that job performance is more than just the technical aspects of performing narrowly defined tasks, and that how employees interact with others and in other ways contribute to the organization need to be considered.

MEASUREMENT OF JOB PERFORMANCE

The prior section dealt with models organizational psychologists have developed to capture the important dimensions on which job performance should be assessed. The next critical step in understanding what causes employees to perform well or poorly is developing reliable and valid measures of job performance. Having good measures of job performance allows us to better understand those variables related to performance. In the present section we examine how job performance has been measured, as well as challenges researchers have faced in developing reliable and valid measures of job performance. Specifically, three areas are discussed: (1) measures of job performance, (2) restriction in the variability of job performance, and (3) instability in job performance over time.

Measures of Job Performance

By definition, job performance is behavior, so job performance is rarely measured directly. More typically, what is measured is some external assessment of job performance. According to Murphy (1989a), performance can be assessed in eight different ways: (1) paper/pencil tests, (2) job skills tests, (3) on-site hands-on testing, (4) off-site hands-on testing, (5) high-fidelity simulations, (6) symbolic simulations, (7) task ratings, and (8) global ratings. By far, the two most common methods of performance assessment in organizations are ratings of employees' performance on specific tasks and ratings of overall performance on the job.

An example of the latter performance rating was used by Van Dyne and LePine (1998). These authors assessed in-role and extra-role performance by having

employees, their coworkers, and supervisors respond to items assessing different aspects of performance. Sample items from the measure are presented in Table 4.3. In-role performance was assessed by items referring to the extent that employees met their performance expectations and performed well at the tasks that made up the employees' job. Extra-role performance was assessed through nontask behaviors that nevertheless are expected of the employee, such as helping others in his or her group and attending scheduled functions.

The literature on performance rating is vast (e.g., Landy & Farr, 1980; Murphy, 2004; Murphy & Cleveland, 1990), and will not be reviewed in detail here. However, two general points can be made. First, there are many potential sources of error in performance ratings. For example, a rater may not have an adequate opportunity to observe performance, ratings may be biased by the degree to which the rater likes or dislikes the ratee, or different raters may employ different internal performance standards. These are just three of many potential sources of error. Rating errors are problematic because they ultimately mask meaningful differences in actual job performance, and thus may weaken the relationship between job performance and other variables.

TABLE 4.3

Van Dyne and LePine's Measure of In-Role and Extra-Role Performance

Sample of In-Role Performance Items

1. "This particular worker fulfills the responsibilities specified in his/her job description"
2. "This particular worker performs the tasks that are expected as part of the job"

Sample of Extra-Role Performance Items

3. "This particular worker assists others in this group with their work for the benefit of the group"
4. "This particular worker speaks up in the group with ideas for new projects or changes in procedure"
5. "This particular worker attends functions that help the work group"

Source: Van Dyne, L.V., & LePine, J.A. (1998). Helping and voice extra-role behaviors: Evidence of construct and predictive validity. *Academy of Management Journal*, 41, 108-119.

A second point is that steps can be taken to reduce error in performance ratings. For example, rater training has been shown to increase accuracy in performance ratings (Pulakos, 1984). Another way to circumvent the problems with performance ratings is to seek more *objective* performance measures, such as output produced or sales commissions. Unfortunately, these more objective performance measures may have serious flaws of their own. The most obvious flaw is that most are really measures of effectiveness or productivity and not actual job performance (Campbell, 1990). Another disadvantage is that employees may lack control over objective performance indicators. For example, even a very skilled real estate salesperson would probably not sell many houses if the mortgage interest rates rose to 20%.

Some researchers have attempted to deal with the biases inherent in performance ratings by constructing *behaviorally anchored rating scales* that clearly reflect those employee behaviors that constitute poor, average, and superior performance (see Campbell, 1990). For example, consider a paralegal's ability to prepare a legal brief for a courtroom session. Instead of rating the paralegal on a scale from "very poor" to "very good," a behaviorally anchored rating scale would include such terms as "fails to

incorporate necessary details into the legal brief" and "produces a report that summarizes the major points of the brief without additional unnecessary material." Anchoring the scale with specific behaviors is presumed to take some of the subjectivity out of the performance assessment.

The major point of considering performance measurement is simply that we must always keep in mind that performance is not the same thing as the measurement of performance. Furthermore, because measuring anything will inevitably involve some degree of error, our understanding of performance and our ability to predict it will always remain imperfect.

Restriction in the Variability of Job Performance

Researchers face a number of challenges in adequately assessing job performance among a population of employees. We first consider the issue of restriction in the variability of performance among employees. For a variety of reasons, the variability in performance levels within organizations is often restricted. To better understand restriction in performance variability, it is useful to distinguish between *artifactual restriction* in performance variability and *true restriction*. Artifactual restriction in performance variability results from factors such as errors in performance ratings or the performance measurement system. Even though there may be real differences among employees' levels of job performance, these may be masked because of an error in the performance rating process. For example, employees within an organization may really differ from each other in how well they are performing, with some doing very well and some doing very poorly. However, supervi-

sors may give all employees high ratings because of a concern they will be laid off if ratings are less than stellar. True restriction in performance variability, on the other hand, occurs when measures of performance are relatively accurate but there is a true lack of meaningful variation in actual job performance. It may simply be the case that all employees are performing at a high or low level within an organization because of such factors as leadership or the inherent difficulty of the tasks being performed. In this section, reasons for true restriction in performance variability are discussed.

According to Peters and O'Connor (1988), there are four reasons why variation in individual performance may be restricted. First, organizations simply may have very low performance standards. If organizations do not expect much, this standard will tend to discourage high levels of performance, and employees will gravitate toward *minimally acceptable* levels of performance. The end result of this process is often a great reduction in the variability of performance. A good example is the commonly held stereotype that performance standards for government employees are low. Many readers have probably heard the expression "Good enough for government work," which implies that work must only be done at a minimally acceptable level.

A second factor, which is related to low performance standards, is that organizations vary in the degree to which they value high levels of individual job performance. Organizations either may fail to recognize the contributions of those who perform well or tolerate individuals who consistently perform poorly. Some organizations may even inadvertently create situations in which low levels of performance are actually rewarded, and high levels of performance are punished. For example, in

many organizations, employees who perform well are often *rewarded* with greater responsibility and heavier workloads, but receive no additional compensation or promotions. The current authors have also seen managers rid themselves of incompetent employees by recommending that they be promoted to positions in other departments.

A third factor restricting performance variability is the degree to which organizations excuse employees for low levels of performance. This factor is related to low performance standards but operates somewhat differently. According to Peters and O'Connor (1988), organizations may develop what they describe as a "culture of justification" (p. 117); that is, employees are routinely allowed to "explain away" instances of poor performance. A somewhat more irreverent way of describing this is the familiar acronym *CYA*, otherwise known as "cover your a**!" Such a culture takes away the incentive to perform well and ultimately restricts performance to mediocre levels.

A final cause of restriction in performance variability is variation in organizational resources. Having limited resources often leads to situational constraints that ultimately reduces the variability in performance (Peters & O'Connor, 1980). For example, it is difficult for an auto mechanic to perform well if he or she has no tools. On the other hand, if organizational resources are extremely plentiful, this may also reduce the variability in performance. In this case, everyone in an organization may perform up to his or her full potential and, as a result, the variability in performance will be restricted.

A somewhat different explanation as to why the variation in actual performance levels may be restricted is that selection and retention in organizations are not random processes. According to Johns (1991), most organizations require that employees pass

through relatively rigorous screening processes before they are hired. For example, those who wish to become police officers typically must pass through a series of tests before even being selected for academy training. In many other occupations, such as law, medicine, and engineering, much of this screening is done by universities during professional training. As a result of these screening processes, the variation in skill and ability levels among employees may be quite restricted, which may ultimately restrict the variability in job performance. Employees who perform poorly or who simply do not fit well with an organization's culture often select themselves out and leave voluntarily (Ployhart, Weekly, & Baughman, 2006; Schneider, 1987). Like formal socialization processes, this again tends to create uniformity in job performance.

Despite all of the factors that may restrict performance variability, empirical evidence suggests that performance variability in organizations is still meaningful. For example, Schmidt and Hunter (1998) point out that even though performance variability in organizations is somewhat restricted, a substantial portion still remains. If this were not the case, it is unlikely that selection tools such as cognitive ability tests, personality measures, and biodata instruments would be related to performance.

Instability in Job Performance over Time

A second challenge in assessing the job performance of employees includes the extent to which performance is stable versus fluctuating. There has been considerable debate, over the years, concerning the relative stability of performance criterion measures (e.g., Ackerman, 1989; Austin, Humphreys, &

Hulin, 1989; Barrett, Caldwell, & Alexander, 1985; Henry & Hulin, 1987, 1989). Some contributors have claimed that performance is relatively stable over time; many others have argued (quite forcefully at times) that performance is more dynamic. The weight of the evidence seems to support the position that performance criteria are dynamic. For example, Deadrick and Madigan (1990) examined the stability in performance of sewing machine operators over time and found that the correlations between performance levels were quite strong when the time interval was very short. However, the correlation between performance at one point in time and 23 weeks later was considerably weaker. Thus, because of a variety of factors, employee performance tends to fluctuate over time. In fact, this inconsistency may explain why people are so impressed when a high

level of consistency is displayed. In sports, for example, great honors are bestowed on athletes for breaking records that indicate consistency and longevity (see Comment 4.3).

Ployhart and Hakel (1998) pointed out that although evidence supports the dynamic nature of performance, correlations between levels of performance at different points in time provide little insight into how the performance of individuals changes over time. Furthermore, we know very little about variables that predict distinct patterns of change in performance over time. To address this issue, these researchers examined 8 years' worth of performance criterion data from a sample of 303 securities analysts.

Using a statistical procedure known as *latent growth curve modeling*, which allows the modeling of patterns of change over time,

COMMENT 4.3

THE INTERACTION BETWEEN DECLARATIVE AND PROCEDURAL KNOWLEDGE

IS DECLARATIVE KNOWLEDGE a necessary precondition to obtaining procedural knowledge? That is, do you have to know about something in order to know how to do something? For some tasks, it is fairly obvious that declarative knowledge is a precursor to procedural knowledge. For example, it would be very difficult to fly a jet airplane if one had absolutely no knowledge of jet propulsion.

For some types of human performance, however, it is unclear whether declarative knowledge must precede procedural knowledge. For example, it is not unusual for athletes to understand how to do things but not necessarily know the principles behind what they are doing (perhaps that's where Nike

came up with the slogan "Just Do It"). There are also instances of great musicians who are unable to read music but are able to play musical compositions based on their auditory memory.

Perhaps those instances when one can achieve procedural knowledge without first obtaining declarative knowledge are relatively rare. However, it would be useful to develop a greater understanding of the interaction between these two forms of knowledge. Many training and educational programs are based on the premise that declarative knowledge must come first, so a greater understanding of this interaction may pave the way for interesting new training and educational methods.

they found that, on average, performance among these securities analysts approximated a basic learning curve. Initially, performance rose steadily; eventually, it reached a leveling-off point. They also found that, within the sample, not all curves were the same. For example, there were differences in how quickly performance initially accelerated. There were also differences in how quickly performance reached a leveling-off point. Most importantly, they found that patterns of change in performance over time were predictable; for example, those who described themselves as persuasive and empathetic exhibited the quickest initial rate of acceleration in sales. They also found that these two variables predicted whether there would be a drop in performance. Those who described themselves as persuasive were more likely to exhibit a drop in performance early in the second year of employment, and those describing themselves as empathetic were less likely to exhibit this drop. At a practical level, this finding suggests that exhibiting empathy toward clients may be a more effective sales technique than trying to persuade them.

Ployhart and Hakel's (1998) study provides important insight into the issue of performance stability. At least for the sample employed, it suggests that although performance is not stable over time, it does not fluctuate randomly. More importantly, this study suggests that it is possible to identify and statistically model patterns of change in performance over time. It also suggests that there may be individual differences that predict patterns of performance variability over time. An important practical implication of this possibility is that an organization may be able to identify a desired temporal pattern of performance and select individuals who are likely to exhibit that pattern. For example, it

may be possible to screen out individuals whose performance peaks very quickly and then declines.

Job performance variability over time can also be explained by characteristics of the job itself. Murphy (1989b) proposed that jobs are characterized by what he termed *maintenance* stages and *transition* stages. During maintenance stages, the tasks comprising the job become somewhat routine and automatic for the job incumbent. For example, once a person learns to drive an automobile, the steps necessary to perform this task become so routine that little conscious thought is required. When this level of proficiency is achieved, it is as if people are on *automatic pilot* when they are performing the task. This may explain why, during morning commutes over the years, the author has witnessed drivers applying makeup, eating breakfast, or reading newspapers!

When a job is in the transition stage, the tasks comprising the job become novel and the incumbent cannot rely on automatic routines while performing them. Transition periods in jobs may occur during the introduction of new technology or perhaps when a major change in laws impacts the job being performed. For example, due to new manufacturing technology, the jobs of many production employees have changed dramatically in the past 10 years (Parker & Wall, 1998). Also, many employees in nursing homes and other long-term healthcare facilities have recently experienced profound changes in their jobs because of changes in Medicare billing procedures (Campbell, 1999).

Murphy (1989b) notes that, because transition periods require adjustments on the part of the employee, they lead to some level of disruption and instability in performance. Another consequence of transition points is that general cognitive ability is a more

important determinant of performance during these periods (compared to performance during the maintenance period). This makes sense, given the well-established finding that general cognitive ability is a stronger predictor of performance in complex jobs. If this is true, it follows that general cognitive ability should be more strongly related to performance during these periods. Unfortunately, this proposition has not yet received empirical scrutiny.

More recent research by Sturman, Chermie, and Cashen (2005) has also emphasized the importance of job characteristics in examining the stability of performance over time. These authors also examined whether job performance was assessed with subjective ratings or more objective indicators. The authors found that test-retest correlations for job performance over the course of a year were highest ($r = .83$) for jobs that were low in complexity and assessed through subjective ratings, and were lowest ($r = .50$) for jobs that were high in complexity and assessed through objective indicators. The authors pointed out that even in the latter case the correlation between job performance assessed at different time periods was relatively high.

DETERMINANTS OF JOB PERFORMANCE

Having discussed how organizational psychologists define and measure job performance, we now consider those factors predictive of whether employees perform well or poorly. In trying to explain behavior such as job performance, organizational psychologists have at times engaged in heated debates over the relative impact of the person versus the environment (e.g., nature versus nurture). In such cases, these debates are resolved by the rather commonsense notion

that most behaviors are the result of a complex interaction between characteristics of people and characteristics of the environment.

Generally speaking, differences in job performance are caused by the interaction among ability, motivation, and situational factors that may facilitate or inhibit performance. Thus, for an employee to perform well, he or she must possess job-relevant abilities. Ability alone will not lead to high levels of performance, though, unless the employee is motivated to perform well and does not experience severe situational constraints. Of course, in some cases, a high level of one of these three factors will compensate for low levels of the others (e.g., a highly motivated employee will overcome situational constraints), but usually all three conditions are necessary.

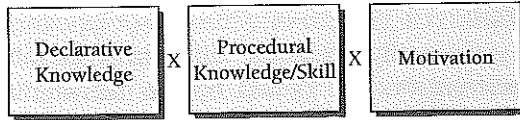
This section begins with an examination of a well-known theoretical model of the determinants of job performance, followed by an exploration of empirical evidence on determinants of job performance. Given the vast number of factors that influence job performance, the exploration of the empirical literature will currently be limited to individual differences or characteristics of persons that explain performance differences. Environmental factors that influence job performance (e.g., leadership, motivation, situational constraints) will be covered in more detail in subsequent chapters.

Campbell's Model of Job Performance

Campbell (1990, 1994) proposed that job performance is determined by the interaction among *declarative knowledge*, *procedural knowledge/skill*, and *motivation* (see Fig. 4.1).

FIGURE 4.1

Campbell's (1990, 1994) Model of the Determinants of Job Performance



Adapted from J. P. Campbell. (1990). Modeling the performance prediction problem in industrial and organizational psychology. In M. D. Dunnette and L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 1, pp. 687–732). Palo Alto, CA: Consulting Psychologists Press. Modified and reproduced by permission of the publisher.

Declarative knowledge is simply knowledge about facts and things. An employee with a high level of declarative knowledge has a good understanding of the tasks that are required by his or her job. As an example, a medical technician with a high level of declarative knowledge knows the steps necessary to draw blood from a patient. According to Campbell, differences in declarative knowledge may be due to a number of factors, such as ability, personality, interests, education, training, experience, and the interaction between employee aptitudes and training. Many forms of professional and academic training, at least in the early stages, stress the acquisition of declarative knowledge. The first year of medical school, for example, requires considerable memorization of information about human anatomy and physiology.

Once an employee has achieved a high degree of declarative knowledge, he or she is in a position to acquire a high level of procedural knowledge/skill. When this is achieved, the employee understands not only what needs to be done but also how to do it, and is able to carry out these behaviors. A medical technician who has achieved a high level of procedural skill or knowledge not only knows the steps involved in draw-

ing blood, but is also able to perform this task. According to Campbell, differences in the acquisition of procedural knowledge/skill are determined by the same factors that lead to differences in declarative knowledge. In academic and professional training, the acquisition of procedural knowledge/skill tends to be emphasized at later stages or, typically, after a sufficient degree of declarative knowledge has been acquired. Medical training, for example, becomes more hands on during the third and fourth years.

When an employee has reached a high level of procedural knowledge/skill, he or she is capable of high levels of job performance. Stated differently, the employee has performance potential. Whether this potential actually leads to high levels of job performance depends on motivation. According to Campbell (1990, 1994), motivation reflects an employee's choices regarding (1) whether to expend effort directed at job performance, (2) the level of effort to expend, and (3) whether to persist with the level of effort that is chosen. Thus, even if an employee has achieved a very high level of procedural knowledge/skill, low motivation may prevent the skill from being translated into a high level of performance. For example, a highly capable employee may simply decide not to put forth any effort, may not put in enough effort, or may put forth the effort but lack the willingness to sustain it over time.

The primary value of Campbell's (1990, 1994) model is that it states, in precise terms, the factors within the person that determine performance, and the interplay among those factors. Furthermore, it has received empirical support (e.g., McCloy, Campbell, & Cudeck, 1994). The model also reminds us that the interaction among the factors that determine performance is complex. For example, a high level of motivation may

compensate for a moderate level of procedural knowledge/skill. On the other hand, a low level of motivation may negate the potential benefits of a high level of procedural knowledge/skill. This model can also be used to generate ideas and hypotheses about performance and its determinants (see Comment 4.4).

Given all the factors that have been proposed to explain differences in job performance, a logical question may be: What is the relative contribution of all of these factors to performance? Indeed, so much research has examined this question over the years that a comprehensive review of this literature is clearly beyond the scope of the chapter. It

COMMENT 4.4

WHAT IS JOB EXPERIENCE?

JOB EXPERIENCE is a variable that is used so frequently in organizational psychology that it is easy to take its importance for granted. Typically, most researchers don't pay too much attention to job experience because they are measuring it either for descriptive purposes, or to use as a control variable in statistical analyses. In the vast majority of studies, experience is measured simply as the number of months or years that a person has been employed in a particular job or in a particular organization.

Tesluk and Jacobs (1998) pointed out that organizational or job tenure is not likely to capture the complexity of job experience. They point out, for example, that the same length of tenure may be very different in terms of both the density and the timing of job-related experiences. A good example of the density dimension would be a surgeon performing in a war zone. This individual would typically be doing surgeries around the clock, and would thus acquire more surgical experi-

ence in three months than a surgeon at a regular civilian hospital would acquire in twice the time. A good example of timing would be a manager's having to take over a poorly performing department immediately after completing his or her training. Such an experience would undoubtedly have a greater impact on this individual now than it would later in his or her career.

General Mental Ability as a Predictor of Job Performance

By far the one individual difference variable that has received the most attention as a determinant of job performance is *general mental ability*. Numerous definitions have been offered, but the common element in most definitions of general mental ability is that it reflects an individual's capacity to

Many organizations recognize complexity of experience and attempt to structure the assignments of high-potential managers in a way that maximizes their developmental value. For the most part, however, researchers have treated experience in a very simplistic fashion. In the future, this is likely to be a very fruitful area of research in organizational psychology.

Source: P. E. Tesluk and R. R. Jacobs. (1998). Toward an integrated model of work experience. *Personnel Psychology*, 51, 321–355.

process and comprehend information (Murphy, 1989b; Waldman & Spangler, 1989). Research has consistently shown, over many years, that general mental ability predicts performance over a wide range of jobs and occupations. The most comprehensive demonstration of this was a meta-analysis conducted by Schmidt and Hunter (1998), in which nearly 85 years of research findings on various predictors of job performance were summarized. Their analysis indicated that the corrected correlation between general mental ability and performance across jobs was .51—that is, over 25% of the variance in performance across jobs is due to differences in general mental ability. A recent meta-analysis of 283 independent samples conducted in the United Kingdom also revealed validity coefficients between general mental ability and performance in the .5 to .6 range (Bertua, Anderson, & Salgado, 2005). In addition, recent research suggests that meta-analyses of the relationship between general mental ability and job performance have not sufficiently adjusted for the problem of range restriction in mental ability (i.e., individuals very low in mental ability are likely not to be hired), and may actually underestimate the correlation by 25% (Hunter, Schmidt, & Huy, 2006). When one considers the numerous other factors that can influence job performance (e.g., motivation, leadership, situational constraints), the fact that mental ability is such a strong predictor is truly impressive.

Why is general mental ability such a key to explaining differences in job performance? According to Schmidt, Hunter, and Outerbridge (1986), the intermediate link between general mental ability and job performance is *job knowledge*; that is, employees who possess higher levels of general mental ability tend to develop a greater understanding of their job duties than individuals with lower levels. For

example, a very intelligent airplane pilot would likely possess greater knowledge of all that goes into flying a plane than a pilot who was less intelligent. In essence, those with high levels of mental ability are able to extract more relevant information from the job environment than those with lower levels of general mental ability.

Another consistent finding in this literature is that general mental ability is a better predictor of performance in jobs that have a high level of complexity compared to jobs lower in complexity (Bertua et al., 2005; Hunter, Schmidt, & Judiesch, 1990). Although there is no standard definition, most researchers agree that job complexity is strongly influenced by the mental demands and information-processing requirements placed on job incumbents (Wood, 1986). For example, the job of a corporate executive requires the use of *higher-order* cognitive skills such as planning and synthesizing large amounts of information. On the other hand, the job of a convenience store clerk typically requires what might be considered *lower-level* cognitive skills such as following established guidelines and procedures. General mental ability predicts good performance in complex jobs, primarily because such jobs place higher-level information-processing demands on incumbents. Thus, compared to those with lower levels, incumbents who possess high levels of general mental ability are better able to meet those demands.

Although mental ability is a strong predictor of job performance, researchers have also found that there are large ethnic group differences on such tests, which may contribute to biased selection and subsequent litigation (Van Rooy, Dilchert, & Viswesvaran, 2006). Therefore, researchers have become interested in assessing other forms of intelligence, such as emotional

intelligence. Baron, Handley, and Fund (2006) describe emotional intelligence as being able to understand and express yourself; understand and relate with others; manage and control emotions; change, adapt, and solve problems of a personal and interpersonal nature; and finally the ability to generate positive mood and to be self-motivated. Although emotional intelligence shows fewer ethnic group differences, meta-analyses reveal it only accounts for 2% of the variance in performance after controlling for general intelligence (Van Rooy & Viswesvaran, 2004).

Job Experience as a Predictor of Job Performance

Job experience is an individual difference variable that has been examined frequently as a general predictor of job performance. It would seem logical that a person with a higher level of relevant job experience would perform better than others who possess little or no job experience. Empirical evidence has, in fact, shown that experience, like general mental ability, is positively related to job performance over a wide range of job types (McDaniel, Schmidt, & Hunter, 1988; Schmidt & Hunter, 1998). Like general mental ability, the relation between experience and job performance appears to be mediated by job knowledge (Schmidt et al., 1986). Researchers have also found that the relationship between experience and job performance depends on job complexity. For example, McDaniel et al. (1988) found that experience was a better predictor of performance in low- rather than high-complexity jobs. They attributed this difference to the fact that experience is really the only preparation for low-complexity jobs. For example, there is no way to learn how to perform the job of convenience store clerk

other than by actually working at it. With high-complexity jobs, however, education may compensate for a lack of experience. Note that the form of this interaction effect is exactly the opposite of that found for general mental ability.

There is also evidence that the importance of job experience in explaining performance differences tends to diminish over time. For example, McDaniel et al. (1988) found that the correlation between experience and performance was strongest in samples in which the average level of job experience was less than 3 years, but the correlation was considerably less for samples in which the average level of experience was higher. This suggests that there is a *law of diminishing returns* with respect to the influence of job experience on job performance.

Research on the influence of job experience on job performance should be viewed cautiously, however, because most studies have measured job experience as the number of years in an organization or job. Quinones Ford, and Teachout (1995) pointed out that job experience can be viewed not only in terms of quantity but also quality. Years of experience is a quantitative measure of experience. If job experience is viewed qualitatively, this has to do with the job tasks performed and the relevance of situations one has been exposed to on the job. For example, if an individual has several years of experience as an accountant, but has conducted few field audits, that person will not necessarily perform better in an auditing position than an individual who has less general accounting experience.

Building on the work of Quinones et al. (1995), Tesluk and Jacobs (1998) proposed that job experience can also be viewed in terms of both the density and timing of job-related experiences. When experience has high density, the employee is exposed

to many *developmental experiences* in a relative short period of time. These may include increased responsibilities, and perhaps even being required to perform under very difficult conditions. The timing dimension has to do with the fact that certain experiences might have more, or less, developmental value, depending on whether they occur at the beginning, middle, or latter stage of one's career. For most employees, mistakes have a greater developmental impact when they occur at the early (as opposed to later) stages of one's career. The more important point from the work of Quinones et al. (1995) and Tesluk and Jacobs (1998) is that job experience is a complex variable, and much theoretical and empirical work needs to be done before we fully understand and appreciate it (see Comment 4.5).

COMMENT 4.5

CONSISTENCY OF PERFORMANCE IN BASEBALL

SOME OF THE most highly regarded records in the world of sports reflect consistency of performance. In baseball, for example, a record that has stood for over 50 years is New York Yankee Joe DiMaggio's 56-game hitting streak. More recently, Cal Ripken, Jr., of the Baltimore Orioles, made history by playing in 2,632 consecutive games. Why are these two records so highly regarded? DiMaggio's record is remarkable when one considers all of the factors that work against obtaining a base hit in that number of consecutive games. One would think that the skill of pitchers at the major league level, minor injuries, and general fatigue would make such a streak highly unlikely. Thus, this record is a reflection of DiMaggio's skill as a hitter, and his determination.

One reason Ripken's streak is so unusual is simply that few players last that long at the

Personality as a Predictor of Job Performance

Along with general mental ability and job experience, there has been a recent wave of research on personality as a predictor of job performance. The personality trait consistently found to predict job performance over a wide range of jobs is *conscientiousness* (Barrick & Mount, 1991, 2005; Dudley, Orvis, Lebiecki, & Cortina, 2006; Ones, Viswesvaran, & Schmidt, 1993; Thoresen, Bradley, Bliese, & Thoresen, 2004). A person who is conscientious can be described as dependable, goal oriented, planful, and achievement oriented. Barrick and Mount (1991) found that the corrected correlation between conscientiousness and performance, across a wide variety of jobs, was .22. Ones et al.

major league level. It is also unusual for players to avoid serious injuries for that period of time. Furthermore, because of the number of games played in a major league season (162), and minor injuries, most players want an occasional day off. Thus, Ripken's streak is a reflection of a number of factors, including consistency in performance, rigorous off-season conditioning, and a high level of motivation.

What do these baseball records tell us about stability and consistency of performance? If anything, they highlight the fact that stability and consistency, over time, are more the exception than the rule. Because of external constraints, fluctuations in motivation, and just plain good/bad luck, performance in most domains is often quite variable. However, when it does remain consistent for a long period of time, it is often highly rewarded.

(1993) found that the mean corrected correlation between integrity tests (which many presume are measures of conscientiousness) and job performance, across jobs, was .34.

There are three explanations for why conscientiousness is a robust predictor of performance. According to Schmidt and Hunter (1998), the variable that links conscientiousness and job performance is job knowledge. Recall that this was the same variable proposed to mediate the relation between both general mental ability and experience and performance. In this case, however, the process has to do primarily with motivation rather than with ability. Individuals who are highly conscientious presumably put time and effort into acquiring high levels of job knowledge, and hence will perform better than those who are less conscientious.

Another explanation for the relation between conscientiousness and performance is goal setting. In a study of sales personnel, Barrick, Mount, and Strauss (1993) found that goal setting mediated the relation between conscientiousness and job performance. Specifically, those who were highly conscientious exhibited a greater tendency for setting performance-related goals than those who were less conscientious. This proclivity for setting goals facilitated, in turn, higher levels of job performance. This adds to the findings of Schmidt and Hunter (1998) regarding why highly conscientious people tend to perform well, regardless of the job.

A final explanation for the relationship between conscientiousness and performance is motivational. Barrick, Stewart, and Piotrowski (2002) found that conscientiousness was related to performance ratings of employees through the employee striving to accomplish more at work and reach a higher

status. After these motivational variables were controlled, conscientiousness no longer predicted job performance. This research supports a model in which conscientiousness gives rise to increased motivation, which leads employees to perform better.

It is also worth noting that, in addition to conscientiousness, other personality traits are more likely to predict performance in particular types of jobs. Barrick and Mount (2005) point out that the personality traits of *extraversion* and *agreeableness* (the tendency to avoid conflict and be easy to get along with) are especially predictive of job performance for jobs requiring employees to interact with other people on a frequent basis. *Openness to experience*, the tendency to be open to new ideas and experiences, is an important predictor for jobs that require employees to continuously adapt to change.

A more recent approach to personality and job performance involves combining traits into a larger factor that predicts job performance. Erez and Judge (2001) argued that *self-esteem*, *locus of control*, *generalized self-efficacy*, and *neuroticism* all tap a person's *core self-evaluation*, which they define as "basic conclusions or bottom-line evaluations that represent one's appraisal of people, events, or things in relation to oneself" (p. 1,270). Self-esteem is a person's overall attitude toward himself or herself. Locus of control refers to whether individuals believe the causes of their behavior are either due to their own actions (internal locus of control) or the environment (external locus of control). Generalized self-efficacy refers to whether people think they can generally accomplish the tasks they face. Finally, neuroticism refers to a lack of emotional stability and the tendency to experience negative affective states. Neuroticism contributes negatively to an individual's core self-evaluation.

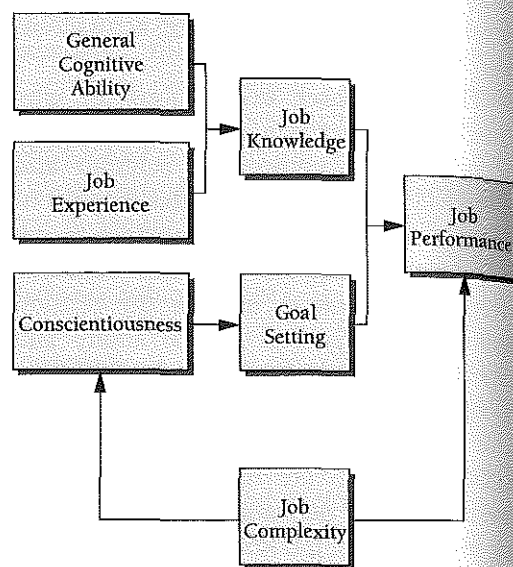
Erez and Judge (2001) found that the four separate personality traits all contributed to the one larger trait of core self-evaluation. More importantly, the authors found that this larger trait was predictive of performance in both student samples ($r = .35$) and insurance salesmen ($r = .34$ for sales volume and $r = .44$ for rated performance). The correlations between core self-evaluations and performance were greater than any of the correlations between the four traits that made up the larger trait. Finally, core self-evaluations are related to performance even when controlling for conscientiousness. In a recent review, Judge, Van Vianen, and De Pater (2004) provided support for the core self-evaluation personality trait, and also provided a shorter scale that can assess the variable.

Summarizing the state of knowledge regarding the predictors of job performance, the most important individual difference variables influencing job performance are general mental ability, job experience, and conscientiousness. Furthermore, the primary mechanisms linking these variables to job performance are job knowledge and, to a lesser extent, goal setting and motivation. Finally, many of these relations appear to be influenced by job complexity. Figure 4.2 summarizes these propositions.

Readers will undoubtedly note that Figure 4.2 does not contain a number of situational factors such as motivation, leadership, and organizational climate. This was done largely for pedagogical reasons, because the link between these situational factors and performance will be covered in later chapters. It is important to note, however, that although few studies have examined the joint effect of individual differences and situational factors, it has been demonstrated empirically that both do contribute to job performance (see Barrick & Mount, 2005;

FIGURE 4.2

Summary of the Most Important Individual Difference Predicators of Job Performance



Colarelli, Dean, & Konstans, 1987; Day & Bedeian, 1991). Thus, organizations must do more than simply hire smart, experienced, conscientious people in order to facilitate high levels of employee performance.

ORGANIZATIONAL CITIZENSHIP BEHAVIOR

The second form of productive behavior to be discussed in this chapter is organizational citizenship behavior (OCB) (Organ, 1977, 1994). Generally speaking, OCB refers to behaviors that are not part of employees' formal job descriptions (e.g., helping a co-worker who has been absent; being courteous to others), or behaviors for which employees are not formally rewarded. Even though such behaviors are not formally mandated by organizations, in the aggregate they are believed to enhance the effectiveness of groups and organizations (George & Bettenhausen, 1990; Katz & Kahn, 1978; Podsak-off, Ahearne, &

MacKenzie, 1997). Recall from the previous models of job performance (Campbell, 1990, 1994; Murphy, 1994) the distinction between in-role and extra-role performance, and how extra-role performance represented those aspects of job performance not tied to specific tasks relevant to one's primary area of expertise (e.g., teamwork, dedication, communication ability). The distinction between extra-role performance and OCB is rather blurred. Technically, the key distinction is that OCBs are not evaluated as part of the formal appraisal system used to assess employees. In addition, the antecedents of OCB are different from those of in-role and extra-role performance.

One way of classifying OCB has been adopted by Organ (1977, 1994), where OCB in organizations can be categorized into five different types:

1. *Altruism* represents what we typically think of as "helping behaviors" in the workplace. This form of OCB is sometimes referred to as *prosocial behavior*. An example of altruism would be an employee's voluntarily assisting a co-worker who is having difficulty operating his or her computer.
2. *Courtesy* represents behaviors that reflect basic consideration for others. An example of behavior within this category would be periodically "touching base" with one's coworkers to find out how things are going, or letting others know where one can be reached.
3. *Sportsmanship* is different from other forms of OCB because it is typically exhibited by not engaging in certain forms of behaviors, such as complaining about problems or minor inconveniences.
4. *Conscientiousness* involves being a good citizen in the workplace and doing things such as arriving on time for meetings.

5. *Civic virtue* is somewhat different from the others because the target is the organization—or, in some cases, the work group—rather than another individual. An example of this form of OCB would be attending a charitable function sponsored by the organization.

Although this classification scheme represents a reasonable way of *carving up* OCB, other researchers have organized OCB differently. For example, Organ and Konovsky (1989) distinguished OCB that helped others at work when they had a problem (altruism) from following rules and doing whatever is needed to get the job done (compliance). Finally, McNeely and Meglino (1994) distinguished OCBs that are directed at helping others (OCBI) from those that are directed toward the organization as a whole (OCBS). These latter types of distinctions are typically guided by a researcher's specific interest in comparing the predictors of different types of OCB.

Reasons for OCB

Why do employees engage in OCB? There are actually three different explanations. According to the first, the primary determinant is positive affect, typically in the form of job satisfaction. Theoretically, this view comes from a fairly long history of social-psychological research showing that a positive mood increases the frequency of helping and of other forms of spontaneous prosocial behavior (see George & Brief, 1992). Furthermore, positive mood and helping behavior are actually mutually reinforcing because helping others usually makes people feel good. Bettencourt, Gwinner, and Meuter (2001) found that positive job attitudes

were related to different types of OCB in service-oriented employees. Researchers have also found that job involvement, a correlate of job satisfaction, is positively correlated with supervisor ratings of OCB (Diefendorff, Brown, & Kamin, 2002).

A second explanation for OCB has to do with cognitive evaluations of the fairness of employees' treatment by an organization. This view is theoretically rooted in *Equity Theory* (Adams, 1965), which states that employees evaluate their work situations by cognitively comparing their inputs to the organization with the outcomes they receive in return. (Equity Theory will be covered in more detail in Chapter 8.) If employees perceive that the organization is treating them fairly or justly, then they are likely to reciprocate the organization by engaging in OCB. It seems, however, that certain forms of fairness or justice predict OCB better than others. For example, Moorman (1991) found that the best predictor of OCB was *interactional justice*, or the manner in which supervisors treat employees as they carry out organizational policies and procedures. In contrast, other studies have found that *procedural justice* is a better predictor of OCB than is *distributive justice* (e.g., Konovsky & Pugh, 1990). Procedural justice refers to employees' perceptions of the fairness of procedures used to make decisions such as pay raises; distributive justice refers to perceptions of fairness of the outcomes one receives as a result of those procedures. Recent research suggests that perceptions of organizational justice are especially important predictors of OCB for employees who are classified as *entitled* (Blakely, Andrews, & Moorman, 2005). These types of employees like their outcomes to be greater than other employees even when inputs are comparable. These individuals may be especially likely to base their decision to engage in OCB on the extent

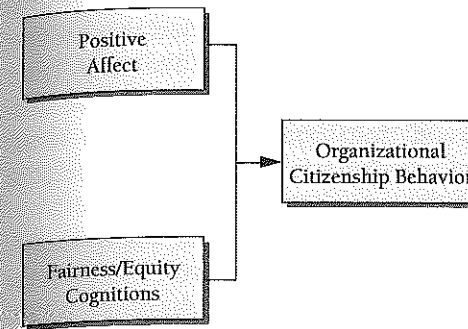
to which they feel they are being treated fairly by the organization.

A third explanation for OCB is that it is due to dispositions. According to this viewpoint, certain personality traits predispose individuals to engage in OCB. In other words, some people are naturally more helpful than others are. Compared to the first two explanations of OCB, the dispositional viewpoint has received much less attention in the OCB literature because proponents of this view have been vague as to the specific personality traits that should be related to OCB. This has been a criticism of dispositional explanations of other forms of employee attitudes and behavior (Davis-Blake & Pfeffer, 1989).

Other than affect, fairness, and dispositions, a handful of other factors have been proposed to explain the performance of OCB, although none of these has received extensive empirical scrutiny. For example, Chattopadhyay (1998) found evidence that OCB is predicted by the demographic composition of work groups. It has also been found that the performance of OCB may be influenced by factors such as job-related stressors (Jex, 1998; Jex, Adams, Bachrach, & Rosol, 2001) and employees' level of organizational commitment (Williams & Anderson, 1991). Wang, Law, Hackett, Wang, and Chen (2005) have recently shown that leadership is an important predictor of OCB. Using employees from organizations throughout the People's Republic of China, these authors found that positive perceptions of and trust in leaders were related to a greater tendency to perform OCB. Finally, Finkelstein and Penner (2004) found that motives surrounding the desire to help coworkers and possessing a citizenship-role identity (e.g., "helping the company is an important part of who I am") were more strongly related to OCB than motives associated with impression management.

FIGURE 4.3

Summary of the Major Antecedents of Organizational Citizenship Behavior (OCB)



To evaluate the relative impact of various antecedents of OCB, Organ and Ryan (1995) conducted a meta-analysis of 55 studies. Their results suggest that job satisfaction and perceived fairness were correlated with OCB at approximately the same magnitude. The results for dispositional predictors of OCB were rather disappointing, however. For example, personality traits such as conscientiousness, agreeableness, positive affectivity, and negative affectivity were all unrelated to OCB. As Figure 4.3 summarizes, the most logical conclusion to be drawn from Organ and Ryan's meta-analysis is that affective and cognitive influences combine in an additive fashion to determine OCB.

Special Issues in OCB Research

Since Organ (1977) first introduced the concept of OCB, there has been considerable research on the topic. As with most well-researched topics, many issues have generated controversy and debate among researchers in this area. In this section, four of these issues are discussed briefly.

The underlying premise behind OCB research is that this form of productive behavior is necessary in order for organizations to be effective (Katz & Kahn, 1978).

What is typically argued is that if employees performed their jobs exactly as written, and did nothing beyond that, organizations would not be able to function effectively. Surprisingly, this claim had received virtually no empirical scrutiny until very recently. It has now been shown empirically, at least for groups, that OCB is positively related to effectiveness (Karambayya, 1989; Podsakoff et al., 1997). As would be expected, groups in which members engage in more OCBs tend to be more effective than groups in which members engage in fewer of these behaviors. For example, researchers have found that OCB is related to aspects of organizational effectiveness (e.g., profit, customer satisfaction) among bank branches in Taiwan (Yen & Niehoff, 2004).

What is still not clear from research on OCB and its effectiveness is the direction of causality underlying this relationship. Researchers have largely operated under the assumption that OCB has a causal impact on group and organizational effectiveness. However, it is also possible that the direction of causality could be reversed. Members of effective groups may report high levels of OCB, regardless of whether they actually exist. When a group is successful, group members may perceive high levels of OCB as they bask in the glow of this success. In a related study, Staw (1975) found that group members' retrospective reports of group cohesiveness could be manipulated based on false feedback about group performance. In this study group, members who were told that their group had been successful reported higher levels of cohesiveness than did group members who were told that their group had been unsuccessful. Using the same paradigm as Staw (1975), Bachrach, Bendoly, and Podsakoff (2001) recently found evidence that retrospective perceptions of OCB may be influenced by group

performance. This issue will undoubtedly be addressed in future OCB research.

A second issue concerns the validity of the OCB concept itself. As originally defined by Organ (1977), OCB represents behavior that is above employees' formal job responsibilities, and for which there are no formal rewards. With regard to the first issue, it is becoming increasingly questionable that, in performing their day-to-day activities, employees make the *job descriptive* versus *nonjob descriptive* distinctions upon which OCB is based. This suggests that many employees view activities, such as helping other employees, being courteous to others, and occasionally attending functions on behalf of their organization, as part of their formal role responsibilities. This reasoning is supported by Morrison (1994), who found, in a sample of clerical employees, that many behaviors that are considered OCB were classified by these employees as part of their normal job responsibilities. She also found that there was very little correlation between employees' and supervisors' classifications of OCBs. Thus, many of the behaviors that supervisors consider OCB may simply represent employees' doing things that they consider to be part of their jobs.

Another interesting finding from Morrison's (1994) study was that employees were most likely to classify OCBs as in-role behaviors when they reported high levels of both job satisfaction and affective organizational commitment. Building on this finding, Bachrach and Jex (2000) conducted a laboratory study in which they used a mood-induction procedure to investigate the impact of mood on the categorization of OCB for a simulated clerical position. In this study, it was found that inducing a positive mood state had no impact on classification of OCB. Interestingly, though, subjects who experienced a negative mood-induction procedure classi-

fied fewer of the OCBs as being part of their regular roles, compared to those in the positive or neutral mood conditions. These findings suggest that negative affect may result in a more narrow definition of one's role. Taken together with Morrison's study, these findings call into question the *in-role* versus *extra-role* distinction that has been implicit in OCB research.

A third issue in OCB research is whether employees really engage in OCB without the expectation that such behaviors will be rewarded. Despite Organ's (1977) initial claim, recent evidence suggests that this assumption may be rather questionable. For example, it has been shown empirically that performing OCB positively influences formal performance appraisals (Eastman, 1994), and it is doubtful that employees are unaware of this. According to Bolino (1999), when OCB is performed with the expectation of future rewards, it then becomes a form of *impression management* (see Chapter 10) rather than truly altruistic behavior. Impression management behaviors are simply tactics people use to influence others' views of them. According to Bolino, OCB is most likely to be used as an impression management tool when it is highly visible to others, particularly those responsible for the dispensation of rewards. As an example, an employee may help other employees only when his or her supervisor is around to observe.

One could certainly argue that as long as OCB is performed, the motivation is irrelevant. However, the reasons behind such behavior are important if organizations want to influence the performance of OCB. If employees perform OCB primarily because they are satisfied with their jobs, or feel that they have been treated fairly, organizations can influence the performance of OCB by treating employees fairly and taking steps

to enhance satisfaction. On the other hand, if OCB is performed with the expectation of rewards, or for impression management purposes, organizations should directly or indirectly link rewards to the performance of OCB. In essence, this suggests that OCB should be explicitly recognized as another form of job performance.

A final issue in OCB research is whether OCB will remain a viable concept in the workplace of the future. Bridges (1994), among others, has pointed out a clear trend in recent years: Organizations have been moving away from formal job descriptions. In fact, Bridges has predicted that the concept of a *job* will eventually cease to exist (see

COMMENT 4.6

A WORLD WITHOUT JOBS

WILLIAM BRIDGES, in his 1994 book *JobShift: How to Prosper in a Workplace without Jobs*, argues that, in the near future, the concept of a "job" will cease to exist. That is, rather than having a formalized job description that lays out one's duties, each person in an organization will be given project-based objectives and expected to accomplish them. One of the implications of having no formalized jobs is that organizations will be able to make much greater use of temporary and contingent employees; that is, an organization will be able to bring in specialists on an "as needed" basis to complete specific projects. This will give organizations considerable flexibility and allow them to operate with much lower labor costs. Another implication of this trend is that more and more people will become "independent contractors" rather than permanent employees of a given organization.

According to Bridges, this trend toward doing away with jobs has thus far been most evident in organizations that operate in high-

technology sectors. This is largely due to the speed at which things are done in these sectors, and the need for constant innovation. Will other types of organizations eventually do away with jobs? Although it's certainly possible, there are reasons to believe that many organizations will not do away with jobs. For example, defending the legal soundness of selection and promotion procedures depends, to a large degree, on the job-relatedness of those procedures. Thus, an organization without job descriptions would be in a very difficult position if its selection and promotion procedures were challenged. One would also assume that unions would be very wary of doing away with job descriptions since they help in establishing wage rates and essentially serve as a "contract" as to the job duties employees are expected to perform.

become a more pronounced trend because many employees may not have formal job descriptions to guide their behaviors.

INNOVATION IN ORGANIZATIONS

The third and final form of productive behavior to be examined in this chapter is innovation. Like OCB, innovation is really an aspect of job performance, but it is unique enough that a distinct literature examining its antecedents has developed. Although no standard definition of innovation exists, this form of productive behavior may be thought of as instances in which employees come up with very novel ideas or concepts that further the goals of the organization. Hellstrom and Hellstrom (2002) coined the term *organization ideation* to refer to “the process of creating useful conceptual novelty, and the circulation and taking on of that novelty in an organization” (p. 108). The most visible forms of these types of employee innovation in organizations are new products and services, and there are many examples of these. The Dell Computer Company, for example, has been an innovator in the marketing and distribution of personal computers. Saturn has been an innovator in both the distribution and service of automobiles. Not all innovations, however, take the forms of products and services. For example, an employee or employees may come up with a unique organizational structure, a more efficient production method, or some other cost-saving administrative procedure.

In the organizational innovation literature, there are four distinct streams of research (Damanpour, 1991). For the first stream, some researchers have examined the process by which employees come up with innovative ideas; others are more interested in determining the characteristics that dis-

tinguish highly innovative employees from others. Note that, in both cases, the focus is on the employee or employees responsible for the innovation. This view is also reasonably congruent with the definition of innovation proposed in this chapter. For the second stream, innovation is viewed from a more macro perspective; that is, many innovation researchers focus on what is described as the *diffusion* of innovations throughout an organization (see Greenhalgh, Robert, & McFarlane, 2004). An example of this might be the manner in which computers come to be utilized companywide. For the third stream, innovation researchers tend to focus on what can be described as the *adoption* of innovations (Frambach & Schillewaert, 2002). Viewed from this perspective, the focus is on an organization’s initial decision on whether to adopt some innovation. Finally, a fourth stream emphasizes the importance of individuals and organizations in innovation. Hellstrom and Hellstrom (2002) have recently emphasized how individual workers and facilitating organizational conditions come together to breed innovation. The authors argue that “organizational highways, alleys, and by-lanes (p. 107)” can be created within an organization to spread innovation throughout the organization. See Comment 4.7 for an example of organizational innovation in the business of baseball.

Employee Attributes that Contribute to Creativity and Innovation

If innovation is viewed from the individual employees’ perspective, a logical question is: Are there predictors of whether employees will be innovative? According to Amabile (1983), several variables are predictive of creative production in individuals. Because creativity and innovation are closely linked,

COMMENT 4.7

MONEYBALL APPLIED TO INNOVATION IN ORGANIZATIONS

MICHAEL LEWIS, in his 2004 book “Moneyball: The Art of Winning an Unfair Game,” describes the art of management and winning in the world of baseball. Although the book was written about the business of recruiting and managing talented baseball players, a number of organizational scholars recognized the relevance of the principles described in the book to the overall field of human resource management and organizational innovation. A lead article in *Human Resource Management* (2006) was devoted to the implications of the book for organizations, and several other organizational scholars commented on this lead article.

Perhaps the biggest lesson to be gained from “Moneyball” is the importance of not maintaining practices that are based purely on speculation, intuition, and tradition, but recognizing the need to be innovative to deal with the demands facing the organization. Lewis tells the story of how general manager Billy Beane turned the Oakland Athletics into a highly effective team with a third as much money as the wealthiest baseball teams. One of the underlying themes is how Beane had to

be innovative in order to identify, acquire, and keep talent in ways that other baseball teams with more money did not. Beane used a number of principles from psychology in order to make decisions for which baseball players to recruit, including the best predictor of future performance being past performance and statistical indicators of performance being superior to hunches or intuition in identifying players who would excel. Although this approach seems reasonable, at the time it represented a strong deviation from the status quo of identifying talented players, and was viewed as a highly radical approach. Of course, the method ultimately paid off and the Oakland A’s thrived as a baseball team and organization. The story of Moneyball has implications for how organizations in general recruit and retain employees, emphasizing the use of objective data as opposed to subjective perceptions when making decisions.

Source: M. Lewis. (2004). *Moneyball: The art of winning an unfair game*. New York, NY: W.W. Norton & Company.

these variables are also relevant to predicting innovation in organizational settings. According to Amabile, creativity is due to *task-relevant skills*, *creativity-relevant skills*, and *task motivation*.

The area of task-relevant skills is related to the previously discussed variable of general mental ability, but it is more than that. To be creative, an individual must have a high level of general mental ability, but must also have more specific abilities. For example, a scientist developing a new vaccine must not only be intelligent, but must also

know specific information about the behavior of microorganisms and be able to apply this knowledge in his or her work. Specific knowledge and technical skills are dependent on a certain level of general mental ability. Often, however, individuals must acquire these through some type of formal education; for example, most successful scientists have completed graduate training in their respective fields. Creative talent may also be developed apart from formal education. In the creative arts, for example, many successful people learn through informal

means such as one-on-one tutoring, or they may even be self-taught.

Despite the importance of task-relevant skills, many people possess them but do not produce creative, innovative work. For example, despite the large number of individuals holding the doctoral degree in industrial/organizational psychology and related fields (e.g., Organizational Behavior, Human Resource Management), a relatively small proportion become highly productive researchers (e.g., Long, Bowers, Barnett, & White, 1998; Ones & Viswesvaran, 2000). Keep in mind that individuals holding Ph.D. degrees in these fields all have reasonably equivalent education and training, and have achieved a certain level of competence in their specialty. Why, then, are some highly productive while others are not? The answer to this question may lie in the area of creativity-relevant skills and task motivation.

Creativity-relevant skills are essentially *meta-skills* that individuals use in the creative process. One crucial skill in the creative process is a cognitive style that is conducive to creativity. According to Amabile (1983), creative people are able to understand the complexities in a problem and are able to *break set* during problem solving. Stated differently, being creative requires being able to see a problem from multiple perspectives and having the willingness needed to *break the mold* in order to solve a problem. A good historical example of this principle not being applied can be seen in retrospective accounts of the Vietnam War (McNamara, Blight, Brigham, Biersteker, & Schandler, 1999). In hindsight, it is clear that American and North Vietnamese decision makers viewed the conflict from completely different perspectives and were unwilling to deviate from these perceptions. On the American side, Vietnam was viewed as the "First Domino" in a Communist plan to dominate Southeast

Asia. The North Vietnamese, on the other hand, equated American intervention with the colonialism of the French. If either side had been willing to deviate from these perspectives, it is possible that the conflict could have been settled before the war escalated to a level that was so destructive for both sides.

Another important creativity-relevant skill is a work style that is conducive to creativity. Creative people are able to concentrate their efforts on a given problem for long periods of time. Stated differently, creativity requires hard work. Creative people, for example, are often able to work long hours at a time without stopping. Another aspect of work style is that creative people are able to engage in what Amabile (1983) described as *productive forgetting*—the ability to abandon unproductive searches, and temporarily put aside stubborn problems. Clear examples of this can be found in the sciences, where *breakthroughs* are typically achieved only after many failures.

The creativity-relevant skills described up to this point may be acquired from training, but there are more dispositional factors that contribute to creativity. Although researchers have been unable to isolate a *creative personality*, some personality traits do seem to be associated with creative activity. These include self-discipline, ability to delay gratification, perseverance in the face of frustration, independence, an absence of conformity in thinking, and lack of dependence on social approval.

The issue of task motivation has not been examined extensively in creativity research, largely because of the strong focus on intrinsic factors associated with creativity. It is likely, however, that at least some of the variation in creativity can be explained by the level and nature of the motivation one has toward the task being performed. According to Amabile (1983), creativity

requires that individuals genuinely enjoy what they are doing, and perceive that they are performing the task because they want to, rather than because of external pressures. These perceptions of enjoyment and intrinsic motivation depend on one's initial level of intrinsic motivation toward the task being performed, the presence or absence of external constraints in the social environment, and the individual's ability to block out or minimize external constraints.

Organizational Determinants of Creativity and Innovation

Given our discussion of the determinants of creativity in individuals, what can organizations do to foster creativity and innovation among employees? The short answer to this question is to hire creative people. Although this suggestion makes sense, there are other things organizations can do. For example, to enhance creativity-relevant skills, organizations can provide training in the use of creative problem-solving methods such as brainstorming. A typical activity in such a training program might be for participants to come up with as many different uses for a paper clip as they can think of in 5 minutes (there are actually quite a few, if you think about it!). Such forms of training will obviously not completely compensate for a lack of innate ability; however, they may help talented employees realize their creative potential.

Another way that organizations can foster creativity and innovation is through influencing task motivation. A more comprehensive discussion of motivation is contained in Chapter 8 but in the present context, there appear to be things organizations can do to enhance task enjoyment and intrinsic motivation. One way is to attempt to place employees into jobs that they genuinely

enjoy. This is not always possible, but if it can be done, it can lead to higher levels of creativity. Another way organizations can enhance task motivation is through the identification and removal of external constraints (Peters & O'Connor, 1988). Even though some individuals may be able to temporarily circumvent external constraints, employees stand a greater chance of developing the intrinsic motivation necessary to be creative if they are not there in the first place.

Kauffeld, Jonas, and Grote (2004) attempted to develop a structured measurement tool to assess an organization's climate for innovation. The authors found four major factors: activating leadership (having leaders that encouraged and modeled innovation), continuous questioning (encouraging employees to always question current practices), consequential implementation (seeing that the implementation of innovations had real consequences for the employee and organization), and professional documentation (clearly indicating and describing the innovation). The authors found that a climate for innovation was related to variables such as quality of developed solutions for organizational problems and product innovations.

Amabile and Conti (1999) have also extended Amabile's work on individual creativity into organizations, and explicitly recognizes the importance of the organizational context in facilitating the creativity of employees. She argues that five environmental factors in organizations can contribute to creativity in employees: encouraging creativity, autonomy and freedom, resources (the opposite of removing constraints), pressures (increasing positive challenges and reducing such factors as workload), and obstacles to creativity (e.g., conservatism and conflict). Amabile, Conti, Coon, Lazenby, and Herron (1996) found that the

presence of facilitating factors is related to the creativity of Research and Development projects in a high-tech company.

As stated earlier, much of the innovation literature has adopted a macro focus; that is, researchers have focused on identifying characteristics of organizations that facilitate or impede the adoption or diffusion of innovation in those organizations. The most comprehensive examination of organizational-level predictors of the adoption of innovation was a meta-analysis by Damanpour (1991), in which he combined data from 23 studies. Before describing the findings from this meta-analysis, it is important to note that Damanpour distinguished between *technical innovations* and *administrative innovations*. Technical innovations pertain to innovations in products, services, and production process technology. An organization adopting a new production process would be adopting a technological innovation. Administrative innovations focus on organizational structure and administrative processes. An example of this would be an organization's decision to switch to a team-based organizational structure.

The results of this study suggest there are several organizational-level predictors of innovation. The strongest predictor, not surprisingly, was technical knowledge resources. Organizations are more likely to adopt innovations when they have employees who possess the technical expertise to understand and facilitate the implementation process. A possible explanation for this finding is that without technical expertise, there would be no innovations for organizations to adopt in the first place. Thus, an organization needs to hire individuals with high levels of technical knowledge.

The second most powerful predictor of innovation was the organization's level of specialization. An organization that is highly

specialized, such as the manufacturer of a small number of products, likely has individuals with high levels of technical expertise. Having many technical specialists simply brings more talent to bear on important problems and may facilitate the cross-fertilization of ideas, both of which ultimately lead to innovation.

A third notable predictor of innovation identified in this meta-analysis was the level of external communication in an organization. Examples of this predictor would be technical experts' presenting their research findings at conferences and sharing their ideas with individuals in other organizations. Organizations that encourage frequent communication with the external environment are likely to increase the chances of bringing in innovative ideas from the outside. External communication also provides members of organizations with an opportunity to test the validity of their ideas on those outside of the organization. For those in many technical specialties, external communication may in fact be the only way to obtain unbiased feedback on their ideas. One recent study found that employees in project-based and knowledge-intensive organizations are more innovative at work when they are embedded in social structures relevant to a given project or area of knowledge outside the organization (Staber, 2004).

A fourth predictor of innovation was identified as *functional differentiation*. A high level of functional differentiation simply means that distinct and identifiable functional specialties exist within an organization. As an example, an organization with a high degree of functional differentiation may have a research and development division with a departmental structure based on technical specialties. A high level of functional differentiation leads to innovation because groups of employees who belong to the same

functional specialty are better able to elaborate on ideas and hence to develop innovations. In many cases, this is helpful because specialty-based coalitions may help to facilitate administrative changes and innovations.

The four variables described previously were the strongest predictors of innovation identified in this meta-analysis. Other less powerful, though statistically significant, predictors of innovation were professionalism (.17), centralization (-.16), managerial attitudes toward change (.27), administrative intensity (.22), slack resources (.14), and internal communication (.17). These results suggest that innovation is fostered by employees who have a strong identification with their profession, a low level of centralization, positive managerial attitudes toward change, a high concentration of administrative employees, available slack resources, and a high level of communication.

More recent research has supported the validity of these factors as predictors. Thomas, McDonnell, McCulloch, While, Bosanquet, and Ferlie (2005) examined innovation in Primary Care Groups within the healthcare system in England. These authors found that an organization's capacity for innovation was driven by such factors as having multiple opportunities for employees to reflect and learn and communicate with other employees within the organization, having both clinicians and managers in positions of leadership to provide multiple perspectives, and being sure to time a particular innovative initiative correctly given the demands facing a particular work group. Caldwell and O'Reilly (2003) conducted interviews with senior executives and found that factors such as support for risk-taking, being tolerant of mistakes, high levels of teamwork, and being able to implement decisions quickly were seen to lead to increased innovation (see also Mohamed, 2002).

Given these findings, organizations wishing to encourage innovative behavior certainly need to recruit and hire the best technical talent possible. It is also important that organizations allow talented individuals to communicate with others outside of the organization, to develop and test ideas. This can be done through a variety of mechanisms: attending professional conferences, publishing in peer-reviewed journals, and, in some cases, bringing in experts from the outside. Ironically, some organizations are hesitant to do this, for fear that external communication will compromise proprietary information. This is particularly true for organizations operating in highly competitive industries (e.g., consumer products, food). This is a valid concern, but one could argue that the potential benefits of such forms of external communication far outweigh the risks.

Influencing managerial attitudes toward change is a complicated issue, but an organization can approach it in several ways. One way is to select management employees who have positive attitudes toward change. This may be difficult if the assessment must be done during the hiring process. Another approach may be to influence management attitudes through training and development activities. Ultimately, the most powerful influence on attitudes toward change is the way managers are treated. In many organizations, employees are punished for or discouraged from trying new things. Thus, the best way to improve attitudes toward change may be to encourage managers to try new things and to take risks. By doing this, organizations can take the threat out of change. Consequently, managers themselves may be more receptive to change and innovation.

This latter point emphasizes the importance of leadership in positive attitudes and actions toward innovation. Mumford and

Licuanan (2004) discussed the importance of leaders in facilitating the teamwork necessary for creative innovation to occur, and reviewed research showing that leaderless teams are less effective because of this lack of facilitation. These authors point out that leaders who are effective at encouraging innovation and creativity tend to have high levels of technical expertise and creative thinking skills. Finally, the authors note that because employees involved in innovative work tend to be more intrinsically motivated to perform their tasks, the primary role of leaders is to create the conditions that can funnel motivation to a given area of creativity.

CHAPTER SUMMARY

In this chapter, we examined productive behavior, or employee activities that contribute to the goals of the organization. The most common form of productive behavior in organizations is job performance, and this has been studied extensively for a number of years. There have even been attempts to describe dimensions of performance that are common to most jobs. Such efforts to model job performance continue to evolve, and they hold great promise in helping us to understand the substantive nature of job performance. Although there are differences between proposed models, one distinction that cuts across all of them is in-role (technical aspects of a given job) versus extra-role (skills that transcend the specific content of a job such as communication skills and being a team player) performance.

Because of its complexity, a number of factors complicate the attempts to measure job performance. These include the amount of instability in job performance over time and the fact that a number of forces tend to restrict the variability in job performance

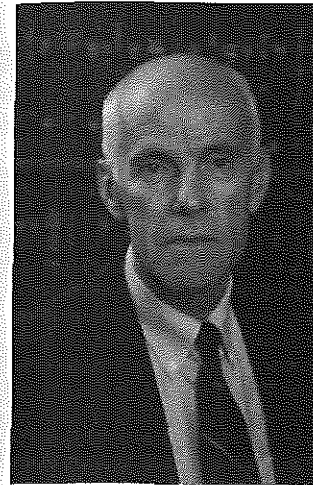
within organizations. Despite all of these complicating factors, organizational researchers have still learned a great deal about the determinants of job performance. Research accumulated over the years has led to the conclusion that three variables stand out as predictors of performance, regardless of the job: (1) general cognitive ability, (2) level of job experience, and (3) the personality trait of conscientiousness. Furthermore, these variables appear to influence performance largely through the acquisition and utilization of job knowledge and the motivation to perform well.

Organizational Citizenship Behavior (OCB) represents the second form of productive behavior examined in the chapter. Although it can take several forms, OCB is defined as behavior that is not part of employees' formal job responsibilities. Research has shown that employees engage in OCB primarily because of positive affect and perceptions of the level of fairness with which they are treated by the organization. Only recently have researchers begun to empirically examine the assumption that OCB enhances organizational performance, to question the *in-role/extra-role* distinction that lies at the heart of OCB, and to probe the underlying motivation for the performance of OCB.

The third form of productive behavior discussed was innovation. We examined the characteristics of individuals who are likely to engage in innovative or creative behavior, and we explored macro influences on the innovation process. Drawing on individual-level studies of creativity, it appears that creativity and innovation can be explained on the basis of domain-relevant skills, creativity-relevant skills, and task motivation. Macro-level studies suggest several influences on the innovation process in

PEOPLE BEHIND THE RESEARCH

JOHN CAMPBELL AND THE MODELING OF JOB PERFORMANCE



For 100 years the focus of I/O Psychology has been on two major dependent variables, individual job performance and individual job satisfaction. While hundreds of studies have been devoted to the modeling and measurement of job satisfaction, no such literature existed for performance itself, until recently (i.e. after 1990). We had no "theory of performance." Performance measures typically were "criteria of convenience," and virtually all available indicators (e.g. college professor grant dollars or realtor sales volume) are susceptible to many sources of variation besides the actions of the individual. An outlandish example was a suggestion by a researcher to use "death rates" as a measure of physician performance. Over a 20-year period my goal was to correct this situation and give our most important dependent variable its due as a scientific construct.

Two projects made this possible. First, my colleagues and I compiled every study ever

done on the determinants of, and the measurement of, individual manager performance. It resulted in the 1970 book, *Managerial Behavior, Performance, and Effectiveness*, which made a clear distinction between (a) the things managers actually do, and (b) the outcomes of what they do (i.e. the bottom line), which are virtually always influenced by many things besides the manager's behavior.

The second was the largest project in the history of applied psychology (Project A), which dealt with the U.S. Army's selection and classification system. Three years were devoted to development of multiple measures of performance, using every known measurement technology. Two cohorts of 10,000 new recruits were followed for six years. Performance was assessed at the end of technical training, after 3 years, and after 6 years on the job.

With this much data it was possible to model empirically the substantive nature of performance in this population of occupations. I then proposed a comprehensive model of individual performance for all jobs (e.g. Campbell, McCloy, Oppler, & Sager, 1992).

This was the first model of its kind, and the intent was to provide a meaningful specification of performance that can guide research, inform human resource practices, and provide a framework for integrating the existing literature. It felt good then. It still does.

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organizations. The most general predictors of innovation appear to be technical knowledge resources, external communication, and managerial attitudes toward change. As with individual-level attributes, organizations have several levels of influence at the macro level in order to encourage both the development and adoption of innovation.

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