

Testing Mintzberg's Managerial Roles Classification Using an In-Basket Simulation

Zur Shapira
School of Business
Hebrew University, Jerusalem, Israel

Roger L. M. Dunbar
International Institute of Management
West Berlin, West Germany

Managerial work was described by Mintzberg as consisting of 10 roles classified into the following three groups: (a) interpersonal roles including the figurehead, leader, and liaison roles; (b) informational roles including the monitor, disseminator, and spokesman roles; and (c) decisional roles including the entrepreneur, disturbance handler, resource allocator, and negotiator roles. An in-basket simulation exercise, constructed to test Mintzberg's classification, was administered to 54 Master of Business Administration students and 112 managers in two different studies. Analysis using the Guttman-Lingoes smallest space analysis suggested that the 10 roles can be meaningfully divided into two facets. One facet consists of roles that deal with the generation and processing of information, and the second facet is comprised of roles that involve decisions. The implications of the present results and the use of in-basket simulations for the study of managerial behavior are discussed.

In concluding their survey of the relationship between managerial behavior, managerial performance, and organizational effectiveness, Campbell, Dunnette, Lawler, and Weick (1970, p. 479) noted that there was a need to find improved methods for observing and recording managerial job behavior. They called for the development of a taxonomy of managerial jobs founded on behaviorally relevant bases that had been established from observing and recording what managers do. Mintzberg (1973) sought to provide the needed taxonomy by conducting a longitudinal study of managerial work, in which he obtained personal information about five chief executives, a calendar of their scheduled appointments for a month, and additional information about their

organizations. Based on this information, he planned a week of structured observations in which he collected two types of data. *Anecdotal data* consisted of materials of specific activities. *Structural data* included a chronological record of activity patterns, a record of incoming and outgoing mail, and a record of the executive's verbal contacts with others (e.g., Mintzberg, 1973, pp. 230-277).

Mintzberg (1973, pp. 28-48) established that managers work at an unrelenting pace on a large variety of tasks subject to frequent interruption. He observed that they prefer to work on specific, well-defined activities of current importance rather than on more general functions, which may be less certain and whose immediate relevance is unclear. He noted that they favor verbal rather than written contact with others.

Mintzberg's (1973, pp. 54-99) analysis led him to postulate that managerial activities could, in general, be divided into *interpersonal*, *informational*, and *decisional* roles. Within the interpersonal category, he identified three specific roles. As *figureheads*, managers perform symbolic duties of a legal or social nature because of their obligations as head of the organization. In the *leader*

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Roger L. M. Dunbar is now with the Graduate School of Business Administration, New York University.

Requests for reprints should be sent to Zur Shapira, School of Business, Hebrew University, Jerusalem, Israel.

role, managers establish the work atmosphere within an organization and motivate subordinates to achieve organizational goals. When managers develop and maintain webs of contacts outside the organization to obtain favors and information, they are *liaisons*.

The informational category also included three roles. In the *monitor* role, managers act as collectors of all information relevant to the organization. As *disseminators*, managers transmit information from the outside to members in the organization, while as *spokesmen*, managers transmit information from inside the organization to outsiders.

Finally, there were four decisional roles. Managers adopt the *entrepreneurial* role when they initiate controlled change in their organization to adapt to the changing conditions in the environment. They are *disturbance handlers* when forced to deal with unexpected changes. As *resource allocators* they make decisions concerning resource utilization. Last, when they are involved in major negotiations with other organizations or individuals, they are *negotiators*.

Mintzberg emphasized that the 10 roles could not be isolated from each other, but formed an integrated set (1973, p. 58). He also postulated a process model of managerial behavior based on his classifications system. Specifically, according to Mintzberg, "formal authority gives rise to the three interpersonal roles, which in turn give rise to the three informational roles; these two sets of roles enable the manager to play the four decisional roles" (1975, p. 55).

Mintzberg provided no empirical analysis to support his classification of the 10 roles into the three groups or of the logical dependence among the three groups. The first study tested the classification and the dependence relationship in a simulated managerial environment.

Study 1

Method

Subjects. Fifty-four part-time Master of Business Administration (MBA) students (44 males and 10 females) from the Hebrew University, Jerusalem, Israel, participated in the study. Their ages ranged from 21 years to 32 years, with a median of 26 years. The majority held medium level managerial positions in either governmental agencies or private companies.

Instrument and procedure. The in-basket exercise was designed to be a simulation of a chief executive's first day in office. The cover letter stated:

You have just accepted the Presidency of RIM Corporation, a large firm with around 6000 employees. Its main business is in the manufacture and distribution of a wide variety of textile products. You were appointed because it was anticipated that your experience would be useful in helping the corporation to get out of its current profitability problems, resulting from a series of large losses incurred in the previous three years.

It is your first day on the job. You have one hour to examine your incoming memos before you catch a plane to Europe to attend an important meeting. Many of the memos make suggestions concerning what you should do. However, it is not necessary that you should accept their proposals. Rather, you should decide on and do what you think is best. Please examine the memos. Then, on the given separate worksheets provided, prepare:

- 1) Any memos or instructions which you would like to have sent during your absence. Please list the memos in order of priority.
- 2) Instructions to your secretary indicating any memos which you would like rerouted to other organization members during your absence.
- 3) Instructions to your secretary indicating any reports or information you would like to receive on your return regarding the issues raised in these memos.
- 4) A calendar of your activities for the week of your return. Please handle the most important matters earlier in the week.
- 5) An agenda for the meeting with your top executives which will take place five days after your return. Please place the most important issues at the top of the agenda list.

The in-basket packet included 16 memos, providing the chief executive with opportunities to exercise the following eight roles: figurehead, leader, liaison, spokesman, entrepreneur, disturbance handler, resource allocator, and negotiator. Each role was represented by 2 memos. No specific memos were constructed for the monitor or disseminator roles. If the chief executive informed his secretary that particular reports should be obtained (Instruction 3), it was considered a monitor role utilization. When the chief executive directed the secretary to reroute memos to other organizational members (Instruction 2), he was assumed to act as a disseminator.

The following letter from the president of the local Chamber of Commerce is an example of a memo describing a liaison role opportunity. It was addressed to the new president of RIM Corporation:

The Chamber of Commerce would like to welcome you to our city and to wish you success in your new position. We would also like you to know we meet every Wednesday in the Ambassador Room at the Hilton Inn at 12:30 p.m. We hope you will be able to attend our meetings. It is important to let the

Hilton know if you plan to attend in order to make adequate catering arrangements.

It was signed by John Smith, President, Chamber of Commerce, and President, First National Bank.

To check whether the memos corresponded to the intended roles, 10 graduate students who were familiar with Mintzberg's formulation were given short role descriptions taken from Mintzberg (1973, pp. 92-93) and were then requested to classify them into the eight roles. A criterion of 80% agreement among judges was set and was met for the memos used in the present study.

The in-basket was administered in class. The subjects, who were not familiar with Mintzberg's theory, were requested to examine the memos and to indicate their response choices on the appropriate work sheets. They were asked to complete the assignment in an hour.

Scoring procedures. Response scoring was based on the idea that every memo represented an opportunity to exercise one role. This is similar to Brass and Oldham's (1976) attempt to measure whether specific leadership activities had been used by foremen in responding to an in-basket simulation. The objective was to find out whether subjects assumed specific managerial roles.

Recall that no memos were prepared for the disseminator and monitor roles, and each of the other eight roles were represented by two memos. For these eight roles subjects could indicate role utilization in three ways. First, they could respond by preparing memos or instructions to be sent in their absence (Instruction 1). Second, they could indicate that the activity should appear on their calendar for the week of their return (Instruction 4). Third, they could indicate that the activity should appear on the agenda for the meeting with the top executives (Instruction 5). The number of times each of the 16 memos was listed in these three response sheets (representing Instructions 1, 4, and 5) were counted. Each memo could be listed only once in every response category, and since each role was represented by two memos, the score for each of these eight roles could vary between 0 and 6.

To increase the behavioral realism, a slightly different method was used for scoring the monitor and disseminator roles. The score for the disseminator role was the count of the memos rerouted to other organization members (Instruction 2). The score for this role could vary from 0 to 16, since at the most all 16 memos could have been rerouted to other organization members. The score for the monitor role was the number of reports requested from the secretary (Instruction 3). This score could also vary from 0 to 16. The scoring was done independently by the first author and a research assistant.

Data analysis. Guttman-Lingoes' smallest space analysis (cf. Guttman, 1968; Lingoes, 1973) was applied to the matrix of correlations of the 10 managerial roles. Smallest space analysis (SSA) is a nonmetric multidimensional scaling procedure in which variables are represented geometrically as points in a Euclidean space. The distances between the points correspond to the order of the correlations between the variables. Two points are represented as closer together if the

correlation between the corresponding variables is higher.

The goodness of fit of an SSA solution is measured by a coefficient of alienation, $(1 - \mu^2)^{1/2}$, where μ is the rank-order correlation between the correlations among the variables and their respective geometric distances. The fit of the spatial presentation in relation to the original correlation matrix is better, as the coefficient of alienation is smaller. SSA operates in a sequential manner to provide a good geometric representation in a space of a minimum number of dimensions. Shapira (1976) and Taylor (1971) have provided examples of the application of SSA to leadership research.

Results

Although interrater reliability is a major concern in scoring in-basket simulation exercises (cf. Brass & Oldham, 1976; Fredrikson, Jensen, & Beaton, 1972), this problem was virtually absent in the present study. The scorers had only to identify the respective memos referred to in Response Categories 1, 4, and 5 and to count the memos referred to in Response Categories 2 and 3. Evaluative judgment was not a part of the task. The scorers completed their task independently, and the correlation between the two scorings was .92. There were only 11 items scored differently, and these cases were resolved by discussion.

Each subject received a score on each of the 10 roles. Mean scores, standard deviations, and intercorrelations between the roles are presented in Table 1. To allow an easier comparison between the role means, the scores for the disseminator and monitor roles were transformed to the range of scores of the other eight roles (e.g., from 0 to 6).

The matrix of intercorrelations was subjected to the Guttman-Lingoes SSA. The spatial pattern of relationships among the different variables did not change substantially from the two-dimensional space solution to the five-dimensional space solution. The coefficient of alienation for a two-dimensional space solution was .13. It was .09, .07, and .05 for the three-, four-, and five-dimensional space solutions, respectively. The two-dimensional space solution provided a good fit of the plotted distances to the original correlations (cf. Guttman, 1968). Figure 1 presents this two-dimensional space solution. The results suggest that the space can be meaningfully separated into two

Table 1
Means, Standard Deviations, and Intercorrelations of Managerial Roles (MBA Sample)

Role	<i>M</i> ^a	<i>SD</i> ^a	1	2	3	4	5	6	7	8	9	10
1. Figurehead	1.84	1.08	1.00	-.04	.18	.09	.09	.31	.11	.14	.06	-.06
2. Leader	2.04	1.26		1.00	.05	.30	.08	.24	.23	.46	.29	.49
3. Liaison	1.28	.98			1.00	.05	.22	.42	.03	-.08	.04	.10
4. Monitor	1.33	.85				1.00	.12	.20	.24	.32	.30	.32
5. Disseminator	1.65	.98					1.00	.32	.12	.18	-.22	.10
6. Spokesman	1.39	.82						1.00	.28	.26	.13	.23
7. Entrepreneur	2.96	1.50							1.00	.56	.39	.52
8. Disturbance handler	2.22	1.32								1.00	.40	.50
9. Resource allocator	1.13	1.01									1.00	.37
10. Negotiator	2.32	1.03										1.00

Note. *N* = 54. Correlations > .26 are significant at the .05 level. MBA = Master of Business Administration.

^a The scores for the monitor and disseminator roles were adjusted. The maximum possible score for each role is 6.

regions labeled, respectively, *informational roles* and *decisional roles*. Dotted lines are drawn on the diagram to indicate this grouping.

It should be noted that as a nonmetric multidimensional scaling procedure, SSA differs from factor analysis. SSA emphasizes the structural relations among the variables rather than the factor solution, which is the usual goal of factor analysis. Since SSA is a nonmetric technique, there is no meaning to the variables' loadings on the axes, although one can try to label dimensions according to the spatial representation of the variables (cf. Karmel & Egan, 1976). SSA actually "translates" the correlation matrix into a spatial configuration in a way that preserves the rank order of the correlations. It seeks to arrive at a solution in the smallest dimensional space possible while preserving the order of the correlations. In general, it produces fewer dimensions than factor analysis.¹ (For an extensive discussion of the use of SSA, see Shapira & Zevulun, 1979).

Mintzberg's (1973) postulate of a sequential dependence among managerial roles was tested next by a hierarchical clustering procedure, using Sattath and Tversky's (1977) ADDTREE computer program. The analysis provided further support to the SSA results and suggested no hierarchical structure among the different managerial roles.² It should be noted, however, that Mintzberg (Note 1) suggested that this was a postulate

about a conceptual dependence and should not be interpreted as a sequential dependence in either a temporal or a causal sense.

In sum, the results indicate that the 10 roles can be regrouped into two categories. The first deals with information generation and processing and the second consists of decision-making roles. There seems to be no need for a separate category defined as interpersonal roles.

Study 2

The purpose of this study was to examine the generalizability of the results of the first study to managers in other organizations. A second objective was to investigate the effect of the hierarchical level of one's position in the organization on the use of the different roles. Mintzberg argued that managers at various levels perform common roles but with different emphasis (1973, p. 113). More specifically, he postulated that managers at lower levels tend to spend more time as disturbance handlers and negotiators and less time in the figurehead role (1973, p. 130). To examine the hypothesized hierarchical effect, middle level managers' responses to the in-basket simulation were compared with those of lower level managers.

¹ A factor analysis with varimax rotation applied to the present data also yielded a two-factor solution.

² To save space, the ADDTREE results are not reported here. They are available from the first author.

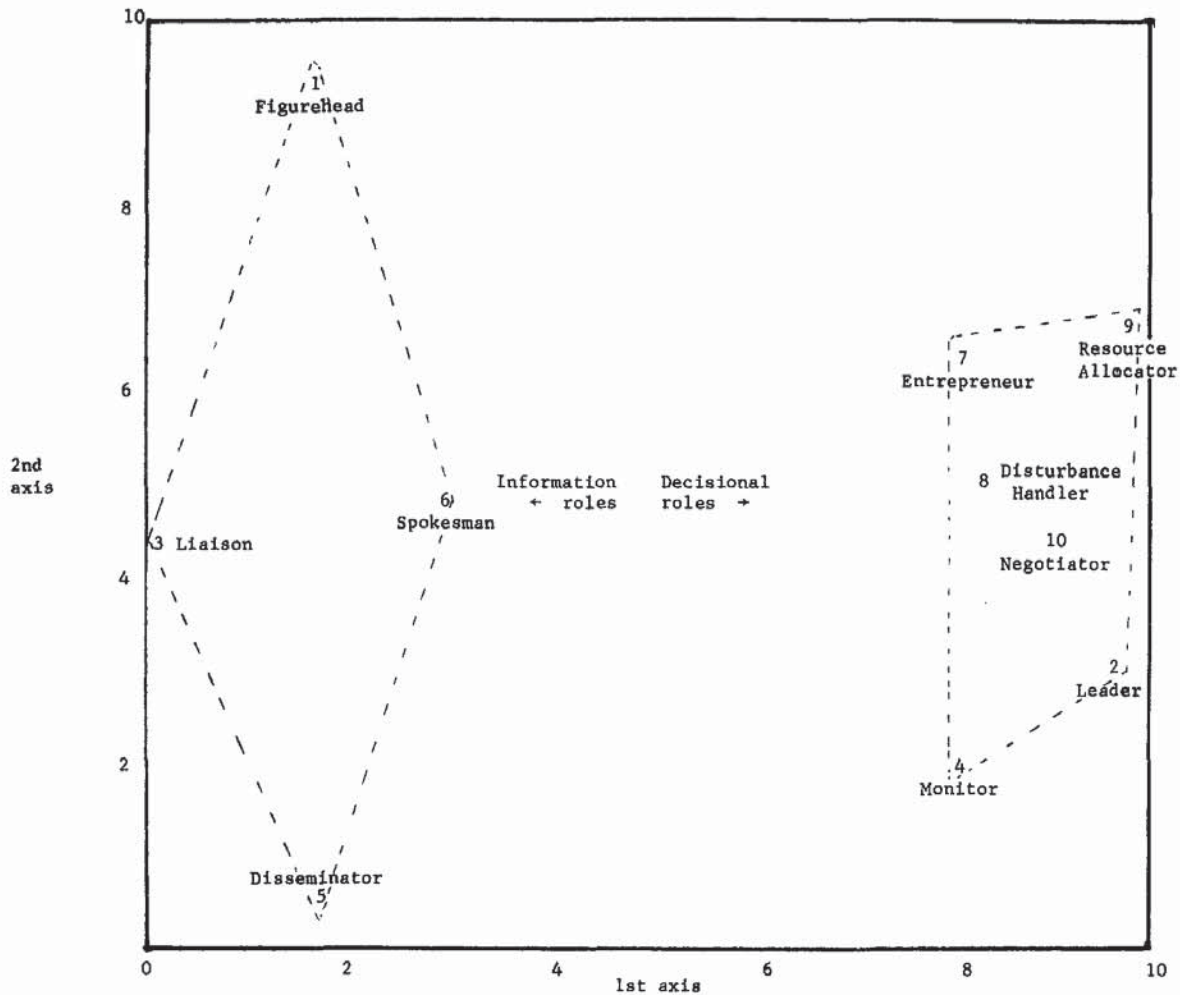


Figure 1. Space diagram of the 10 managerial roles (Master of Business Administration sample).

Method

Subjects. One hundred twelve male managers (48 middle level managers and 64 lower level managers) from a large manufacturing corporation in Israel participated in the study. Their ages ranged from 24 years to 40 years, with a median of 29 years.

Research setting and procedures. The subjects followed the same procedure outlined in Study 1. The in-basket was administered in small groups in the working place for the lower level managers. The middle level managers participated in the simulation as a part of a 3-day managerial development program. In both cases the nature of the in-basket was explained to the participants before the simulation started. The managers, who were not familiar with Mintzberg's formulation, were given 1 hour to complete their task.

Scoring procedures. The scoring for the disseminator and monitor roles were exactly the same as in the first study. These scores were the count of the memos rerouted to other organizational members (Instruction 2) for the disseminator role and the number of reports

requested (Instruction 3) for the monitor role. The scoring for the other eight roles was similar to the one outlined in Study 1, with one modification. Recall that the subjects were requested to list the memos in order of importance in each response category. These priorities were taken into account when scores for the roles were computed. This change in the analysis was intended to use more of the information provided in the manager's responses. Since all 16 memos could potentially be listed in each response category, the top memo in each category received a score of 16, the second memo received a score of 15, and so on. The score of each of the eight roles (excluding the disseminator and monitor roles) was the average score of the two memos representing this role in the three relevant response categories. Thus, the maximum score that a role could receive was 15.5; this could occur if the two memos representing this role were listed as first and second in each response category. The minimum score that a role could receive was 0, in cases in which none of its memos were listed in these categories.

Table 2
Means, Standard Deviations, and Intercorrelations of Managerial Roles (Managerial Sample)

Role	Middle level ^a		Lower level ^b		1	2	3	4	5	6	7	8	9	10
	M	SD	M	SD										
1. Figurehead	3.36	1.48	2.80	1.18	1.00	-.09	.25	.06	.13	.33	.06	.09	.10	-.04
2. Leader	4.21	1.92	4.32	1.88		1.00	.07	.35	.11	.20	.33	.55	.40	.57
3. Liaison	3.70	1.58	2.81	1.22			1.00	.06	.31	.56	.06	-.03	.08	.12
4. Monitor	2.78	1.24	2.90	1.30				1.00	.08	.21	.30	.39	.32	.36
5. Disseminator	3.10	1.28	2.40	1.08					1.00	.37	.15	.29	.06	.20
6. Spokesman	2.90	1.16	2.50	1.10						1.00	.24	.27	.15	.26
7. Entrepreneur	5.20	2.08	4.10	1.86							1.00	.65	.43	.60
8. Disturbance handler	3.30	1.42	3.92	1.51								1.00	.47	.53
9. Resource allocator	4.30	1.88	3.70	1.37									1.00	.38
10. Negotiator	4.12	1.84	4.50	1.93										1.00

Note. $N = 112$. Correlations $> .19$ are significant at the .05 level.

^a $n = 48$. ^b $n = 64$.

Results

Interrater reliability. The in-basket was scored independently by the first author and two research assistants. As indicated before, the scorer's task was simple and required no evaluative judgment. Out of the 112 subjects, the scoring of the responses of 96 subjects were the same for all scorers. There were a few disagreements regarding the remaining 16 subjects, which amounted in general to the identification of one or two memos. In only 1 case was there disagreement about the identification of five memos. The correlations between the first author's scoring and the scoring by the first and second research assistants were .96 and .91, respectively; a correlation of .93 was obtained between the scoring of the two research assistants. The 16 memos not scored consistently were then debated until agreement was reached.

Relationships among roles. Mean scores, standard deviations, and intercorrelations between the different roles are presented in Table 2. To allow an easier comparison among the means, all scores were transformed so that the maximum score for each role was 10. The matrix of intercorrelations was then subjected to the Guttman-Lingoes SSA procedure. The coefficients of alienation for the SSA solutions were .10, .08, .06, and .04, for the two-, three-, four-, and five-

dimensional space solutions. The two-dimensional solution provided a very good fit of the plotted distances to the original intercorrelations and is presented in Figure 2.

The SSA results of the second study and the configuration obtained in the first study seem quite similar.³ This correspondence increases confidence in the proposed reclassification of the 10 roles into two groups. The first group, consisting of the figurehead, liaison, disseminator, and spokesman roles, is labeled *informational roles*, since basically all of them deal with the information flow in and out of the organization. The second group consists of the leader, monitor, entrepreneur, disturbance handler, negotiator, and resource allocator roles. This group of roles is labeled *decisional roles*, since all of them deal with decisions regarding employees, operations, or interorganizational activities. This proposed reclassification is discussed in more detail in the Discussion section.

Hierarchical level effect. Mintzberg (1973, p. 130) postulated that the lower the hierarchical level, the more time is spent in the disturbance handler and the negotiator roles and the less time is spent in the figurehead

³ The ADDTREE analysis provided similar results. To eliminate redundancy they are not reported here. The results are available from the first author.

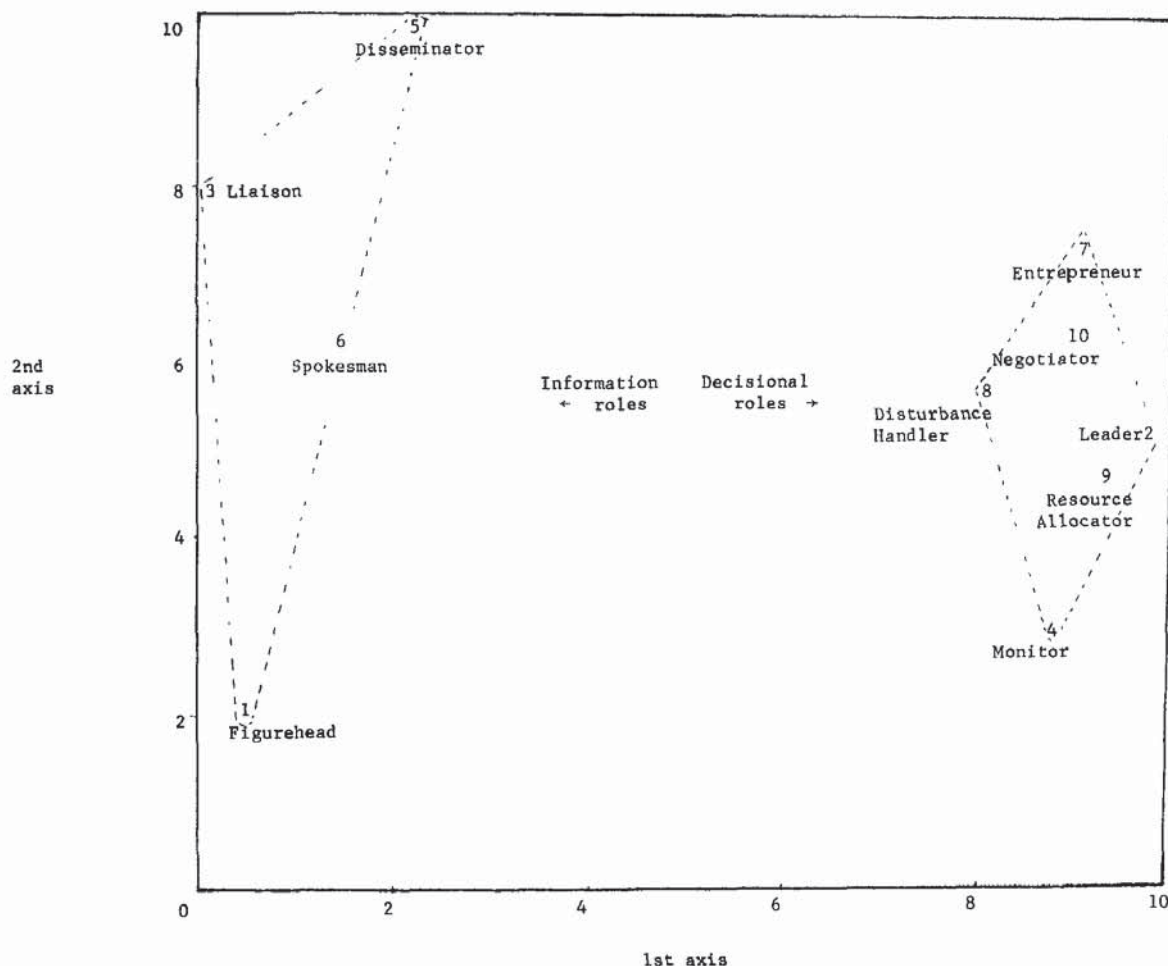


Figure 2. Space diagram of the 10 managerial roles (managerial sample).

role. The relative importance attached to these roles in the two groups was compared. Middle level managers had a higher priority for the figurehead role in comparison to their lower level counterparts, $t(110) = 2.21$, $p < .05$; they had a lower priority for the disturbance handler role, $t(110) = -2.19$, $p < .05$; and there was basically no difference with regard to the negotiator role, $t(110) = -1.04$, *ns*. Thus, in two of the three roles, significant differences in the predicted direction were obtained. In addition, middle level managers more than lower level managers assumed the roles of liaison, $t(110) = 3.33$, $p < .001$; disseminator, $t(110) = 3.11$, $p < .01$; and entrepreneur, $t(110) = 2.92$, $p < .01$. These differences also seem congruent with Mintzberg's notion of the hierarchical level effect.

Discussion

According to the findings of the two studies, the 10 managerial roles can be meaningfully divided into two groups. The first group of roles is made up of the liaison, disseminator, spokesman, and figurehead roles. These seem concerned primarily with information generation and transmission. As a group, the set corresponds with Mintzberg's notion of the manager as the general nerve center of the organizational unit (1975, p. 55). The liaison role is concerned with building up an external information system. The disseminator and spokesman roles are concerned with the distribution of information internally and externally. Figurehead functions seem relevant in this context because they may facilitate contacts with important persons in other organizations.

The second group of roles, entrepreneur, negotiator, leader, disturbance handler, monitor, and resource allocator, are primarily concerned with the active formulation and execution of decisions. Although Mintzberg classified the entrepreneur, negotiator, disturbance handler, and resource allocator in this way, he did not place the leader and monitor roles in the decisional roles group. The present subjects treated the leader role, which involved responding to morale problems and a negative work atmosphere, as similar to other decisional activities related to the accomplishment of organizational goals (see also Weick, 1974). The monitor role was also grouped with the decision-making rather than the informational roles. The perspective adopted by Sayles (1964) and noted by Mintzberg (1973, p. 67), that monitoring is an activity directed toward decision making and occurs when one is seeking problem solutions, describes the subjects' behavior in the present context.

The two groups of roles obtained in the present analyses emphasize the information-processing, input-output nature of managerial work. In his classification system, however, Mintzberg had grouped the interpersonal roles separately. In the present studies the liaison and figurehead roles were associated with information-processing roles and the leader role was integrated into the group of decision-making roles. The definition of interpersonal roles as a distinct group may therefore be unnecessary, since they are integrated into the other groups. Interpersonal aspects of managerial work are important, but they seem not to serve a function different from the present input-output formulation. As Weick (1974) argued, the leader role is perhaps the one that fits the input-output framework the least, since leadership is actually a part of each of the other nine roles. Although the figurehead and liaison roles involve interpersonal activity, their major organizational function is providing informational input. Our results suggest, therefore, a modification of Mintzberg's classification. The proposed regrouping of roles into informational and decisional groups parallels previous research on managerial behavior, such as the distinction be-

tween access to information and the power to make decisions, which Bass and Valenzi (1974) identified as determinants of managerial style.

The data show that the correlations between the six decisional roles are relatively large in comparison to the correlations between the four informational roles. This suggests that subjects tended to respond either to all memos necessitating decision activity or to none at all. In contrast, subjects chose to adopt one or another of the informational roles, rather than adopting a relatively integrated behavioral set, as was the case with the decisional roles. Thus, although Mintzberg (1973, p. 180) argued that the 10 managerial roles would form an integrated whole, the present analysis indicates that some roles may be more emphasized than others. Furthermore, the differences in role utilization between the two groups in the second study suggest that structural organizational variables may affect the extent to which a certain role behavior is exhibited.

The limitations of the present study should be indicated. First, a manager's behavior in a simulation may not fully correspond to his actual behavior on the job. For example, managers are not limited to written memos in communicating with their subordinates, and Mintzberg (1973) noted that the executives in his study favored verbal communications. Further, it is likely that the interpersonal aspects of managerial work are more evident on the job than in a simulation. However, the in-basket simulation allows behavioral records to be collected rather than reports of attitudes, which are the data obtained from questionnaires. In the present studies, the idea was to structure opportunities so as to measure whether subjects assumed a given role and then to see whether the groupings corresponded to Mintzberg's classification scheme. For this purpose, the in-basket simulation would seem to have been a better instrument than conventional research vehicles. Actual decisions regarding the issues mentioned in the memos could also be analyzed to provide further insights into the more specific nature of managerial work. A second limitation is the problem of external validity. The in-basket memos

were written based on Mintzberg's definitions of managerial roles. These were subsequently used to test the relations among those roles. Therefore, although the analysis supported the basic ideas suggested by Mintzberg, it does not necessarily indicate that the roles have construct validity or that the instrument has external validity. Further work is needed to examine the construct validity and the generalizability of the present findings to a real, on-the-job managerial behavior.

Reference Note

1. Mintzberg, H. Personal communication, July 25, 1978.

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