

MANAGEMENT CAREER PROGRESS : JAPANESE STYLE

A three-year longitudinal study monitored the process of management progress of newly hired college graduates in a large Japanese department store chain. Vertical exchange (VE), role disillusionment (RD), and assessed potential (AP) were hypothesized to be predictive of managerial career development. The results suggest a two-factor theory: i. e., the level of management progress is a combined function of (a) an interpersonal factor (VE) and (b) an individual characteristic factor (AP). This study found career development to be primarily attributable to what occurred "after" selection within the organization involving interaction between the newcomer and his supervisor over an extended period of time.

In 1972, a longitudinal study was started in one of the largest department store chains in Japan to investigate the management progress of newly hired college graduates. The research design required repeated monitorings on the process of a newcomer's progress within the organization at seven different points in time over a three-year period. The purpose of the study was to answer the very basic questions concerning the process of managerial career development; (a) Why do some people achieve a higher level of management progress during their early period of organizational career, while others do not? (b) What are the important indicators of management progress during the formative years in business? (c) How accurately can progress in management be predicted? (d) What are the organizational and personal consequences of managerial progress? To explore these research questions, the following three hypotheses were advanced.

(1) *The role-making hypothesis* is directed toward evaluating the effect of leader-member exchange relations upon outcomes from the process of career development. A series of studies conducted by Graen and his associates (Dansereau, et al., 1975; Graen, 1976; Graen, et al., 1973) raised evidence suggesting that the differential qualities in leader-member relations are responsible for predicting outcomes based upon the period of "role-making" within the organization. Based on a longitudinal research method, these studies documented that the newcomer to the organization starts developing his career role with the assistance of his supervisor. The study conducted by Dansereau and his associates (1975) reported that the newcomer may receive critical resources for his role development from his supervisor through a leader-member pro-

cess that they called "negotiating latitude." This concept was measured in terms of the following two dimensions: (a) flexibility of the supervisor in bringing about changes into a newcomer's job, and (b) willingness of the supervisor to use his power to help a newcomer solve problems on the job. Dansereau and his associates reported that the degree of latitude each newcomer experienced during early stages of his work life is predictive of the level of outcomes for the subsequent time periods. They found that the high exchange newcomers were significantly different in their experiences for later periods with respect to leadership support and attention, dyadic problems, job satisfaction, and a pattern of role behaviors preferred by the supervisors, compared to those who experienced low exchange relations with their supervisors during the period of role-making within the organization. Studies that followed suggested that the negotiating latitude measure is also predictive of: (a) emergence of the In-Out group structure within the work unit (Cashman, et al., 1976), (b) patterns of leadership behaviors (Graen and Cashman, 1975) in terms of "leadership" versus "supervision" (Jacobs, 1971) and in terms of the "power bases" of the leader (based on French and Raven's model, 1959), (c) the level of a leader-member agreement (Graen and Schiemann, 1978), and (d) the turnover rate among newcomers (Graen, et al., 1977).

(2) *The disillusionment hypothesis* is directed toward exploring the effect of early-stage attitude change of the newcomer upon the process of development for the subsequent time periods. Many studies reported that the newcomer to the organization is prone to severe feelings of disillusionment (Dunnette, et al., 1973; Graen, et al., 1973; Johnson and

Graen, 1971; Porter, et al., 1975; Schein, 1964 and 1968). Schein (1964) pointed out that socialization practices of the organization are responsible for disillusionment on the part of the newcomer with his career in the organization. According to Schein, the formation of this negative attitude depresses the newcomer's initiative toward progress but solicits conforming or rebelling behaviors against the pressures for socialization. Dunnette and his associates (1973) reported that turnover in later phases of career development for the new college recruits is more likely to occur among those who experienced severe disillusionment during the first year in their organizational lives. Results of their study suggested that (a) new college graduate employees tend to emphasize the importance of having an opportunity to use their own abilities, interesting work, an opportunity to get ahead, and a feeling of accomplishment. (b) They tend to be optimistic in their expectations about the occurrence of these job features on their forthcoming job after graduation. (c) However, these job features are usually hard to realize on their first job. (d) To the extent that the discrepancy between expectations and actual experiences on the job fails to be narrowed, motivation to make progress on the job deteriorates. (e) A separation from the company starts to take place among those who are most disillusioned. Moreover, studies reported by Graen and his associates (1973), Johnson and Graen (1973), Hall and Nougaim (1968) suggest that work attitudes and job performance are also affected by this early-stage disillusionment.

(3) *The potential hypothesis* states that the newcomer's potential, identified at the start of a career, explains variations in outcomes of career progress at later stages (Bray and

Grant, 1966; Dunnette, 1971; Finkle, 1976). Bray and his associates (1966 and 1974) conducted a pioneering study in this field at AT&T. In their study, a group of college graduates recruited by the Bell Telephone Company went through a series of test sessions called the "assessment center." The recruits' performance on each test was rated by the assessment staff members along 25 psychological dimensions assumed to be predictive of a newcomer's progress in the organization. In addition, staff members rated overall potential of each recruit based on all of the test results. Predictive validity of staff ratings was examined, using the level of managerial responsibility and the pay level each recruit attained after eight years in the Bell System as criteria outcomes of management progress. It was found that out of 61 college recruits who were predicted to have the potential to reach the district manager level, 39 (64 percent) actually realized the prediction. On the other hand, the ratio was found to be significantly lower (32 percent or 20 out of the 62 recruits) for those who were judged as failing to reach the district level, compared to their high potential colleagues. Overall staff judgement also predicted the recruits' salary levels after eight years with a median correlation at the $r = .48$ level. In response to the AT&T experiment, assessment centers were established at Standard Oil of Ohio (Thomson, 1970), IBM (Greenwood and McNamara, 1967; Hinrichs, 1969; Wollowich and McNamara, 1969), Sears (Bentz, 1971), and many other companies. After reviewing major assessment center studies, Dunnette (1971) concluded that in general they produced satisfactory levels of reliability and predictive validity.

For the purpose of empirical testing, each

hypothesis was further specified as to “how” it can contribute to the management progress in the organization. For the role-making hypothesis, it was assumed that the high quality leader-member relation may involve an exchange of critical resources between the parties of the relationship. The member should receive from his leader (a) assistance and support, (b) understanding of his expectations and problems, (c) job latitude and authority, (d) inside information and feedback, and so forth. On the other hand, the leader may expect to receive from his member critical contributions in regard to (a) expenditure of time and energy beyond formal expectations, (b) high quality work on certain vital projects, (c) performance of various protective acts to keep the unit and the leader from looking bad, (d) certain role behaviors to maintain a good atmosphere within the unit, and the like. Following Graen (1976), this resource/contribution exchange relation between the leader and his member is called *Vertical Exchange* (VE) for the present study. The level of VE each newcomer experienced during his first-year period within the organization is used as one of the predictors of management progress for the subsequent time periods.

For the disillusionment hypothesis, an assumption was made that the development of a negative attitude (i. e., disillusionment) toward one’s career role during early phases may “turn off” the newcomer for management progress in the subsequent phases. This hypothesis is not directed toward answering why disillusionment occurs, but is directed toward exploring how the formation of this negative attitude at the start of a career (whatever its causes) comes to affect a newcomer’s progress later. For our study, *Role Disillusionment* (RD) of the newcomer during the first year was evaluated and used as the

second predictor of management progress.

Third, the potential hypothesis was examined based on the *Assessed Potential* (AP) at the point of employment. Korman hinted that the potential implies, “the general level of adequacy with which the person will be able to function in a complex environment and the extent to which he will be able to handle the various stresses which exist in the managerial role” (Korman, 1961, p. 317). This *general adequacy hypothesis* on individual potential was tested in our study, using various outcome measures of the developmental process.

Method

In 1972, the Management Progress Study was started in order to monitor the process of progress over a three year period and was based on three large business organizations in Japan: two department stores and one auto manufacturing organization. For the present study, results derived from one of the department store organizations (hereafter called the DEPART organization) are presented.

Sample and Setting

In April, 1972, 85 male college graduates started their career in the DEPART organization. They were all fresh from college and had no prior experience of formal employment. They all passed the company’s employment tests. The average age was 23.6 with more than 80 percent distributed between 23 and 24. All sample newcomers started their jobs at the same hierarchical position. In total, 87 percent of the recruits earned their bachelor degrees in humanities and social science fields and 13 percent of them in engineering or in industrial arts and design fields. The engineering field recruits were

offered a slightly higher starting salary compared to their social science field colleagues, but within each category no further individual differences were observed. All recruits went through the two-month training program called *kensyū*. After that they were given their first formal assignments at either branch stores or main offices. About 70 percent of them engaged in sales jobs, while the rest of them were assigned to the department of import/export, interior design, personnel, accounting, etc., depending mainly upon their educational backgrounds. Very few interdepartmental moves took place during the three-year monitoring period. A pair composed of a focal newcomer and his supervisor was chosen as the unit of observation. This newcomer-supervisor unit, called a "vertical-dyad linkage" (Graen, 1976), was monitored using a questionnaire method at seven different points in time during the first three years of the recruit's career. During this period, all recruits changed their supervisors at least once. Whenever changes occurred, new vertical dyads were identified for further monitoring.

Procedure

The first wave monitoring was conducted in June, 1972, two months after employment, with the following procedures. First, a list of names of the newcomers and their supervisors was provided by the DEPART organization. A list of names matched in terms of the vertical dyad linkage made it possible for us to "individualize" the questionnaire. The individualization of the questionnaire was made so that each party in the dyadic relation received his "own" questionnaire that showed the name of his opposite party on the front page. For the newcomer's questionnaire, an instruction stated that "In this questionnaire

whenever you find questions asking your opinion about *Your Supervisor*, please answer them regarding *Mr. (his supervisor's name)*." Likewise, the questionnaire for the supervisor carried an instruction saying, "In this questionnaire, whenever you find questions asking your opinions about *Your Subordinate*, please answer them regarding *Mr. (the subordinate's name)*." Since the questionnaire was made so personal, confidentiality of individual responses was emphasized. The individual questionnaires prepared this way were distributed through the company's mailing system. The respondents were asked to return them within about two weeks either by ordinary mail or by using the company's mailing system. Basically the same procedures were repeated for the rest of the six monitoring waves. Table 1 (on page 12) shows time intervals for the seven different monitoring periods conducted between 1972 and 1975. The first wave monitoring was designed for the purpose of questionnaire development. From the second and thereafter, a standard set of questions were administered at each wave.

Predictor Scales

Predictor scales corresponding to our three hypotheses were constructed in the following manner. The *vertical exchange* scale was developed based on the idea of negotiating latitude used by Dansereau and his associates (1975). To evaluate a broader range of topics than that of Dansereau, our study posed eleven questions associated with the leader-member exchange including: approachability and flexibility of the supervisor, his willingness to use his authority to help the newcomer solve problems, clarity of expectations and feedback, the newcomer's latitude to influence the supervisor to change his role situation, and chances to share "after-hour" social and leisure activities. Both

newcomers and their supervisors were asked to respond as to the extent they experienced the exchange of each role episode using a 4-point scale. The newcomer's reports during the first year period (Waves 2 and 3) on this instrument were averaged for use as a predictor of outcomes in the second- and third-year monitoring periods.

The second measure, *role disillusionment*, was designed to evaluate the impact of environmental and structural aspects of the organization upon the newcomer's attitude toward either leaving or staying with the organization. Newcomers were asked to report the extent to which the structural aspects made them feel like quitting or staying with the organization: e. g., chances of participation, amount of authority, job content, supervisor's treatment, opportunities for learning, chances of pay increases, and prospect of the company. Response alternatives ranged from "Strong impact to make me feel like quitting the company" (the lowest, -3 point) to "Strong impact to make me feel like staying with the company" (the highest, +3 point), with a neutral point (0) that states "No impact at all." Based on the results of factor analysis, 9 items were selected out of the total 19 items to be included in the role disillusionment scale. Like vertical exchange, the average disillusionment scores reported by the newcomer during the first-year period were used as a predictor of later outcomes.

The third scale, *potential*, was constructed by using information derived from the company's screening process of job applicants. The company's selection procedures consisted of the following two steps. First, all applicants attended a one-day session of paper-and-pencil tests: a Sentence Completion Test, an essay test, and a test of English proficiency. The last two tests were prepared by the com-

pany, but the first one was tailor-made. Personnel staff members of the company read tests and evaluated them along the following scoring keys: the Sentence Completion Test was rated in terms of *Intelligence* using a 4-point scale, and in terms of *Personality Type* along three prescribed categories for classification; the essay was rated using a 4-point scale; the test of English proficiency was rated using a 100-point scale. About two weeks later, a group of applicants who passed the first-stage screening, based on the evaluation of the above test results and other information that was not rated mechanically (academic achievement, a personal history blank, references, etc.), were called back to have an interview for final selection. The interview was conducted by a team of five company executives. Interviewers reviewed test scores and the background information of each applicant. Based on this knowledge and performance evaluation of an applicant at interview, they rated each applicant using a 4-point scale.

A composite potential scale was created by using scores for the intelligence test, the essay test, the English test, and the interview. These four scores were standardized with a mean of 50 and a standard deviation of 20. Then a potential scores was computed by summing them and dividing the aggregate by four for each newcomer.

Outcome Measures

A set of outcome measures used for the study was classified into the following three categories: (a) exchange (or interpersonal) outcomes, (b) role outcomes, and (c) career outcomes. The *exchange outcomes* included the "soft" criterion outcomes representing the "immediate," "specific," and "short-term" results of individual behaviors (Smith, 1976).

Conversely, *career outcomes* denoted the “hard” criteria representing the “remote,” “general,” and “long-term” results of individual behaviors in the organization. The *role outcomes* included personal and organizational outcomes considered as the intermediate results in terms of a “soft-hard” continuum.

1. Exchange outcomes consisted of measures for Job Problem, Job Need Fulfillment, and Job Challenge. (1) The *Job Problem* scale was developed based on the study by Dansereau and his associates (1975). For our study, 33 items that indicated obstacles to progress were presented on a 5-point scale to evaluate: (a) how “frequently” the newcomer experiences each of the problems and (b) how “severely” he sees the problem affecting his endeavor for progress. This instrument produced two factors. The first *dyadic problem* factor denoted poor vertical communication, a lack of proper instructions, no chances of participation, a lack of authority, and the like, while the second *climate problem* factor indicated such problems as backbiting, cliques, invasion of privacy, favoritism, rigid seniority, etc. (2) The *Job Need* instrument consisted of 17 leadership activities relating to the “consideration” and “initiating structure” (Stodgill and Coons, 1957). For our study, 17 questions were designed to measure the newcomer’s perception of his role situation in terms of a “need fulfillment” scheme (Porter, 1961 and 1962). That is, the newcomer was asked to report using a 5-point scale: (a) how much of each leadership activity is being “received” from his supervisor, and (b) how much he “prefers” to have. The receiving dimension corresponds to what Porter called “now” and the preferring dimension to “should.” Each supervisor was also asked to respond: (a) how much opportunity he “pro-

vided” to his subordinate, and (b) how much he perceived his focal “wanted” to have. Two factors were derived from this instrument: *leadership support*, represented by such items as supervisor’s consideration, his attention, trust by the supervisor, feedback and support from him, etc., and *job enrichment*, represented by participation, chances to put one’s own ideas into work, autonomy, opportunities for learning, inside information, and the like. (3) The *job Challenge* scale used 20 episodes indicating task characteristics of job challenge. Each newcomer and his supervisor responded using a 5-point scale regarding how frequently the newcomer experienced each of the episodes connected with his job. Job challenge episodes were factored into the following two scales. The first factor that indicated the experience of *increased centrality* was composed of such incidents as opportunities for visible contribution and recognition, learning supervisory skills, being consulted by the supervisor with important decisions, and the like. The second factor named *task demand* denoted episodes of doing tasks that challenge one’s ability, doing planning and coordinating tasks, making formal reports, participating in innovative tasks and problem solving, speaking for the supervisor and the company, etc. The job challenge instrument was administered only at the last period, wave 7.

2. The role outcomes consisted of the Organizational Commitment, Need Deficiency, Job Performance, and Success Potential scales. Role Disillusionment reported by the newcomer after the first-year period was also considered as a part of role outcomes. (1) Organizational Commitment was designed following the study by Porter and his associates (1976). For our study, 16 questions were

asked of the newcomer using a 7-point scale. The first factor derived from this instrument comprised the *psychological value of the organization* for the newcomer: pride of being a member of the company, willingness to work harder, encouragement by the company climate and policies, willingness to recommend the company as a place to work, a hope for the company's development, and the like. The second, *risk of committing* factor, was negatively loaded by such items as willingness to move for better pay and a better job, willingness to quit if conditions become worse, doubt about company policies and treatments, and the like. (2) The Need Deficiency scale was constructed as a measure of discrepancy (D) between the Job Need Preferred (JNP) and Job Need Receiving (JNR) in such a manner as, $D^2 = \sum (JNP - JNR)^2 / n$. The D^2 s were computed for the *leadership support* and *job enrichment* factors separately. The discrepancy scores implied that the smaller the D^2 , the greater the satisfaction, and vice versa (Lawler, 1973; Porter, 1961 and 1962). To check this assumed relationship, a single overall satisfaction scale was also administered. (3) *Job Performance* employed 9 items consisting of accountability, alertness, interpersonal skills, planning, technical skills and know-how, the level of contribution, interpersonal attraction, and willingness to contribute to the company. The supervisor was asked to rate his focal's behavior on each dimension using a 5-point scale. A composite performance rating was created as an aggregate of 9 scores for each newcomer. (4) In addition, the supervisor was also asked to evaluate the newcomer's *Success Potential* using a 5-point scale in terms of likelihood on the following three dimensions: (a) general promotability, (b) success as a line manager, and (c) success as a staff specialist. (5) *Role Disillusionment*

produced two factors: disillusionment with *role content*, and with *profitability of the organization*. As discussed earlier, the first-year disillusionment measured in terms of the role content factor served as a predictor of the other outcomes.

3. The career outcomes included the Performance Index, the Potential Index, Bonus, and the Right Type scale. (1) The *Performance Index* was created based on the company's performance appraisals corresponding to our fourth, fifth, sixth and seventh waves of research. Original rating scores were standardized within each appraisal point. Then, average ratings over four appraisal points were computed as an index of performance. (2) The *Potential Index* was created by using the company's reappraisal on newcomer's potential. The reappraisal was conducted at the end of the third year based on the "multiple rater" method. For each newcomer, a team of raters (the boss, the supervisor, assistant supervisors, peers, personnel staff members and the focal himself) were identified. They evaluated the focal's potential using a 6-point scale with respect to: (a) technical skill, (b) administrative skill, (c) interpersonal skill, (d) energy, and (e) intelligence. For our analysis, an average potential index was computed for each newcomer by aggregating all ratings across dimensions and across raters. (3) The amount of *Bonus* awarded during the last research period was found to be the only piece of pecuniary data that showed any meaningful variance to be analyzed. The straight yen value was subject to the analysis. (4) Finally, the *Right Type* scale was developed based on the supervisor's report at the final wave of monitoring, indicating to what extent he perceived his newcomer as: (a) attracted to the company, (b)

TABLE 1
Instrument and Its Administration

Instrument	Number of Items	W ¹ (6/72)	W ² (11/72)	W ³ (3/73)	W ⁴ (7/73)	W ⁵ (11/73)	W ⁶ (3/74)	W ⁷ (3/75)
● <i>Newcomer</i>								
Organizational Commitment	(16)	×	×	×	×	×	×	×
Role Disillusionment	(19)	×	×	×	×	×	×	×
Job Need: Receiving	(17)	×	×	×	×	×	×	×
Job Need: Preferred	(17)	×	×	×	×	×	×	×
Job Problem: Frequency	(33)	—	×	×	×	×	×	×
Job Problem: Severity	(33)	×	×	×	×	×	×	×
Vertical Exchange	(11)	—	×	×	×	×	×	×
Job Satisfaction	(1)	—	×	×	×	×	×	×*
Job Challenge	(20)	—	—	—	—	—	—	×
● <i>Supervisor</i>								
Job Performance	(9)	×	×	×	×	×	×	×
Success Potential	(3)	×	×	×	×	×	×	×
Job Need: Providing	(17)	×	×	×	×	×	×	×
Job Need: Wanting	(17)	×	×	×	×	×	×	×
Vertical Exchange	(11)	—	×	×	×	×	×	×
Job Satisfaction	(1)	—	×	×	×	×	×	×*
Job Challenge	(20)	—	—	—	—	—	—	×
● <i>Interview</i>								
		×	×	×	×	×	—	—
● <i>Company Record</i>								
		×	×	×	×	—	—	×

Note: × denotes that instrument was administered, and * means that the *satisfaction* instrument at this wave included 7 items.

a right-type person for the company, and (c) likely to make progress in the company.

Table 1 indicates that a set of variables derived from the Organizational Commitment, Role Disillusionment, Job Need and Need Deficiency, Job Problem, Vertical Exchange, Job Performance, and Success Potential instruments can be analyzed by using a repeated-measure ANOVA involving the time periods between Waves 2 and 7. Company records provided information on personal background of the newcomer and on structure of the work unit. This information is utilized as exogenous sources of variance to explain managerial progress. Interviews provided no quantitative data, because they served primarily for enhancing rapport between researchers and respondents.

Analysis

The purpose of analysis was to determine predictive validity of each of the three predictor scales. The predictive design called for explaining outcomes from the process of management progress, based on the pre-entry and the first year experiences of the newcomer. The effect of the "critical first year" (Hall and Nougaim, 1968) was examined by the first-year vertical exchange, the VE (FY) scale, and the first-year role disillusionment, the RD (FY) scale, while the assessed potential, AP scale represented the effect of pre-entry experiences. The predictive validity of each hypothesis was tested by using a repeated measure ANOVA method (Winer, 1971), with each of the three predictors (trichotomized into High, Mid, and

Low groups) serving as an independent variable, and with outcome variables measured at five different points in time (first year, waves 4, 5, 6, and 7) as dependent variables. The design of proof followed the method of “strong inference” (Platt, 1964): (a) each hypothesis is tested as if it were independent from the other, (b) results will be examined against the alternative hypothesis, (c) the surviving hypothesis again is subject to testing for the alternative explanations, and so on.

Results

Prior to the statistical testing, reliability of

composite scales based on the factor analysis were examined in terms of Cronbach's alpha coefficients. Tables 2 and 3 display the results of the newcomers' and supervisors' reports respectively. Reliability estimates range from .67 to .92 for the newcomer and from .71 to .94 for the supervisor, and they are all within the acceptable range. The test-retest reliability was also computed. The results indicated that (a) for the newcomers' reports, coefficients are highly stable, but (b) they fluctuate for the supervisors' reports because of frequent supervisor changes between the successive monitoring waves.

TABLE 2
Reliability Coefficients (Cronbach's Alpha)
of the Factor Scale Computed for Newcomer's Reports
(N=80)

Factor Scale	Monitoring Period					
	W ²	W ³	W ⁴	W ⁵	W ⁶	W ⁷
Vertical Exchange (11)	.87	.90	.92	.90	.91	.91
Job Problem: Frequency						
Dyadic Problems (11)	.79	.79	.72	.69	.79	.78
Climate Problems (8)	.69	.67	.75	.71	.80	.71
Job Problem: Severity						
Dyadic Problems (11)	.79	.88	.85	.78	.85	.88
Climate Problems (8)	.81	.82	.81	.78	.84	.81
Job Need: Receiving						
Leadership Support (7)	.85	.90	.91	.91	.90	.88
Job Enrichment (7)	.88	.89	.92	.90	.93	.91
Job Need: Preferred						
Leadership Support (7)	.77	.84	.86	.86	.92	.87
Job Enrichment (7)	.80	.80	.86	.86	.93	.89
Job Challenge						
Centrality (8)	—	—	—	—	—	.92
Task Demand (7)	—	—	—	—	—	.86
Job Satisfaction (7)	—	—	—	—	—	.80
Role Disillusionment						
Role Content (9)	.91	.90	.91	.91	.92	.85
Profitability (7)	.83	.81	.82	.81	.85	.80
Organizational Commitment						
Value of the Organization (9)	.81	.78	.78	.79	.76	.77
Risk of Committing (4)	.73	.79	.71	.79	.69	.78

Note: Figures in parentheses denote number of items included in each scale.

TABLE 3
Reliability Coefficients (Cronbach's Alpha)
of the Factor Scale Computed for Supervisor's Reports
(N=80)

Factor Scale	Monitoring Period					
	W ²	W ³	W ⁴	W ⁵	W ⁶	W ⁷
Vertical Exchange (11)	.77	.76	.91	.73	.81	.73
Job Need: Providing						
Leadership Support (7)	.71	.72	.86	.78	.77	.76
Job Enrichment (7)	.81	.83	.90	.82	.83	.76
Job Need: Wanting						
Leadership Support (7)	.80	.84	.92	.81	.82	.85
Job Enrichment (7)	.82	.84	.92	.86	.84	.86
Job Challenge						
Centrality (8)	—	—	—	—	—	.87
Task Demand (7)	—	—	—	—	—	.84
Job Performance (9)	.88	.92	.94	.92	.90	.93

Note: Figures in parentheses denote number of items included in each scale.

Test of the Three Hypotheses

For the purpose of analysis, predictors corresponding to the role-making, disillusionment, and potential hypotheses were trichotomized: i. e., the VE (FY) was classified into the High (=28), Mid (=29) and Low (=23) groups, and RD (FY) into the High (=24), Mid (=30) and Low (=26) groups, and the AP into the High (=27), Mid (=29) and Low (=24) groups. For the repeated measure ANOVA, the predictor and time factors were fixed, with the subject as a random factor, and crossed with a time factor. The time factor had five levels (first year, 4th, 5th, 6th, and 7th waves). The 80 newcomers out of the original 85 sample were available for the above analyses.

Table 4 displays a summary of ANOVA tests performed for each hypothesis separately. For all outcome measures, the VE (FY) factor produced the significant, hypothesized effect except for the job problem severity scales. That is, the results indicated that the higher the vertical exchange during the first year, (a) the higher the job needs receiving, job

challenge, and organizational commitment, and (b) the lower the job problem frequency, disillusionment, and need deficiency for the subsequent time periods. The vertical exchange variable reported after the first year showed a result consistent with the above results. Moreover, the newcomers' reports described above were strongly supported by the supervisors' reports (job need, vertical exchange, job challenge, and performance ratings) and by the "profile similarity" (Graen and Schieman, 1978) scale. The RD (FY) factor produced basically the same results as those of the VE (FY) for the newcomers' reports: i. e., the lower the disillusionment, the higher the job need receiving, vertical exchange, commitment, and so on. But, for the supervisors' reports the RD (FY) failed to show the consistent effect: the leadership support was the only variable that produced a result consistent with the hypothesis. For job performance, the Low RD (FY) group showed the highest level across three years, but for the Mid and High groups, levels of performance was contrary to the hypothesis.

TABLE 4
The ANOVA Test Results for the Role Making,
Disillusionment, and Assesed Potential Hypotheses
(N=80)

Dependent Variable	Factor Corresponding to Each Hypothesis			Time
	VE (FY)	RD (FY)	AP	
●Newcomer's Report				
Job Need: Receiving				
Leadership Support	**	**	×	**
Job Enrichment	**	**	×	**
Job Problem: Frequency				
Dyadic Problem	**	**	×	×
Climate Problem	×	×	×	**
Job Problem: Severity				
Dyadic Problem	×	×	×	**
Climate Problem	×	×	×	**
Vertical Exchange	**	**	×	**
Job Challenge				
Increased Centrality	**	**	×	—
Task Demand	**	**	×	—
Organizational Commitment				
Value of Organization	**	**	×	×
Risk of Committing	×	×	×	×
Role Disillusionment				
Role Content	**	**	×	×
Profitability	×	**	×	×
Need Deficiency (D ²)				
Leadership Support	**	**	×	**
Job Enrichment	**	**	×	×
●Supervisor's Report				
Job Need: Providing				
Leadership Support	**	*	×	**
Job Enrichment	**	×	×	**
Vertical Exchange	**	×	**	**
Job Challenge				
Increased Centrality	*	×	×	—
Task Demand	*	×	×	—
Job Performance	**	*	***	**
Success Potential	*	×	***	×
●Profile Similarity				
	**	**	×	**

Note: *...p<.05, **...p<.01, ***...Significant interaction at p<.05; ×...Nonsignificant, —...Not applicable.

The AP potential factor produced no effect at all for the newcomers' reports, but its effect appeared to be significant for supervisors' reports on vertical exchange, job performance, and success potential scales. For the latter two outcomes, divergence among

the three AP groups over three years registered the significant AP × Time interaction effects. Finally, an examination of the time effect indicated that for the job need receiving, vertical exchange, and job performance scales, means showed an increasing trend

TABLE 5
Summary of Predictive Correlation Coefficients for
Career Outcomes and Wave 7 Ratings Based on the
VE (FY), RD (FY), and AP Scales (N=80)

Predictor	Career Outcome				Rating at Wave 7	
	Performance Index	Potential Index	Bonus	Right Type	Job Performance	Success Potential
VE (FY)	.13	.22*	.11	.28**	.27*	.25*
RD (FY)	.03	.15	.03	.19	.13	.10
AP	.24*	.26*	.30**	.34**	.38**	.39**

Note: *... $p < .05$, **... $p < .01$.

during the period between the first year and wave 7, while for the job problems, need deficiency and profile similarity scales, the trend was just the opposite.

Table 5 shows correlation coefficients between the three predictors and a set of career outcomes measured at the end of the third year. The AP potential factor produced the strongest predictive correlations with career outcomes and wave 7 ratings. The VE (FY) also showed consistent predictive validity, while the RD (FY) produced no significant effect at all upon criterion outcomes.

In summary, Tables 4 and 5 indicate that the VE (FY) factor representing the role-making hypothesis had the most consistent predictive validity. It explained exchange outcomes (job need, job challenge, and job problems) as well as role outcomes (commitment, need deficiency, role disillusionment, performance ratings), which were derived from the process of management progress during the first three years in the organization. Moreover, the VE (FY) showed significant correlation with career outcomes at the end of the third year. The RD (FY) explained exchange outcomes and role outcomes reported by the newcomer, but it showed very little validity for supervisors' reports and career outcomes. The explanatory power of the first-year role disillusionment seems to be confined "within"

the newcomer himself. Conversely, the AP potential factor explained nothing about the newcomer's reports during the first three years. If potential implies the general level of adequacy of the newcomer to cope with environmental pressures as Korman (1968) suggested, the AP factor for our study must indicate a sign of such adequacy reported by the newcomer. Instead, the AP factor showed strong predictive power for the harder career outcomes.

Partial Predictive Validity

The preceding discussions raise the question to what extent predictive power of each hypothesis is free from the influence of the other. Each of the three hypotheses was evaluated against the other two for the purpose of eliminating spurious predictive validity caused by other factors. This was done by computing partial correlation coefficients between each of the three predictors and outcome variables, holding the other two predictor variables constant. Tables 6, 7, and 8 show results. In Table 6, partial predictive validity of the VE (FY) was examined by calculating correlation coefficients between the VE (FY) and the selected outcome variables reported by the newcomer, by controlling the effects of RD (FY) and AP factors. The VE (FY) remained predictive of vertical exchange

TABLE 6
Correlation Coefficients Between the VE (FY) Scale and a Set
of Variables Reported by the Newcomer at Five Different Time Periods,
Controlling the RD (FY) and AP Factors (N=80)

Newcomer's Report	Time Period				
	FY	W ⁴	W ⁵	W ⁶	W ⁷
Value of Organization	-.35 (.27)	-.02 (.35)	-.06 (.30)	-.09 (.23)	-.03 (.25)
Role Disillusionment	× (.73)	.20 (.52)	.16 (.46)	.33 (.52)	.06 (.41)
Leadership Support	.33 (.70)	.32 (.53)	.39 (.59)	.40 (.59)	.28 (.52)
Need Deficiency with Leadership Support	-.30 (-.62)	-.33 (-.45)	-.02 (-.35)	-.37 (-.50)	-.20 (-.37)
Vertical Exchange	1.00 (1.00)	.51 (.62)	.44 (.61)	.47 (.60)	.23 (.43)

Note: Figures in parentheses denote zero-order correlation coefficients.
 For partial correlations with $r \geq .23$ and $r \geq .28$, $p < .05$ and $p < .01$, respectively.
 For zero-order correlations with $r \geq .22$ and $r \geq .28$, $p < .05$ and $p < .01$, respectively.
 × denotes control variable.

TABLE 7
Correlation Coefficients Between the RD (FY) Scale and a Set
of Variables Reported by the Newcomer at Five Different Time Periods,
Controlling the VE (FY) and AP Factors (N=80)

Newcomer's Report	Time Period				
	FY	W ⁴	W ⁵	W ⁶	W ⁷
Value of Organization	.68 (.64)	.39 (.50)	.38 (.46)	.34 (.40)	.27 (.36)
Role Disillusionment	1.00 (1.00)	.32 (.56)	.27 (.50)	.09 (.43)	.34 (.51)
Leadership Support	.50 (.75)	.13 (.47)	.11 (.49)	.10 (.49)	.18 (.49)
Need Deficiency with Leadership Support	-.38 (-.66)	-.02 (-.35)	-.08 (-.31)	-.00 (-.37)	-.10 (-.34)
Vertical Exchange	× (.73)	-.08 (.41)	.03 (.46)	-.05 (.41)	.12 (.39)

Note: Figures in parentheses denote zero-order correlation coefficients.
 For partial correlations with $r \geq .23$ and $r \geq .28$, $p < .05$ and $p < .01$, respectively.
 For zero-order correlations with $r \geq .22$ and $r \geq .28$, $p < .05$ and $p < .01$, respectively.
 × denotes control variable.

TABLE 8
Partial Correlation Coefficients Between Each of the
Three Predictors, and Job Performance and Career Outcomes,
Holding Other Predictors Constant (N=80)

Independent Variable	Control Variable	Job Performance					Career Outcome		
		FY	W ⁴	W ⁵	W ⁶	W ⁷	Potential Index	Bonus	Performance Index
VE (FY)	AP	.02	.28*	.17	.23*	.21	.12	.09	.13
	RD (FY)	(.17)	(.25*)	(.21)	(.14)	(.27*)	(.22*)	(.11)	(.13)
AP	VE (FY)	.16	.08	.28*	.14	.38**	.27*	.31**	.24*
	RD (FY)	(.18)	(.09)	(.28**)	(.13)	(.38**)	(.26*)	(.30**)	(.24*)
RD (FY)	VE (FY)	.09	-.16	-.09	-.19	-.09	.00	-.07	-.09
	AP	(.17)	(.08)	(.08)	(-.03)	(.13)	(.15)	(.03)	(.03)

Note: Figures in parentheses show zero-order correlation coefficients.
 *... $p < .05$, **... $p < .01$.

itself, need deficiency, and leadership support, even after the RD (FY) and the AP factors were controlled. The result was more or less true for role disillusionment. For organizational commitment (value of organization) the predictive validity of the VE (FY) was washed away completely. Table 7 indicates that partial predictive validity of the RD (FY) remained significant only for organizational commitment and role disillusionment itself, once the effects of VE (FY) and AP factors were removed. The AP potential factor produced no significant relationship with newcomer's reports in terms of either zero-order or partial correlations. In Table 8, partial predictive validity for job performance and career outcomes were examined. The AP potential factor maintained the strongest predictive validity after the effects of alternative hypotheses were partialled out. Predictive validity of the VE (FY) was not affected very much after removing the effects of RD (FY) and AP factors. On the other hand, the RD (FY) failed to show any predictive validity in terms of both zero-order and partial correlation coefficients. The above results were also confirmed by ANOVA tests. Residual performance scores obtained after each predictor factor controlled were subjected to repeated ANOVA tests. The effect of VE (FY) remained significant at the $p < .001$ level and the AP factor showed a significant $AP \times Time$ interaction effect ($p < .05$), but the RD (FY) failed to show a significant result.

Impact of Exogenous Factors

The preceding discussions point to the consistent predictive validity of the VE (FY) factor. The VE (FY) effect was further tested against the alternative hypothesis stating that the quality of vertical exchange is determined by the "exogenous" factors (personal

background variables and structural variables of the work unit), rather than by the "endogenous" interpersonal relations. If this alternative hypothesis is true, (a) vertical exchange and other outcome variables reported by the newcomer are primarily determined by the exogenous factors, not by what the supervisor is doing vis-a-vis the newcomer in terms of vertical exchange: i. e., the supervisor's VE activities have no significant contribution to outcomes reported by the newcomer after the exogenous factors are controlled. Likewise, (b) the newcomer's VE activities have no significant contribution in explaining outcomes reported by the supervisor after exogenous factors are controlled. Conversely, if the VE activities are basically independent of exogenous constraints, they should have significant effects upon outcomes in such a manner that vertical exchange experienced by the newcomer explains the supervisor's reports and, conversely, vertical exchange by the supervisor explains the newcomer's reports, holding the exogenous variables constant.

The above hypothesis was tested by using information collected at the wave 4 period. The structural constraint was measured by the following 11 variables: supervisor's status, his age, his educational level, his tenure, supervisor change between waves 3 and 4, newcomer's job type, unit size, percentage of male employees, and three dummy variables for the location of work. The personal background of the newcomer included the following 7 variables: AP potential, personality type, *Conne* (or "connection" for exercising influence upon company's hiring decisions), newcomer's age, and three dummy variables for the educational background. The following three steps were required for testing of the hypothesis. (a) Each of the newcomer's reports was regressed on the total 18 exoge-

TABLE 9
Contribution of Vertical Exchange to Newcomer's and Supervisor's Reports
after Structural and Personal Background Variables are Controlled
(N=80)

Subjects' Reports	Variable Set							
	Structural Variables	Structural plus Personal plus Background Variables			Structural plus Personal plus Vertical Exchange ^a			t
	R ₁ ²	R ₂ ²	Rd ²	F	R ₃ ²	Rd ²	F	
● Newcomer's Report								
Vertical Exchange	.20	.26	.06	.72	.31	.05**	4.39	*
Organizational Commitment								
Value of Organization	.11	.18	.07	.75	.24	.06**	4.82	*
Risk of Committing	.12	.19	.07	.76	.26	.07**	5.72	*
Role Disillusionment								
Role Content	.21	.25	.04	.45	.31	.06**	5.30	*
Profitability	.24	.35	.11	1.50	.44	.09**	9.64	**
Job Need: Receiving								
Leadership Support	.28	.32	.04	.52	.35	.03*	2.78	—
Job Enrichment	.13	.17	.04	.41	.20	.03*	2.41	—
Job Need: Preferred								
Leadership Support	.16	.24	.08	.93	.27	.03*	2.49	—
Job Enrichment	.11	.17	.06	.64	.20	.03	2.27	—
Need Deficiency (D ²)								
Leadership Support	.20	.25	.05	.58	.26	.01	.80	—
Job Enrichment	.14	.20	.06	.66	.21	.01	.76	—
Job Problem: Frequency								
Dyadic Problem	.13	.19	.07	.78	.19	.00	.05	—
Climate Problem	.13	.28	.15	1.95	.29	.01	.32	—
Job Problem: Severity								
Dyadic Problem	.18	.22	.04	.45	.23	.01	.79	—
Climate Problem	.20	.27	.07	.96	.27	.00	.04	—
● Supervisor's Report								
Vertical Exchange	.10	.30	.20*	2.53	.33	.03*	2.77	*
Job Need: Providing								
Leadership Support	.08	.11	.03	.30	.18	.07**	5.18	*
Job Enrichment	.19	.27	.08	.97	.31	.03*	2.64	*
Job Need: Wanting								
Leadership Support	.14	.19	.05	.55	.23	.04*	3.16	*
Job Enrichment	.24	.30	.06	.77	.32	.02	1.79	—
Job Performance	.10	.16	.06	.63	.33	.17**	15.63	**
Success Potential	.19	.30	.11	1.46	.41	.11**	11.47	**

Note: *...To explain newcomer's reports, vertical exchange reported by the supervisor, VE (S) was introduced, while for the supervisor's reports, VE (F) was introduced.

t...Test of regression coefficients for the VE (S) and VE (F). The F statistics show results of the significant test for Rd².

*...p<.05, **...p<.01; —...not significant.

nous variables using a regression formula. Then, (b) vertical exchange reported by the supervisor, VE (S), was added to the equations as the 19th variable. (c) Contribution of the VE (S) in explaining the newcomer's

report was determined as an increment of R² between the first and second equations. For the supervisor's reports, vertical exchange reported by the focal newcomer, VE (F), was introduced as the 19th variable, and changes

in R^2 s were subjected to the significance test.

Table 9 shows a summary of results. The R_1^2 displays results of the regression analysis based on the 11 structural variables. These variables explained 8 to 28 percent variance for dependent variables. Next, R_2^2 denotes results based on 18 variables (11 structural variables plus 7 personal background variables). The R^2 s ranged from .11 to .35. Adding personal background variables to the regression equation increased explanatory power of the equation (Rd^2) by 4 to 20 percent. Background variables contributed the greatest portion (20 percent with $F = 2.53$; $p < .05$) for explaining the vertical exchange reported by the supervisor, holding the structural variables constant. The AP potential showed the greatest contribution among background variables, and its coefficient appeared to be significant at $p < .01$. Results for R_3^2 provide information for testing our hypothesis designed to evaluate independent contributions of the VE (S) and VE (F) factors upon newcomer's and supervisor's reports, respectively. First, the VE (S) factor that entered into the regression as the 19th variable, contributed zero to 9 percent extra power (in terms of Rd^2) for explaining outcomes reported by the newcomer. Especially, the supervisor's vertical exchange activity vis-a-vis his newcomer had significant effects upon newcomer's reports on (a) vertical exchange, (b) organizational commitment, (c) role disillusionment, (d) job need receiving and (e) job need preferred, even after the effects of total 18 exogenous variables were removed. On the other hand, the VE (S) added basically nothing for explaining need deficiency and job problems experienced by the newcomer during the wave 4 research period. Second, the VE (F) factor that entered into regressions as the 19th variable for explaining the supervisor's reports,

produced 2 to 17 percent contributions in terms of Rd^2 s, holding the 18 exogenous variables constant. Especially, the newcomer's experience of vertical exchange with his supervisor explained job performance and success potential to a great extent (17 and 11 percent in terms of Rd^2 respectively), followed by leadership support and vertical exchange of the supervisor. Finally, t-statistics for testing VE coefficients showed significant results for most regression equations in which the VE (S) or the VE (F) factor produced meaningful contributions for explaining criterion variance.

In summary, the preceding discussion suggests that: (a) both the VE (FY) and AP potential factors have extensive predictive validity which is not spurious. Each factor has its own unique effect upon outcomes of career development independent of the other predictors. (b) On the other hand, the RD (FY) factor can predict organizational commitment only, holding the VE (FY) and AP factors constant. This finding suggests that vertical exchange may cause variations in disillusionment and other outcome variables, and not that disillusionment causes variations in vertical exchange and outcomes. (c) The quality of vertical exchange affects outcomes beyond the constraints of exogenous variables. This finding implies that the "interpersonal processes" between the newcomer and his supervisor create significant variations in the level of managerial progress under the given personal and structural constraints. Of special note, (d) vertical exchange shows the strongest association with job performance and success potential rated by the supervisor.

Interaction between the VE (FY) and AP Factors

Results presented earlier may suggest the

“two-factor” theory of management development: i.e., the level of management progress is a function of (a) an interpersonal factor and (b) a potential factor of the individual. The fact that correlation between the VE (FY) and AP factors is only .18, implies that each factor is independent of the other. In other words, changes in the VE (FY) are relatively free from changes in the AP. However, the question arises: what is the combined effect between the two factors upon management progress? How can we predict differential outcomes of management progress based on the two factors? Two models are available to answer the above questions in terms of the analysis of variance method (Winer, 1971). The *additive* model suggests that the effect of the AP potential factor upon outcome variables is basically the same at each level of the VE (FY) factor: i.e., the direction and the magnitude of the AP effect

upon outcomes are the same everywhere along the VE (FY) continuum. The “general adequacy” hypothesis on the effect of potential (Korman, 1968) fits this additive model. However, results shown in Table 4 indicate this hypothesis does not work. The alternative *non-additive* model states that the effect of potential upon outcomes is different depending upon the level of the VE (FY) factor. This model implies “partial adequacy” of the potential: potential emits no general effect, and thus its effect is partial (i.e., the potential factor requires another condition for producing the hypothesized effect). The partial adequacy hypothesis must work if the potential factor is to have any tangible effects upon the process of managerial career development.

Our partial adequacy hypothesis was evaluated by examining the combined effect between the VE (FY) and AP factors upon outcomes, based on the 2-way ANOVA design. First,

TABLE 10
Summary of ANOVA Results for Newcomer's Reports
over Time (T) Based on the Classification by AP and VE (FY) Scales
(N=61)

Variable	Probability						
	AP	VE	T	AP×VE	AP×T	VE×T	AP×VE×T
Job Need: Receiving							
Leadership Support	—	**	**	**	—	—	—
Job Enrichment	—	**	**	**	—	—	—
Job Problem: Frequency							
Dyadic Problem	—	**	—	*	—	—	—
Climate Problem	—	—	**	—	—	—	—
Job Problem: Severity							
Dyadic Problem	—	—	**	—	—	—	—
Climate Problem	—	—	**	—	—	—	—
Role Disillusionment							
Role Content	—	**	—	**	—	—	—
Profitability	—	—	—	—	—	—	—
Organizational Commitment							
Value of Organization	—	**	—	—	—	—	—
Risk of Committing	—	—	—	—	—	—	—
Need Deficiency (D ²)							
Leadership Support	—	**	**	—	—	**	—
Job Enrichment	—	**	—	—	—	—	—

Note: *...p<.05, **...p<.01; —...not significant.

newcomers were cross-tabulated into the following four groups by combining the VE (FY) and AP factors: the High AP and High VE group, i.e., the H-H group (n=15), likewise the H-L group (n=16), the L-H group (n=14), and the L-L (n=16) group. Next, outcome variables measured at five different points in time were subjected to the analysis with the VE (FY) and AP factors (both dichotomized) as independent variables for the repeated-measure ANOVA study. The VE, AP and Time factors were fixed, with the subject being a random factor, nested within the VE and AP,

and crossed with the Time factor. The partial effect of the potential factor was hypothesized as follows. (a) The highest progress comes to the H-H group members. (b) Conversely, for the H-L group members progress will become constrained most seriously, because the denial of High potential by the Low VE supervisor is expected to cause a strong negative reaction within the newcomer. This reaction may be stronger for the High potential newcomers probably because of their high "self-esteem" (Korman, 1967), compared to the "self-esteem" level of their Low potential col-

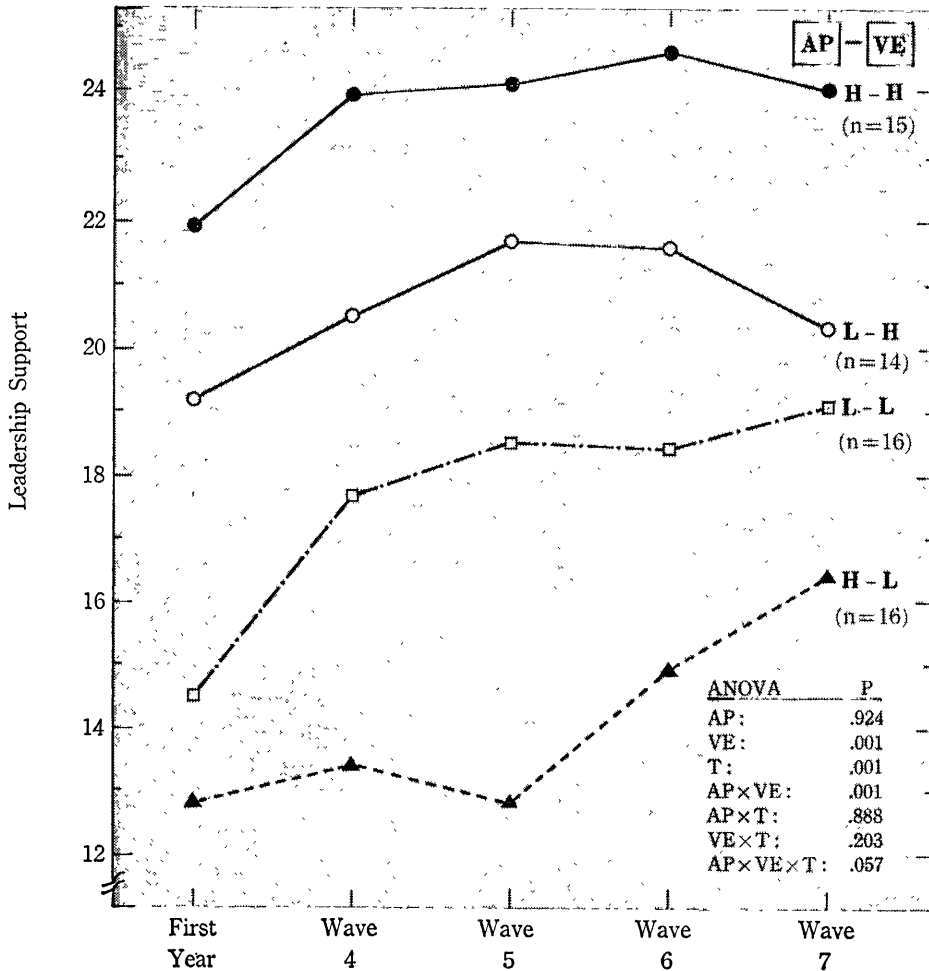


FIGURE 1
Leadership Support over Time (T) Based on the AP and VE (FY) Groups

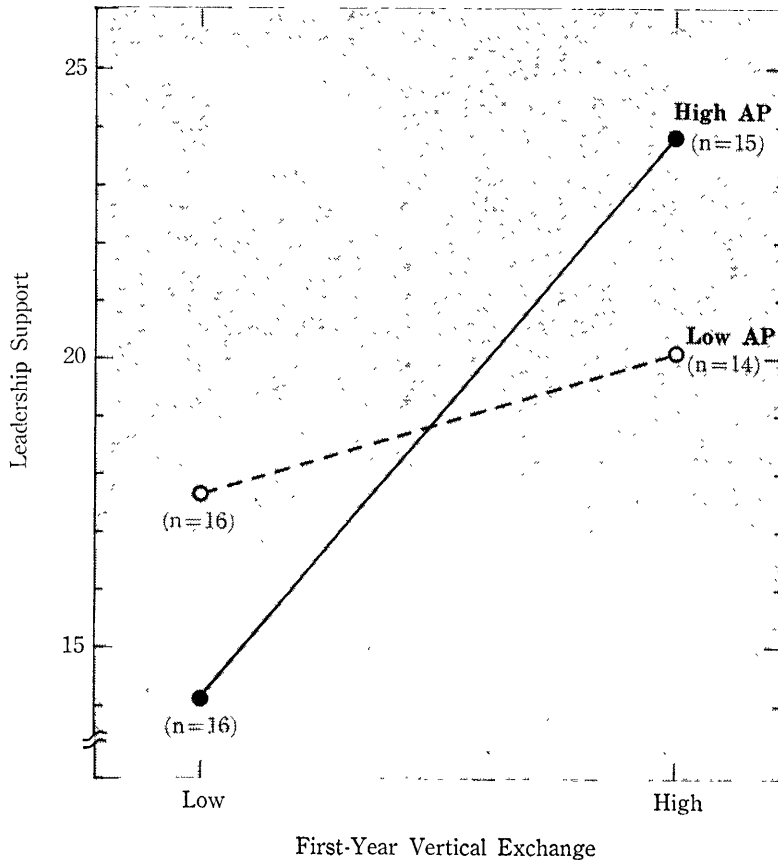


FIGURE 2
Combined Effect Between the AP and VE (FY) Factors
Upon Leadership Support Reported by the Newcomer

leagues. (c) For the L-H and L-L groups (i.e., Low potential groups), the effect of VE (FY) may not be so conspicuous as the one for the High potential groups. Therefore, the two Low potential groups may stay between the H-H and the H-L groups with respect to the level of progress.

Table 10 shows a summary of ANOVA result for the newcomers' reports. First, three main factors (AP, VE, and Time) produced results that are exactly the same as those for the one-way ANOVA (see Table 4). Second, the AP×VE effect produced a pattern of interaction that supports our hypothesis. Figures 1 and 2 display such a pattern. In Figure

1, the highest leadership support is received by the H-H newcomers, followed by the L-H, L-L and H-L group members throughout the first three years in the DEPART organization. Figure 2 displays overall means for leadership support based on the VE (FY) factors. The pattern of mean differences indicates the existence of three distinctive newcomer groups. The H-H group, the H-L group, and the L-H and L-L combined. The ANOVA results produced basically the same result for job enrichment, frequency of dyadic problems, and role disillusionment. The same pattern was seen very clearly for vertical exchange itself reported after the first year. For the

TABLE 11
Summary of ANOVA Results for Supervisor's Reports
over Time (T) Based on the Classification
by AP and VE (FY) Scales
(N=61)

Variable	Probability						
	AP	VE	T	AP×VE	AP×T	VE×T	AP×VE×T
Job Need: Providing							
Leadership Support	—	**	**	—	—	—	—
Job Enrichment	—	**	*	—	—	—	—
Vertical Exchange	**	**	**	—	*	—	—
Job Performance	—	**	*	—	*	—	*
Success Potential	—	*	—	—	—	—	—

Note: *...p<.05, **...p<.01; —...not significant.

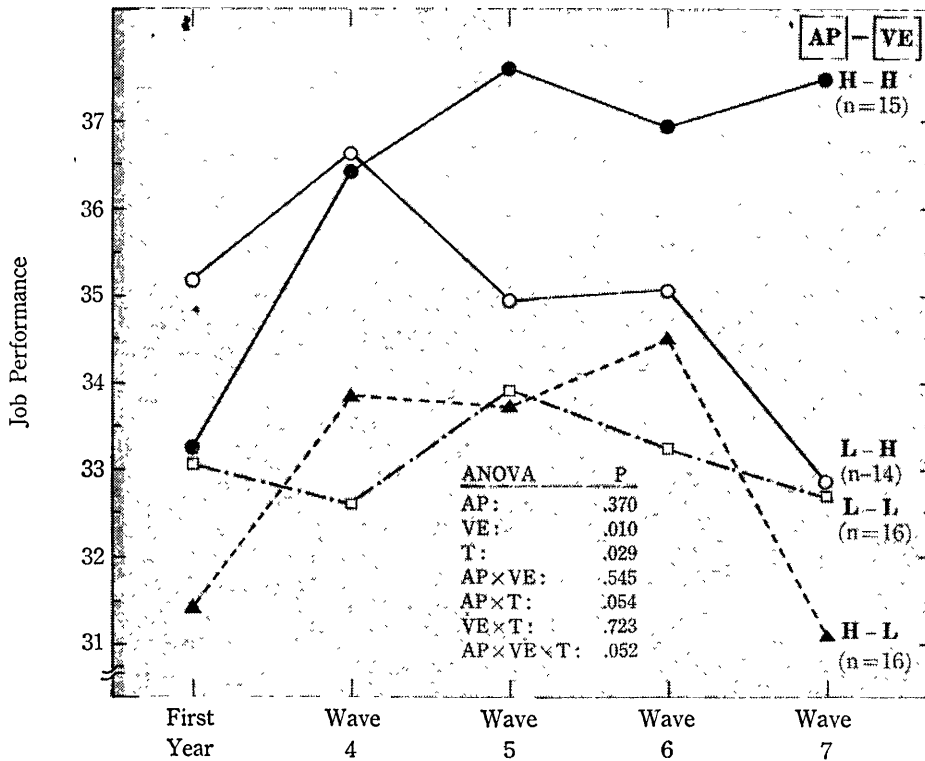


FIGURE 3
Job Performance over Time (T) Based on the AP and VE (FY) Groups

other newcomers' reports, only the H-H group showed its distinctive position relative to the other three groups. However, the interaction effect did not reach a significant level.

Table 11 shows similar results for the super-

visors' reports. Job performance registered the significant AP×VE effect by interacting with the Time factor (AP×VE×T, p<.05). Figure 3 displays mean performance trends for the four groups. After wave 4 (middle of the

TABLE 12
One-Way ANOVA Based on the Four Comparison Groups
Followed by t-Test for the Pair-wise Comparison
(N=80)

Variable	ANOVA	t-Test					
		I			II		III
		1/2	2/3	3/4	1/2+3	2+3/4	1+2+3/4
●Newcomer's Report							
Job Need: Receiving							
Leadership Support	**	**	—	*	**	**	**
Job Enrichment	**	**	—	**	**	**	**
Job Problem: Frequency							
Dyadic Problem	**	—	—	—	**	*	**
Climate Problem	—	—	—	—	—	—	—
Job Problem: Severity							
Dyadic Problem	—	—	—	—	—	—	—
Climate Problem	—	—	—	—	—	—	—
Job Challenge							
Increased Centrality	**	*	*	—	**	—	**
Task Demand	*	—	—	—	**	—	*
Role Disillusionment							
Role Content	**	*	—	**	**	**	**
Profitability	—	—	—	—	—	—	—
Organizational Commitment							
Value of Organization	**	—	*	—	—	*	**
Risk of Committing	—	—	—	—	—	—	—
Need Deficiency (D ²)							
Leadership Support	**	—	*	—	**	**	**
Job Enrichment	**	—	**	*	—	**	**
Vertical Exchange	**	*	**	**	**	**	**
●Supervisor's Report							
Job Need: Providing							
Leadership Support	**	—	—	*	—	**	**
Job Enrichment	**	—	—	*	—	**	**
Job Challenge							
Increased Centrality	—	—	—	—	—	—	*
Task Demand	—	—	—	—	—	—	—
Vertical Exchange	**	—	—	**	—	**	**
Job Performance	*	—	—	—	—	—	**
Success Potential	—	—	—	—	—	—	*

Note: For t-test, numbers 1, 2, 3, and 4 denote the H-L, L-L, L-H, and H-H groups respectively.
 *...p<.05, **...p<.01; —...not significant.

second year), the H-H group differentiated from the rest of newcomers who formed a homogeneous group vis-a-vis the H-H. For the High potential newcomers, the differential quality of VE experience during the first year caused divergence in performance for

the rest of periods. On the other hand, for the low potential group the initial VE effect upon job performance was washed away, thus the L-H and L-L groups converged (and diverged from the H-H at the same time) after the 4th wave. The AP×VE effect did not

reach a significance level for the other supervisor's reports. However, all supervisor's reports endorsed a clear pattern of the combined effects between AP and VE (FY) factors: the supervisor rated the H-H group always at the highest level, in contrast to the other three non-discriminatory groups.

Using four subgroups, a series of t-tests were attempted to identify the predominant pattern of interaction between the AP and VE (FY) factors. For this purpose, both the newcomers' and supervisors' reports were averaged across monitoring waves. In Table 12, (a) a one-way ANOVA was performed to test overall difference among four groups. (b) By t-test I, four groups taken pair-wise were compared to each other. For t-test II, (c) the two Low potential groups combined (the

L-L plus the L-H), was tested against the H-L and the H-H group. Finally, (d) by t-test III, the H-H group was contrasted with the rest of group members combined into a single group. Results of t-test I indicate that the pattern of four-group differences does not hold, except for vertical exchange reported by the newcomer. The t-test II suggests that the three-group pattern may be predominant. This pattern was not supported by the supervisors' reports. A very clear pattern emerged out of t-test III. Both the newcomer and his supervisor agreed to the fact that the H-H group are different from the rest of group members who are basically homogeneous. All significant ANOVA results coincided with this two-group difference pattern.

Figure 4 summarizes findings based on the

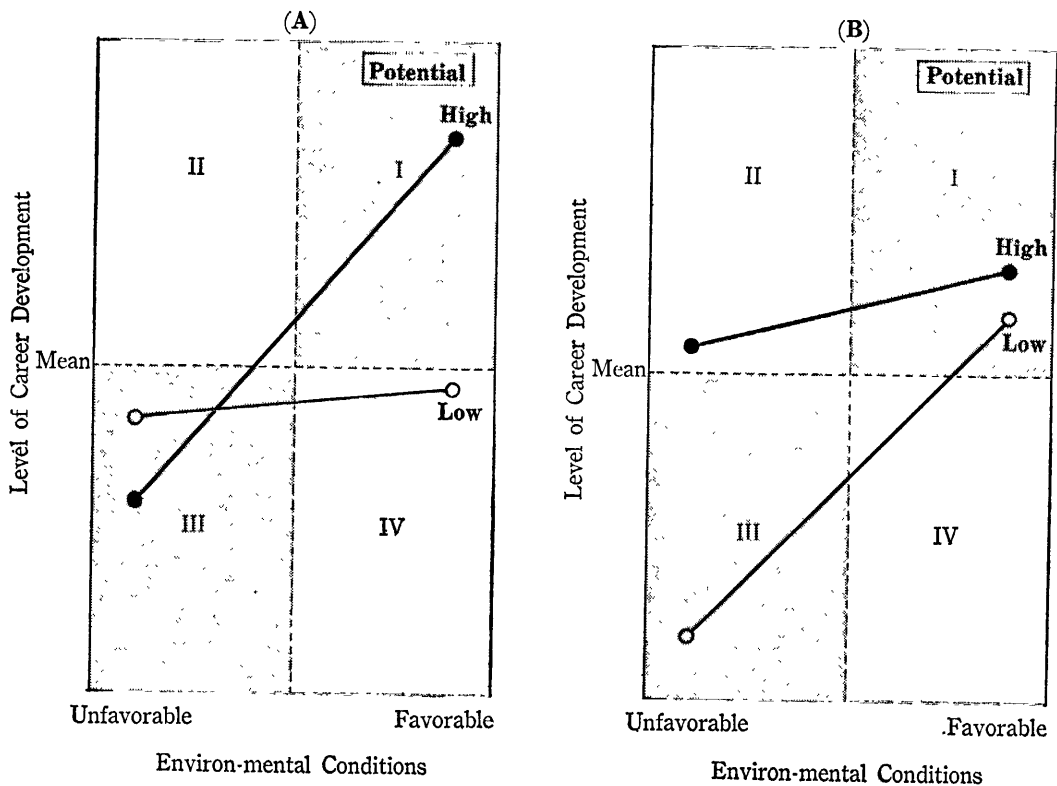


FIGURE 4
Two Different Systems for Managerial Career Development:
Noncompensatory (A) and Compensatory (B) Systems

t-tests. Pattern A, called the *noncompensatory system*, characterizes the management development system in the DEPART organization. Under this system, high level progress occurs only for those who high potential and favorable environmental conditions for role making, i. e., the H-H group. Pattern B corresponds to the results reported by Bray and his associates (1974) in their management progress study at AT&T. This pattern may be called the *compensatory system* in that the presence of either one of the positive factors (high potential or high "job challenge" of the

environment) compensates for the absence of the other to help management progress in the organization. System A may incur higher manpower costs in the long run, due to the underutilization of a large number of people who could be pushed into a much higher level of progress by proper management of potentials and environmental factors. Especially for the DEPART organization that is operating System A under a principle of "life-time employment," the redevelopment of lag-gard groups will become a serious problem in the near future.

TABLE 13
Univariate and Multivariate Analysis of Variance
on Exchange Outcomes Based on the Vertical Exchange Groups,
Using Measures Aggregated over Five Different Time Periods
(N=80)

Outcome Variables	Mean for the VE Groups			ANOVA	ϕ^2
	Low (n=27)	Mid (n=26)	High (n=27)		
●Newcomer's Report					
Job Need: Receiving					
Leadership Support	13.9	18.7	21.9	.001	.606
Job Enrichment	16.7	20.7	24.5	.001	.435
Job Challenge					
Increased Centrality	15.9	22.2	26.6	.001	.325
Task Demand	13.9	17.3	21.1	.001	.250
Job Problem: Frequency					
Dyadic Problems	33.4	30.8	27.9	.001	.244
Climate Problems	20.5	19.3	17.9	.018	.075
Job Problem: Severity					
Dyadic Problems	35.6	34.2	31.5	.028	.064
Climate Problems	19.7	19.3	16.9	.096	.034
(Probability for the MANOVA Test)				(.001)	
●Supervisor's Report					
Job Need: Providing					
Leadership Support	21.9	23.7	24.6	.001	.159
Job Enrichment	25.1	26.2	27.8	.001	.135
Job Challenge					
Increased Centrality	24.1	26.5	27.6	.001	.038
Task Demand	20.1	21.7	21.7	.210	.014
Vertical Exchange	37.3	39.0	40.1	.001	.143
(Probability for the MANOVA Test)				(.018)	

Functions of Vertical Exchange

Results presented above clearly document the predictive validity of vertical exchange for outcomes of management progress. The VE (FY) scale predicts most of the important outcomes. Moreover, it was found that the VE (FY) is a critical condition for activating or inactivating "potential" abilities of the new-

comer toward progress. Next, functions of vertical exchange in the process of management progress will be examined in detail.

Inclusion Function

According to Schein (1971), organizational career development consists of passage through the following three boundaries: (a) hierarchical boundaries, (b) inclusion boundaries, and (c) functional or departmental boundaries.

TABLE 14
Univariate and Multivariate Analysis of Variance
on Role Outcomes Based on the Vertical Exchange Groups,
Using Measures Aggregated over Five Different Time Periods
(N=80)

Outcome Variables	Mean for the VE Groups			ANOVA probability	ω^2
	Low (n=27)	Mid (n=26)	High (n=27)		
Organizational Commitment					
Value of Organization	37.7	41.7	44.6	.001	.139
Risk of Committing	14.3	13.9	15.7	.120	.029
Role Disillusionment					
Role Content	36.1	41.3	47.5	.001	.539
Profitability	28.0	29.8	31.2	.032	.061
Need Deficiency (D ²)					
Leadership Support	26.9	11.2	7.0	.001	.331
Job Enrichment	10.8	3.9	1.4	.001	.267
Job Satisfaction	14.1	16.2	20.3	.001	.258
(Probability for the MANOVA Test)				(.001)	

TABLE 15
Univariate and Multivariate Analysis of Variance
on Job Performance and Career Outcomes Based on the Vertical Exchange Groups,
Using Measures Aggregated over Five Different Time Periods
(N=80)

Outcome Variables	Mean for the VE Groups			ANOVA probability	ω^2
	Low (n=27)	Mid (n=26)	High (n=27)		
Job Performance	31.1	33.6	35.1	.001	.153
Success Potential	10.0	10.7	10.7	.063	.044
Right Type	8.7	9.5	10.6	.009	.091
Potential Index	48.1	49.7	52.9	.002	.132
Performance Index	47.5	49.5	51.4	.089	.036
Bonus	1398	1397	1409	.042	.055
(Probability for the MANOVA Test)				(.001)	

For newcomers of the present study, progress denoted primarily a passage through inclusion boundaries within their work units, because no significant variations were created with respect to the other boundary processes among our newcomers during their three-year organizational lives. Tables 13, 14 and 15 indicate how vertical exchange helped the newcomer to pass through inclusion boundaries for progress. Results were obtained by the following procedures. All dependent variables (except for career outcomes) were averaged over the monitoring periods. They were categorized into three groups (exchange outcomes, role outcomes, and career outcomes) for the purpose of multivariate analysis of variance (MANOVA) tests. Subjects were divided into three groups (High, Mid and Low) based on the average VE scores, and then this trichotomized VE scale served as a classification factor of MANOVA for each outcome set. Table 13 shows that the level of exchange outcomes is significantly different among three VE groups. Based upon the test of equality of mean vectors using Bartlett's chi-square approximation to the distribution of Wilk's lambda (Tatsuoka, 1971), the MANOVA result reached a high level of significance both for the newcomers' ($p < .001$) and supervisors' ($p < .018$) reports. In addition, results of univariate F tests indicate that the group difference based on the VE scale extends over almost all exchange outcomes examined. Tables 14 and 15 show that MANOVA tests produced basically the same results as discussed above for role outcomes and career outcomes, respectively.

Overall, results of the MANOVA study indicate that vertical exchange facilitated transaction of resources between the newcomer and his supervisor. First, within three years high exchange newcomers received more op-

portunities for job need fulfillment and job challenge. In addition, they could work in the environment with fewer problems, compared to their Low and Mid VE colleagues. Second, as a result of receiving greater amount of resources from his supervisor, the High VE newcomer showed more positive attitude toward his organization and job, and could achieve greater contribution for his supervisor and his work unit. Third, his contribution made it possible for the High VE newcomers to move more "inside" of the resource structure of the organization. Fourth, this transaction involving a high level exchange between resources and contributions led the High VE newcomers to an acquisition of high career outcomes by the end of the third year. And, probably they could pass inclusion boundaries toward a more inner circle as a result.

A few supplementary comments may be necessary. (a) Omega squares computed for each outcome variable ranged from .014 to .606. Variance explained by vertical exchange was much greater for the newcomers' reports (e. g., leadership support, role disillusionment, need deficiency, job challenge, etc.), compared to that for the supervisors' reports. (b) The average VE score over three years was found highly correlated with the first-year VE ($r = .78$) indicating that the higher the VE (FY), the higher the level of vertical exchange for the subsequent time periods. (c) The change of a partner for vertical exchange was found to have a negative effect upon the inclusion process. Especially for a small group of newcomers ($n=6$) who experienced the most frequent supervisor change (three times after the first year), the levels of vertical exchange and job performance were the lowest throughout the research period.

Causal Effect of Vertical Exchange upon Job Performance

In previous discussions, the causal function of vertical exchange was often implied: the VE (FY) explained most of the important outcomes of management progress over a considerably long time span. The causal impact of vertical exchange interpreted in this manner was examined in more detail by focusing upon the relationship between vertical exchange and job performance in terms of dynamic correlation (Vroom, 1966) and cross-lagged path analysis (Heise, 1970). For the purpose of brevity, vertical exchange and performance data were collapsed into the following three periods: the first year (an average of waves 2 and 3), the second year (waves 4 and 5), and the third year (waves 6 and 7). Then, dynamic correlations and path coefficients were computed between, (a) the first and the second year, (b) the second and the third year, and (c) the first and the third year.

A dynamic correlation is based on the correlation coefficient between the two change scores, i. e., a correlation between ΔX and ΔY . A spurious dynamic correlation is less likely to occur than spurious static correlations based on a single point in time (Vroom, 1966; Sheridan, et al., 1975). To safeguard against

the spurious correlation, the following three procedures were required. (a) To adjust for means and standard deviations, both vertical exchange and job performance scores were standardized within each time period before computing change scores. (b) To correct for the bias of regression toward a mean, initial scores for vertical exchange and job performance were controlled. In addition, (c) the following 11 structural and personal background variables were also subject to control (AP potential, personality type, *Conne*, age, and three dummy variables for education, job type, three dummy variables for work location). In sum, dynamic correlations were computed as partial correlation coefficients between the standardized change scores of job performance and vertical exchange, holding the initial scores for the above two variables and 11 exogenous variables constant. Table 16 shows the result.

For job performance, correlations with vertical exchange in three different forms, remained significant between the two successive years. However, dynamic correlations for both standardized and corrected forms failed to reach the significance level between the first and the third year, indicating that the longer the time span, the weaker the VE (FY) effect. On the other hand, a dynamic

TABLE 16
Correlation Coefficients Between Vertical Exchange,
and Job Performance (I) and Success Potential (II)
Based on the First-, Second-, and Third-Year Reports
 (N=80)

Correlation	Time Period					
	First to Second Year		Second to Third Year		First to Third Year	
	I	II	I	II	I	II
Cross-lagged	.26*	.13*	.34**	.40**	.25*	.25*
Standardized Dynamic	.30**	.22*	.24*	.15	.18	.13
Corrected Dynamic	.32**	.22	.25*	.15	.19	.25*

Note: *... $p < .05$, **... $p < .01$.

relationship between success potential and vertical exchange seems to be less consistent. After correction, the dynamic correlation remained significant only between the first and third year. In summary, Table 16 indicates that there exists a consistent, nonspurious relationship between vertical exchange and job performance. This relationship seems to be independent of conditions given for the "initial state" of management progress. The fact coincides with the results shown in Tables 8 and 9.

However, a question still remains regarding directions of causal influence: whether vertical exchange caused variations in job performance, or vice versa. To answer this question, cross-lagged path coefficients were computed for each of the causal paths. For the "vertical exchange→job performance" path, coefficients were found to be .20, .10, and .19 for the first to the second year, the second

to the third year, and the first to the third year, respectively. On the other hand, the alternative "job performance→vertical exchange" path produced coefficients, $-.02$, $-.09$ and $-.02$ for the same time periods. Path coefficients computed for the success potential scale produced basically the same results. For both cases, coefficients were not large enough to conclude that they are "significantly different from zero" (Sheridan and his associates (1975) proposed $P_{1j} \geq .30$ as a criterion). However, the results clearly direct the "vertical exchange→job performance" path, rather than the path of the other way around.

Linking-Pin Function

Past studies suggest that the leader-member relation in the "lower" level is influenced by the leader-boss relation in the "upper" level (Cashman, et al., 1976; Graen and Cashman, 1975; Grean, et al., 1977; House,

TABLE 17
ANOVA Results on the Supervisor-Boss Reports
Based on the Interlocked Vertical Exchange
at the Wave 7 Monitoring Period (N=72)

Variable	Mean for the VE Group ^a				ANOVA Probability		
	Lower Level		Upper Level		Lower Level (L)	Upper Level (U)	L×U
	Low VE (n=36)	High VE (n=36)	Low VE (n=36)	High VE (n=36)			
● Supervisor's Report							
Vertical Exchange	38.1	38.1	34.7	41.6	.066	.001	.966
Job Need: Receiving Leadership Support	25.5	25.3	23.5	27.3	.687	.001	.687
Job Enrichment	26.8	25.4	23.3	28.9	.070	.001	.445
Job Challenge							
Increased Centrality	28.5	28.9	26.4	31.1	.688	.001	.649
Task Demand	22.0	23.1	21.2	23.9	.212	.002	.709
Job Satisfaction	21.3	21.7	19.2	23.8	.677	.001	.488
● Boss's Report							
Job Performance	36.7	37.4	35.2	38.8	.497	.001	.978
Success Potential	10.8	11.4	10.4	11.9	.096	.001	.689
Right Type	10.9	11.2	10.4	11.4	.510	.007	.693

Note: ^a...Classification for the ANOVA Test was based on the 18 subjects for each VE subgroup: i. e., the Low-Low, Low-High, High-Low, and High-High groups.

et al., 1971; Likert, 1967; Pelz, 1952; Wager, 1965). The wave 7 monitoring for the present study provided data to evaluate how the upper vertical exchange affects a newcomer's behavior and his progress at the lower level. One of the key hypotheses tested for the study stated that high exchange newcomers, reporting to the supervisors who link themselves with their bosses by high vertical exchange relations, may find the best position for management progress in the organization. In other words, the highest progress comes to those newcomers working under the linking-pin supervisor. To test this hypothesis, (a) newcomers were divided into the High and Low groups in terms of the level of vertical exchange with their supervisors at wave 7. (b) Supervisors were also divided into the High and Low groups in terms of the level of vertical exchange with their bosses. (c) Then, two dichotomized VE scales were "in-

terlocked," producing 18 Low VE newcomers reporting to the Low VE supervisors (the L-L dyads), likewise 18 L-H dyads, 18 H-L dyads, and 18 H-H dyads. Based on this classification, two-way ANOVA was performed with reports by the newcomer, the supervisor (as a superior for the newcomer and as a subordinate for the boss separately) and the boss serving as dependent variables.

Table 17 shows the result of the ANOVA for the supervisor-boss relation in the upper level of interlocked vertical dyad linkages. Within the upper level, the quality of a supervisor's exchange with his boss has an overwhelming effect upon both the supervisor's and boss's reports (the Upper Level effect). Whether or not the newcomer has high vertical exchange with his supervisor seems to have no effect at all (the Lower Level effect) upon the supervisor-boss relationship. Table 18 shows ANOVA results

TABLE 18
ANOVA Results on the Newcomer-Supervisor Reports
Based on the Interlocked Vertical Exchange
at the Wave 7 Monitoring Period (N=72)

Variable	Mean for the VE Group ^a				Probability		L × U
	Lower Level		Upper Level		Lower Level (L)	Upper Level (U)	
	Low VE (n=38)	High VE (n=38)	Low VE (n=38)	High VE (n=38)			
● Newcomer's Report							
Vertical Exchange	28.5	39.9	34.3	34.1	.001	.868	.063
Job Need: Receiving Leadership Support	18.1	22.3	19.8	20.7	.001	.436	.070
Job Enrichment	19.3	26.6	23.4	22.5	.001	.323	.058
Job Challenge							
Increased Centrality	18.7	25.3	21.4	22.5	.001	.491	.048
Task Demand	15.3	20.0	16.8	18.6	.001	.154	.003
Job Satisfaction	14.6	19.8	17.1	17.3	.001	.868	.272
● Supervisor's Report							
Job Performance	32.4	36.3	33.1	35.5	.002	.053	.605
Success Potential	10.6	11.4	10.8	11.2	.065	.456	.534
Right Type	9.0	10.4	9.3	10.1	.009	.145	.703

Note: ^a...Classification for the ANOVA test was based on the 18 subjects for each VE subgroup: i.e., the Low-Low, Low-High, High-Low, and High-High groups.

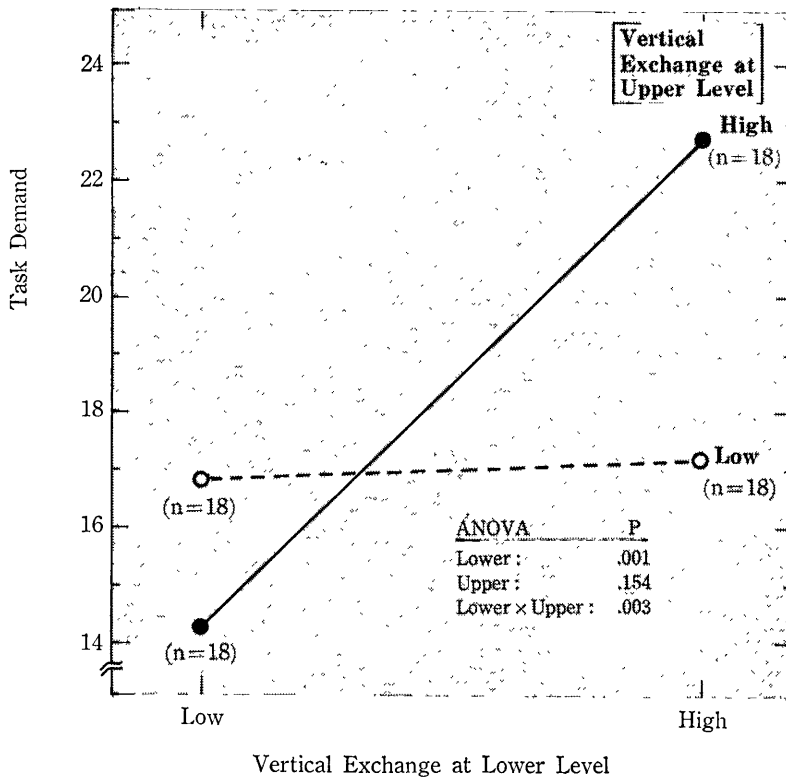


FIGURE 5
Task Demand Reported by the Newcomer Based on the Interlocked Vertical Exchange Between the Lower and Upper Levels (N=72)

for the newcomer-supervisor relations. The Lower Level effect has a very strong impact. On the other hand, the Upper VE produced a significant effect only upon the newcomer's job performance, The Lower × Upper interaction effect reached a significant level for job challenge scales. This is more or less true for job need scales and vertical exchange itself. This interaction produced a pattern of mean differences among the four VE groups that supports the "linking-pin hypothesis" stated earlier. Figure 5 displays such a pattern of means. The High VE newcomers reporting to the High VE supervisors (the H-H group) showed the highest job challenge in terms of task demand, compared to the other three group members. Conversely, the

Low VE newcomers reporting to the High VE supervisor (the L-H group) showed exacerbation in the quality of task demand on the job. Four resource outcomes shown in Table 18 (two job need and two job challenge measures) were brought into the MANOVA test. Following a very strong Lower effect ($p < .001$), the result produced a significant Lower × Upper interaction effect upon a set of resource outcomes (Rao's F-ratio approximation = 2.66; $p < .040$). This finding suggests that the pattern as shown in Figure 5 holds true for all resource outcomes combined.

Results may point to the following notion on linking-pin functions of the supervisor. First, the linking-pin supervisors facilitated resources transaction across hierarchical boun-

TABLE 19
Number and Percentage of Newcomers
Recruited into the Wave 7 Understructure from the First-Year Groups
Based on the VE (FY) and AP Factors

VE Understructure at Wave 7		First-Year Group			(Total)
Lower Level	Upper Level	Low VE Low AP	High VE High AP	Mixed	
Low	Low	8 (36%)	5 (20%)	11 (34%)	24
Low	High	6 (28%)	2 (8%)	10 (30%)	18
High	Low	8 (36%)	7 (28%)	5 (15%)	20
High	High	0 (0%)	11 (44%)*	7 (21%)	18
(Total)		22 (100%)	25 (100%)	33 (100%)	N=80

Note: *...The percentage is higher than the one for the Mixed Group (21%) at the $p < .05$ level of significance.

daries. They acquired resources from their bosses through high vertical exchange at the upper level. In addition, they were willing to distribute a part of those resources to their subordinates, thereby enabling high exchange relations to be established at the lower level. These resource acquisition-distribution processes were reciprocated by the contribution process based on job performance within each hierarchical level. Second, the Low VE newcomers reporting to the High VE supervisors showed exacerbation which may be due to the following: (a) these L-H supervisors did not trust newcomers and did everything by themselves, (b) they were highly protective of their own position, or (c) they might have exploited the subordinate to help themselves look good in the eyes of their bosses and colleagues. Whatever the reason, their efforts to maintain high VE relations with their bosses produced a strong negative effect upon the newcomer. Third, *ceteris paribus* the career environment for newcomers at the end of the third year was characterized primarily by the leader-member relation at the lower level.

Finally, an attempt was made to examine how the leader-member relation contributed to integrating developmental processes into

the linking-pin structure at wave 7. Table 19 shows the results. In Table 19, conditions for progress based on the first year (VE (FY) and AP potential) were contrasted with those for the linking-pin structure at wave 7. The focus of analysis was directed toward evaluating to what extent the newcomer's progress, predicted by a combination of VE (FY) and AP factors, becomes integrated into the "understructure" (Dansereau, et al., 1975) of the organization by the end of the third year. The result indicated that (a) from the L-L first-year group, no newcomers were recruited into the H-H substructure at wave 7. On the other hand, (b) 44 percent of the H-H members in the first-year group were included into the H-H substructure. (c) This ratio was found to be significantly different ($p < .05$) from that (7 percent) for the mixed first-year group. The above results suggest that management progress may be explained by the broader organizational structure of distribution of resources and their utilization.

Discussion

Strong validity of the role-making hypothesis in explaining outcomes of management

progress is attributable to the critical roles that vertical exchange played for facilitating the process of career developments. (1) The penetrating effect of the first-year vertical exchange into the subsequent phases of progress may point to the learning and motivational functions of vertical exchange. The high quality leader-member relation helped the newcomer learn the skills of an "effective performer" (Graen, 1969): goal setting, getting his supervisor to recognize goals, negotiating for resources, working through and contribution, achievement feedback, setting of higher goals, and so on. These skills may constitute a part of "interpersonal competence" (Argyris, 1962) or "personal impact" (Bray, et al., 1974). A motivational function of vertical exchange became very conspicuous when the VE (FY) effect was moderated by the potential factor. The result indicated that during the first year a leader-member relation interacted with need for growth of the newcomer very strongly. For one group of newcomers, the high VE (FY) reinforced their potentials and enabled them to experience "psychological success" (Berlew and Hall, 1966; Hall, 1968), or increasing "self-esteem" (Korman, 1967). Conversely, for the other group of newcomers the process was just the reverse: they were led to discouragement and regression of their higher-order needs due to the low vertical exchange during the first year.

(2) It was found that vertical exchange functioned as a measure of "inclusion" (Schein, 1971) in such a manner that the deeper the inclusion level, the higher the outcomes. The result suggested that high vertical exchange helped the newcomer pass inclusion boundaries toward resources and operations that are more central to his work unit.

(3) The supervisor acted as a "value faci-

litator" (Locke, 1976) by engaging in vertical transactions between him and his subordinate. Transactions involved exchange of task related values and rewards and the contribution by the subordinate. Significant contributions that the VE (FY) and VE (S) variables made to explain outcomes reported by the opposite party revealed the reciprocal nature of vertical transactions.

(4) The linking-pin function of vertical exchange had an influence upon the management progress of the newcomer. This occurred because supervisor's involvement in the lower-level relation (including the effect of his involvement) partly depends on his vertical exchange with his boss in the upper level. The linking-pin supervisor can be defined as an "optimizer" (Campbell, et al., 1970; Seashore and Yuchtman, 1967.) He intersects two environments (upper and lower) in order to maintain an optimum balance between meeting the needs of his members within the lower level and the demands of the boss within the upper level. However, these optimizers constituted only about one-fourth of our sample supervisors. The rest of them were found to be either (a) maximizing upper exchange by sacrificing the lower exchange, (b) facilitating exchange only within the lower level, or (c) playing a "missing link" role between the upper and the lower.

(5) Finally, the leader-member relations had a function of integrating the newcomer's potential with the understructure of the organization for resource distribution. This finding suggests the effect of a three-way interaction among potential, lower VE, and upper VE factors upon the process of management progress of the newcomer.

In conclusion, evidence presented in this study suggests the importance of the "process-oriented" researches and practices in the area

of management progress. For our study, progress was primarily attributable to what happened "after" selection within the organization, involving interpersonal processes between the newcomer and his supervisor. This fact points to the shortcomings of deterministic approaches based on variables "before" the process. The process-oriented research of management progress requires (1) the longitudinal investigation with repeated monitor-

ings, (2) the predictive design of outcomes from developmental processes, (3) theories to explain "how" these outcomes come into being, and (4) insights for integrating the development of these processes within the organization. It must be emphasized that this management progress study has merely opened up this broader range of interest. Much more needs to be done.

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