Note on Subjects' Hypotheses in Multiple-Cue Probability Learning

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Subjects' hypotheses in multiple-cue probability learning were studied by trial-by-trial verbal reports in tasks with linear and nonlinear cue-criterion relations. In accordance with earlier findings, the results of the present experiment show that subjects learned linear tasks rapidly, while nonlinear tasks were not learned at all. The subjects' verbal hypotheses show that the subjects were concerned with rules for combining cue values, rather than with cue-criterion functions. This explains why the subjects fail to learn nonlinear multiple-cue tasks. It also shows that, although the subjects seem to learn multiple-cue tasks through a hypothesis testing process of the same kind as in single-cue probability tasks, the hypotheses tested in multiple-cue tasks are different from those tested in single-cue tasks. Finally, the present results suggest that the picture of the subjects' cognitive models of multiple-cue probability learning tasks provided by the customary multiple regression analysis may be fundamentally misleading in that it suggests that the subjects learn the validity of each cue rather than a combination rule.

Results from cue probability learning (CPL) studies demonstrate that the form of the function relating cue(s) to criterion has strong effects upon performance. For both multiple-cue probability learning (MPL) and single-cue probability learning (SPL), tasks with linear cue-criterion relations are learned faster than tasks with nonlinear relations (see Brehmer, 1979a for a review), but the effects are much more dramatic in MPL than in SPL. Although performance is considerably worse in nonlinear SPL tasks than in linear SPL tasks, both kinds of tasks are learned (Brehmer, 1974), but in MPL, the introduction of nonlinear cue-criterion relations seems to abolish learning completely (Deane, Hammond, & Summers, 1972; Hammond & Summers, 1972).

Brehmer (1974) has proposed a model to account for the effects of function form in CPL. This model assumes that the subjects learn such tasks by testing hypotheses about possible functional relations between cue and criterion, and it accounts for the effects of function form in terms

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**Personal Constructs, Performance Schemata, and "Folk Theories" of Subordinate Effectiveness: Explorations in an Army Officer Sample**

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This research employs personal construct theory (Kelly, 1955) to explore the content of categories or schemata that may be used in making work performance judgments. Twenty-five experienced U.S. Army officers, focusing on the job of noncommissioned officer (NCO; first-line supervisor), generated independently a total of 189 personal work constructs that they believe differentiate between effective and ineffective NCOs. The officer subjects numerically defined each of their own 6–10 constructs by rating the similarity between each of these constructs and each of 49 reference performance, ability, and personal characteristics concepts. Correlations were computed between the subject-provided similarity ratings for the constructs, and the 155 X 189 matrix was factor analyzed. Six interpretable content factors were identified (e.g., Technical Proficiency, Organization), with 123 of the 189 constructs from 23 of the 25 subjects loading substantially on these factors. Findings suggest that a core set of concepts is widely employed by these officers as personal work constructs, but that different officers emphasize different combinations of this core set. The personal constructs elicited from officer subjects are likened to performance schemata and "folk theories" of job performance. © 1987 Academic Press, Inc.

The study described in this paper explores applications of personal construct theory (Kelly, 1955; Mancuso & Adams-Webber, 1982) to research in performance appraisal. In particular, attention is focused on "folk theories" of work behavior (Borman, 1983), performance constructs used naturally by persons very familiar with a job to make judgments about incumbents' effectiveness on the job. Preliminary data are presented that reveal what these dimensions may look like for experienced Army office managers. Similarities and differences in construct

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content are also examined in this manager sample. Before describing this exploratory work, a brief description of personal construct theory is in order.

**Personal Construct Theory**

As part of his ambitious psychological theory, Kelly (1955) observed that each person characteristically evolves, for his or her convenience in anticipating events (or other persons’ activities), construction systems reflecting his/her personal way of viewing and interpreting these events. That is, individuals develop personal construct systems which they use to judge events and to make predictions about future events. Most important for the present purpose is that some of these categories are imposed on their person perceptions. These interpersonal filters may influence observations and judgments about other people by providing frames-of-reference or sets that make perceivers look for certain kinds of interpersonal information and interpret this information according to their own constructs (Duck, 1982).

Research and practice utilizing personal construct theory consistently employs as an instrument the Kelly Repertory Grid (Rep Grid) procedures. Kelly’s method requires subjects first to identify persons they know who fit certain roles (e.g., mother, best friend, etc.) and then to examine triads of these role persons (e.g., role person 1 and 3 vs 7, 1 and 7 vs 3), describing in their own words how the two persons differ from the third. This is done for as many triads as is desired for the particular application.

Once the personal constructs have been elicited, individuals’ category systems can be studied in their own right. For example, in clinical settings, where the theory is applied most often, therapists may use the constructs elicited from a patient to help understand that patient’s view of other persons, the kinds of differentiating constructs he or she uses in perceiving his/her interpersonal world (Epingle, 1984). In addition, individual patients are sometimes asked to rate their role persons on each of their own personal constructs, and these ratings are then correlated or even factored analyzed (for a particular patient) to assess the structure of the patient’s personal construct system (e.g., Widom, 1976). Various interpretive rules of thumb have been developed to help personal construct-oriented therapists to diagnose problems “thinking sets” from the kinds of constructs generated and the structure of the construct interrelationships (Adams-Webber, 1979).

**Relationships between Personal Constructs and Other Cognitive Structures**

In this section attempts are made to assess briefly similarities and differences between the various cognitive structures most often attended to in the social cognition literature (e.g., Cantor & Mischel, 1977; Hastie, 1981; Landman & Manis, 1983; Rosch, 1978). Wyer & Srull, 1980) and to evaluate how personal construct systems may be related to these concepts. Schema is first of all a generic term that subsumes several other hypothesized cognitive structure terms. Schemata are thought to be categories and/or knowledge structures that persons use to organize and simplify the complex and varied interpersonal information typically present in a social context. In the social information processing sequence of attention, encoding, retrieval, and evaluation (e.g., Taylor & Crocker, 1981), schemata are used to select and pare down the information being processed. They may even be a biasing feature of interpersonal cognitive activity in that perceivers may process observed behavior according to their schematic category structure, at the expense of processing the behavior actually observed.

Regarding different types of schemata, prototypes are hypothesized structures that highlight modal or typical features of a category (Hastie, 1981). Prototypes can be thought of as good examples of a schema (e.g., George is a perfect example of what I mean by dominant). Stereotypes are categories associated with groups of persons (Hamilton & Gifford, 1976). They tend to have, as well, a more affective component than other kinds of schemata. Implicit personality theories (Schneider, Hastorf, & Ellsworth, 1979) are said to describe assumptions individuals make about relationships between traits in people. These theories may or may not accurately reflect how traits actually covary in the population.

How does the concept of personal constructs fit in here? First, the concept is in general very similar to the notion of schemata (Landman & Manis, 1983). Personal construct theory posits that category systems for individuals within a “focus of convenience” (a particular context—for example, a supervisor in a work setting) aid in organizing and simplifying information. Further, the concepts of prototypes and stereotypes are not in any way contradictory to the notion of personal constructs. Personal construct theorists have noted that prototype exemplars for constructs can certainly exist and help in better defining an individual’s personal categories (Gara, 1982), and personal construct theory views stereotyping as occurring when a person’s construct system in relation to a group lacks “individualization and differentiation” (Adams-Webber, 1979). In effect, everyone in the group is seen as standing about the same in his/her personal constructs. Finally, an important focus of personal construct theory is on the content of different constructs; however, the aspect of personal constructs that emphasizes structure of the construct system and relationships between a person’s different constructs is certainly very similar to the concept of implicit personality theory.

Thus, personal construct theory shares most features of the social cognition literature’s schematic processing concepts. As we will see, an ad-
vantage to applying personal construct theory to the special case of performance appraisal, in addition to the previous introduction of schematic notions to this area (e.g., Feldman, 1981; Ilgen & Feldman, 1983; Lord, Foti, & Phillips, 1982), is that the Rep Grid arising out of research with personal constructs provides a useful vehicle for eliciting categories that may aid in understanding the performance rating process.

**Application of Personal Construct Theory to Performance Rating in Organizations**

Personal construct theory has not to my knowledge been directly applied to the perception of individuals' work performance. Yet it seems reasonable that persons very knowledgeable about a job may develop over time constructs or categories that they use to judge incumbents' performance on the job. Of particular interest here are possible similarities and differences in construct content that may have important implications for performance judgments and ratings. First, based on previous investigations of personal constructs in interpersonal perception research, it seems reasonable that there may be important individual differences in work-related constructs that, to a degree, affect what a rater looks for in observing ratee work behavior. Consider, for example, if one rater has an important construct, "getting along smoothly with others on the job," and a second rater does not share that construct or anything like it, the first rater may be more likely than the second to focus on work behavior related directly to that aspect of performance.

Although individual differences in constructs have been emphasized in past research, there may also be substantial similarity in work-related category systems across, especially, experienced supervisors. Such similarities may result from many observations of incumbents on the job that lead supervisors to similar views of what constitutes effective and ineffective performance.

The relationships of personal constructs to perceptions of work behavior may be akin to what might be called "folk theories" of work performance (Borman, 1983). Interviews with persons about work on jobs sometimes reveal what appear to be deeply felt and sometimes idiosyncratic "theories" of job performance. Consider these statements: A sales manager says with conviction, "You know what the key to this (sales) job is? Thinking on your feet with customers." And, a first-line supervisor speaks, "Show me a person who comes to work on time and I'll show you a good employee." Concepts such as these can be viewed as elements of folk theories. Folk theories of performance are viewed as reflecting primarily the content of a performance category system, just as the focus of personal construct theory is on the content of these constructs. Folk theories may then help shape judgments about the effectiveness of individual employees.

Of course, characteristics of the work situation and employees themselves will in part dictate what raters observe and process when viewing work behavior. When a salesperson makes the largest sale in the history of the region, the regional manager rater is highly likely to attend to that piece of performance information no matter what the content of his or her personal constructs might be. Also, other features of the situation that increase the salience of a particular construct will make perceivers' use of that construct more likely (Taylor & Fiske, 1978; Tversky, 1977). An example offered by Feldman (1981) is that race is more likely to be a salient construct when a ratee group has only one black rather than when it contains all blacks.

In spite of potentially relevant situational and ratee factors, the point to be emphasized here is that there may well be important similarities and differences in raters' personal construct systems related to observing and making judgments about work performance. Specifically, raters who have similar construct systems may tend to focus on like aspects of ratee performance and make similar evaluations of its effectiveness; differences in raters' constructs may lead to variations in the work behavior attended to and subsequently recalled in evaluating performance. Thus, personal construct similarities and differences may provide an inherent source of interrater agreement and disagreement.

Although there has been progress in gaining conceptual understanding of how personal constructs and schemata might impact on person perceptions (e.g., Adams-Webber, 1979; Cantor & Mischel, 1979), interestingly, we know little about what such categories may actually "look like" in, for example, some representative sample of perceivers, target persons, and situations. Thus, in the cognitive processing literature, especially as applied to performance appraisal, little is presented regarding what might constitute the substance or the content of these constructs. One intention of the present study was to use procedures developed in personal construct research to give us a glimpse of the nature of work category schemata. Although the study is directly concerned with personal work constructs and folk theories of work performance, hopefully results will be relevant to the literature on schemata, as well.

**Present Research**

Regarding applications of personal construct theory to the rating of job performance, research is needed to (a) determine if raters can report meaningful personal constructs related to effectiveness on jobs, (b) examine individual differences in such constructs, (c) evaluate the stability of these constructs in assessing work behavior in different situations and contexts, and (d) assess the impact of these similarities/differences on observations of work behavior and ratings of work performance.

The present work is concerned with (a) and (b) above. Effectiveness
constructs were elicited from experienced officer managers in the U.S. Army, and similarities and differences in these constructs were explored. A trait implication procedure (Borman, 1983) had subjects rate the similarity between each of their constructs and each of 49 reference constructs, yielding subject-provided numerical definitions of the constructs and allowing correlational analyses to describe the degree of similarity in content between different constructs.

METHOD

Subjects

Twenty-five officers in the U.S. Army participated in the research, focusing on the noncommissioned officer (NCO; first-line supervisor) job. All officers had at least 2 years experience managing NCOs, and some had as many as 20 years experience (M = 8.2). Twenty of the twenty-five officers had 6–10 years in Army management. The officers were all from different units and had varying specialties (e.g., combat arms, engineering, intelligence).

Procedures

A variant of the Kelly (1955) Rep Grid was used to elicit personal work constructs from the officers. In this research, officer subjects were asked to think of and record the names of nine NCOs that they considered to be effective in their jobs and nine NCOs that they considered ineffective in their jobs. Six triad combinations of these 18 role persons were then presented. Three triads consisted of two effective versus one ineffective, and the other three compared two ineffective versus one effective. Each role person appeared in one and only one triad. Subjects were asked (in the two effective vs one ineffective NCO comparison) to record how the effective NCOs were different from the ineffective NCO; that is, what it was about the effective NCOs that differentiated them from the ineffective NCO. Subjects provided a label and a definition for each of these differentiating constructs. The officers were instructed to record for each triad comparison one most salient distinguishing feature between the effective and ineffective NCOs, even if it turned out to be the same or very similar to a previous construct they had recorded.

After they made the six comparisons using the triads and generated six constructs apiece, they were asked to consider the effective and ineffective NCOs as two different groups and to record additional constructs that differentiated the two groups if others occurred to them. These procedures resulted in a total of 189 personal work constructs for the 25 subjects (mean = 7.56, range = 6–10). Eight example constructs appear in Fig. 1. To obtain a numerical, subject-provided definition of each personal work construct, a trait implication procedure (Borman, 1983) was employed. This method requires a subject to rate the similarity between each of his/her constructs and a number of reference concepts. The similarity judgments for a construct, against the reference concepts, then constitute a numerical definition of that construct, and correlational analysis can proceed between vectors of similarity ratings across different constructs (within or across subjects).

The critical first step in this procedure is to identify reference concepts. They should be as much as possible exhaustive of the target construct domain because the patterns of similarity ratings for individual constructs of course depend upon the domain represented.

Accordingly, 49 reference dimensions were developed to cover the following domains: (a) personal characteristics and personality traits, (b) cognitive and physical abilities, (c) performance constructs relevant to most or all Army enlisted jobs, and (d) military leadership constructs (see Table 1 for the concept labels).

The personal characteristics/personality traits were identified by reviewing the constructs represented in major personality inventories, as well as taxonomic and factor analytic work done in personality research (Hough & Kamp, 1984). Sixteen personality attributes appeared to cover this domain. The cognitive and physical abilities emerged from reviews of these constructs (Peterson, 1984; Peterson & Bownas, 1982). The nine
TABLE I
REFERENCE CONCEPTS USED FOR TRAIT IMPLICATION SIMILARITY RATINGS

| 1. Energy Level       | Personal characteristics and personality traits |
| 2. Dominance         |                                                |
| 3. Self-Confidence   |                                                |
| 4. Sociability       |                                                |
| 5. Emotional Stability|                                                |
| 6. Cooperativeness   |                                                |
| 7. Aggression        |                                                |
| 8. Conscientiousness |                                                |
| 9. Persistence       |                                                |
| 10. Orderliness      |                                                |
| 11. Originality      |                                                |
| 12. Reflectiveness   |                                                |
| 13. Achievement      |                                                |
| 14. Masculinity      |                                                |
| 15. Independence     |                                                |
| 16. Flexibility      |                                                |

17. Intelligence
18. Good with Numbers
19. Mechanical Ability
20. Good with Words
21. Physical Coordination
22. Physical Strength
23. Work Orientation
24. Steadiness/Precision
25. Perceptual Speed and Accuracy

Performance constructs for enlisted soldiers

26. Stay out of Trouble
27. Controlling Own Behavior Related to Personal Finances, Drugs/Alcohol, and Aggressive Acts
28. Adhering to Regulations, Orders, and SOP and Displaying Respect for Authority
29. Displaying Honesty and Integrity
30. Maintaining Proper Military Appearance
31. Maintaining Proper Physical Fitness
32. Maintaining Own Equipment
33. Maintaining Living and Work Areas to Army/Unit Standards
34. Exhibiting Technical Knowledge and Skill
35. Showing Initiative and Extra Effort on the Job/Mission/Assignment
36. Attending to Detail on Jobs/Assignments/Equipment Checks
37. Developing Own Job and Soldiering Skills

Military leadership constructs

38. Effectively Leading and Providing Instruction to Other Soldiers
39. Supporting Other Unit Members
40. General Unit Administration
41. Administration of Personnel
42. Training Soldiers
43. Supervising
44. Organizing and Controlling Resources
45. Planning
46. Group Development
47. Interpersonal Relations
48. Personal Ethics and Attitudes I
49. Personal Ethics and Attitudes II

Cognitive and physical abilities included mechanical and verbal ability and physical coordination. The performance dimensions were identified in a large-scale critical incidents study of enlisted soldier effectiveness (Borman, Motowidlo, & Hanser, 1983). The 12 dimensions reflected a broad effectiveness domain including elements of technical job performance, organizational commitment, and organizational socialization. Finally, 12 leadership dimensions for NCO first-line supervisors were developed in an analysis of the NCO job (Hubein, Kaplan, Miller, Olmstead, & Sharon, 1983). As Table I shows, these included administration of personnel, training soldiers, and organizing and controlling resources.

The 49 reference constructs were named and carefully defined. The intention was to have subjects rate on a 5-point scale the similarity between each of their own personal work constructs and each of the reference constructs (where 4 = my construct is very similar to the reference construct and 0 = my construct and the reference construct are completely different in meaning). However, a pilot test of this trait implication procedure indicated that some guidance was needed on the distribution of similarity ratings that officers were to make. Accordingly, based on experience with the pilot test, a modified forced distribution was developed to serve as a target for subjects. The distribution for individual personal constructs across the 49 reference constructs was: 1–3, 4s (i.e., very similar); 3–5, 5s; 6–10, 2s; 9–13, 1s; and 20–28, 0s.

Officer subjects then used the 5-point scale, along with guidance on the target distribution, to make judgments about the similarity between each of their personal work constructs and each reference construct. Again, following Kelly (1955), the notion here was to obtain the subject's own definition of his or her personal constructs, but in a numerical form that would allow correlational analyses to index similarities and differences in the content of different constructs.

Data Analyses

The focal analysis involved simply correlating the vectors of similarity ratings within and across subjects. To clarify, the number of variables in this analysis was the total number of constructs generated by the 25 subjects (189), and the N of each correlation was the number of reference constructs (49). The 189 × 189 correlation matrix was factor analyzed to explore the patterns of similarities and differences in content of the personal work constructs, both within and across subjects. In this manner, subject and content factors may be identified. For example, a factor with all constructs for an individual officer loading substantially on it would suggest that the subject has a highly related set of constructs and a comparatively idiosyncratic work construct system, with his/her constructs unrelated to others' constructs (subject factor). A factor highly interpret-
able and having work constructs from several subjects loading on it may, however, indicate a construct held in common across these officers (content factor).

We should emphasize that the identification of content factors was exploratory at this stage. Thus, factor analysis seemed appropriate for examining the possible existence of constructs shared by different officers. Future efforts to identify similarities in construct content may employ confirmatory factor analysis or other hypothesis testing procedures.

## RESULTS

Factor analysis results are summarized in Table 2. The eight-factor solution was selected because of interpretability of factors and a substantial drop in eigenvalues for subsequent factors. Six of the factors are readily interpretable. To provide a richer description of the six content factors, the example constructs in Fig. 1 were selected so that the first construct is one that loaded highly (> than .70) on Factor 1, the second loaded highly on Factor 2, etc.

### TABLE 2

**SUMMARY FACTOR ANALYSIS RESULTS** OF CORRELATIONS BETWEEN PERSONAL WORK CONSTRUCT SIMILARITY JUDGMENTS

<table>
<thead>
<tr>
<th>Common variance accounted for</th>
<th>Factor</th>
<th>Factor definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.7</td>
<td>1</td>
<td>Initiative/Hard Work—Having initiative to tackle jobs; self-starter; working hard and for long hours; dedication to tasks and the job; high energy and action orientation</td>
</tr>
<tr>
<td>12.6</td>
<td>2</td>
<td>Maturity/Responsibility—Being consistently mature, responsible, and dependable; integrity and honesty; “good citizen”</td>
</tr>
<tr>
<td>9.2</td>
<td>3</td>
<td>Subject Factor—(Uninterpretable)</td>
</tr>
<tr>
<td>7.4</td>
<td>4</td>
<td>Organization—Being well organized; setting priorities; organizing subordinates and resources</td>
</tr>
<tr>
<td>12.3</td>
<td>5</td>
<td>Technical Proficiency—Displaying technical proficiency and competence on job; possessing good job knowledge; knowing where to go for technical information (if needed); learning new concepts quickly and thoroughly</td>
</tr>
<tr>
<td>7.8</td>
<td>6</td>
<td>Assertive Leadership—Working through subordinates to accomplish the mission; being confident and in control of subordinates; inspiring confidence in his/her leadership</td>
</tr>
<tr>
<td>10.5</td>
<td>7</td>
<td>Supportive Leadership—Displaying concern for subordinates; teaching and providing feedback to help subordinates; supporting and guiding soldiers</td>
</tr>
<tr>
<td>7.9</td>
<td>8</td>
<td>Subject Factor—(Uninterpretable)</td>
</tr>
<tr>
<td>88.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* A principal factor analysis was conducted with varimax rotation (highest off-diagonal elements placed in diagonals).

Table 3 shows that Factors 3 and 8 are most like subject factors in that for each of these factors one or two officers have several constructs loading on it and very few of the other officers have any constructs associated with the factors. Each of the six content factors are shared by eight or more officers. Of course, some of the officers have two to five of their own constructs loading on a single content factor.

Table 3 indicates just how much in common the content factors are across the 25 subjects. Constructs associated with three of the factors are held by the majority of the officers (Initiative/Hard Work, Maturity/Responsibility, and Technical Proficiency), and eleven, eight, and eight officers, respectively, have constructs related to the other three content factors (Supportive Leadership, Assertive Leadership, and Organization).

Another way to look at the construct similarities/differences question is to consider the number of constructs loading primarily on the content factors. Table 3 indicates that 123 of the 189 personal work constructs generated (65.1%) have substantial loadings on a content factor and are thus shared with 7–17 other officer subjects. Of the 66 remaining constructs, 21 (11.1%) loaded on subject factors and 45 (23.8%) had mixed loadings or low communalities.

It may be important to note here that across-subject similarities in work constructs was by no means assured with this analysis. We considered as quite possible obtaining a factor structure that contained primarily subject factors, with little agreement across officers in what was meant by their constructs, reflecting relatively idiosyncratic views of these effectiveness concepts. Or, individual factors could have had different subjects' constructs loading on them, but be uninterpretable from the standpoint of content, with constructs on the same factor defined very differently by different officers.

Focusing idiosyncratically on individual subjects, the construct systems may be characterized in one of four ways. The numbers in parentheses indicate the author’s assignment of individual officers’ construct systems into the four characterizations.

1. **Differentiated**—Loadings indicate three or more content factors represented, with less than three constructs on any one factor. (8): Subjects 4, 7, 9, 10, 14, 18, 21, and 22.

2. **Idiosyncratic**—Loadings for the majority of own constructs are either on an uninterpretable subject factor or show low communalities. (5): Subjects 1, 5, 8, 20, and 24.

3. **Narrow Focus**—Loadings for at least half the constructs are on content factors, but only one or two factors are represented. (3): Subjects 2, 17, and 25.

4. **Differentiated but Focused**—Loadings show three or more content
DISCUSSION

Results of this exploratory study show that managers who are very knowledgeable about a job can articulate what appear to be substantive categories of subordinate effectiveness on that job. Thus, personal construct theory (Kelly, 1955), found relevant in the areas of interpersonal perception (e.g., Adams-Webber, 1979), apparently has meaningful application to perceptions of subordinates’ work performance. Interestingly, the personal work constructs or “folk theories” of performance reported here demonstrate certain common themes across the 25 Army officer subjects. Fully 123 of 189 constructs generated by the officers reflect content related to six core construct composites that resulted from the factor analysis. Thus, whereas personal constructs in interpersonal perception research are often interpreted as very different in content across perceivers (Hamilton, 1971; Sechrest, 1968), the overall similarities in job performance constructs for the present subjects are as striking as the differences. Why might this be?

Compared to interpersonal dealings in general, making judgments about people in the performance effectiveness domain may involve fewer possible constructs to consider for successful functioning, and this could lead to greater agreement in construct content. Also, relatively standardized leadership training on the part of military officers may have helped produce the similarities across subjects’ construct systems in the present sample.

These observations lead to consideration of the etiology of personal work performance constructs and also to speculation about what meaning they have for perceiving and interpreting performance information. If analogies to personal construct theory are appropriate (e.g., Kelly, 1955), then these constructs develop over time based on the manager’s personal experiences viewing a variety of incumbents performing their jobs and with him/her making formal and informal evaluative judgments about this performance. Normal, “healthy” development of a
manager's construct system might begin with relatively undifferentiated, experimental categories that may often not serve the manager well. In time, however, the category system is likely to become more differentiated (i.e., more multidimensional), with new or refined categories emerging to enable the manager to make useful distinctions between effective and ineffective subordinates. A "good" construct system in this context yields relevant effectiveness criteria and standards and relatively undistorted pictures of subordinates' performances, thus facilitating wise personnel decisions regarding these individuals. A manager's skill in making such informed decisions raises the probability of his/her survival and success.

As mentioned previously, there has been considerable recent discussion and speculation about the role of schemata in performance appraisal judgments (e.g., Cooper, 1981; Feldman, 1981; Ilgen & Feldman, 1983; Lord, Foti, & Phillips, 1982). Feldman (1981) noted that the choice of schemata or categories to employ in judging others' performance depends on both situational factors (especially various salience factors discussed previously, such as memorable, outstanding performance on the part of ratees) and person or perceiver factors. The present research has focused on these person factors.

Individual differences in such category systems should affect performance judgments. Within the context of schemata, each officer's construct system articulated in this research can be considered as representing a repertoire of categories or schemata that may be called up in gathering information about performance, making interpretations regarding ratee behaviors on the job, and evaluating the performance of ratees. Importantly, the study reported here provides a glimpse of the likely content of such schemata and gives us an initial idea of similarities and differences in different manager's schema systems.

Future research on personal work construct systems should focus on the stability of these constructs for individual manager raters over time and in different performance situations and on the impact of constructs on perceptions and evaluations of ratee work performance. Regarding the latter, of special interest is the hypothesis that raters who have very different construct systems look for and recall different samples of behavioral information and that they form evaluative judgments about performance based on these different samplings, thus providing an inherent reason for interrater disagreement in ratings. Related to the present research and work on the rating process in general, efforts must be made to tie individual differences in process factors to other individual differences and to actual rating behavior and outcomes. More generally, hopefully this study will open another line of research into the cognitive processes underlying performance judgments.

REFERENCES