

The Age Context of Performance Evaluation Decisions

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This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of Center research, conferences, and projects available to others interested in human resource management in preliminary form to encourage discussion and suggestions.

**Abstract**

Organizational demography contends that demographic characteristics of individuals, examined at individual, dyadic, group, and organizational levels of analysis, exert significant effects on organizational processes. The purpose of this paper was to test the contextual effects created by the interaction of work group age composition and supervisor age on supervisor evaluations of subordinate performance. Two competing models of age demography were tested. The similarity model predicts that supervisors similar in age to the work group they supervise will issue generally higher performance ratings. The dissimilarity model developed in this paper predicts the opposite. Support was indicated for the dissimilarity model. Implications of the results are discussed.

### **The Age Context of Performance Evaluation Decisions**

The social context has been viewed as an increasingly important influence on decisions and actions in organizations. Features of the context that need to be considered include characteristics of decision makers and characteristics of the situations or environments in which they operate. For theoretical, practical, and legal reasons, age is considered an important demographic characteristic affecting human resources decisions and actions, and its compositional context has been studied at individual and dyadic levels, but less so at the group level, of analysis. The purpose of the present study was to investigate the age context of performance evaluation decisions by examining the contextual influence dynamics created by work group age composition and supervisor age on supervisor evaluations of subordinate performance.

#### Social Context of Decisions

One area in the behavioral sciences that has seemed to lag behind many others in terms of theoretical development and systematic investigation is the social context in which organizational decisions are made. Hackman (1986) recently issued a call for more research on social influence and group dynamics in organizational contexts. Certain factors, when salient, contribute to the development of a social context, which surrounds and permeates ongoing activities in organizations. Levine and Moreland (1990) reviewed prior research on group composition as a cause of behavior and outcomes, and Mullen (1983) has attempted to advance theoretical development in this area. He argued that variability in the proportion of group members who possess a given characteristic (e.g., age) is critical to an understanding of compositional effects. These notions closely relate to the foregoing idea of saliency of contextual factors, and it

is these salient factors that contribute to the "definition of the situation" which serves to influence decisions made in such contexts (March & Simon, 1958).

When one examines the context in which decisions are made, consideration must be given to both the characteristics of decision makers and the features of the situations or environments in which they operate. Ferris and Mitchell (1987) recently provided a conceptualization of context, salience, and social influence components and their effects in human resources research, and increased attention is being devoted to an examination of contextual effects on performance evaluation decisions (e.g., Landy & Farr, 1980; Mitchell & Liden, 1982).

Some more specific examples of the notions of salience, context, and compositional effects discussed by Hackman (1986), Ferris and Mitchell (1987), and Mullen (1983) are provided by recent research on the salience of key demographic characteristics, like sex and age, on human resources decisions. Heilman (1980) manipulated the salience of sex by varying the proportion of males and females in an applicant pool, and she found that this affected personnel selection decisions. Similarly, Cleveland, Festa, and Montgomery (1988) found that varying the proportion of older/younger job applicants in an applicant pool produced different evaluations of the older applicant. They found that as the number of older applicants in an applicant pool increased, an older applicant received more favorable ratings of job suitability and potential for advancement.

Whereas these two studies are interesting and noteworthy regarding salience and context effects, they are limited in at least two respects. First, the studies were laboratory-based experimental investigations with student subjects, which raises some

questions of realism and generalizability. Second, they investigated only environmental aspects of the context, and failed to include the characteristics of decision makers as contextual features. The first limitation can be partially addressed by casting demographic characteristics in a broader and more realistic perspective; that is, organizational demography.

### Organizational Demography as Context

According to Pfeffer (1983), "Demography refers to the composition, in terms of basic attributes such as age, sex, educational level, length of service or residence, race, and so forth of the social entity under study" (p. 303). These variables, which describe or profile an organization's members, offer more than merely descriptive statistics. They introduce a dynamic which cannot be fully appreciated as simply the effects due to the sum of the individual descriptors. Kanter (1977) offered an example when she argued that proportions of individuals in organizations will often have important effects on those who are in the minority groups. This was due to the increased visibility and scrutiny of minority group members. Pfeffer has suggested that the relative proportions of individuals in organizations that structure behavior and interactions are what makes demographic distributions a distinct reality.

Theory and research on organizational demography has discussed a number of different demographic characteristics including tenure, age, and education, and also a number of levels of analysis (i.e., individual, dyadic, group, and organization). For theoretical, practical, and legal reasons, age as a demographic characteristic has been receiving increased research attention.

### Age Demography

It is suggested here that age plays a major role in establishing the social context in which organizational members interact. With the projected changing age composition of the workforce and the contemporary legal focus on age discrimination (e.g., Ahlburg & Kimmel, 1986; Rosen & Jerdee, 1988), organizations are presented with major challenges to develop a more informed understanding of how employee age influences important outcomes. These challenges are beginning to be addressed by researchers who are pursuing theoretical and methodological advances designed to provide more definition for the role of age in the organizational sciences (Ferris, 1988; Kacmar & Ferris, 1989; Lawrence, 1987).

Age demography as a characteristic of the organizational context has been investigated at several different levels of analysis. One might conceive of age research at different levels of analysis from the individual to the organizational as a progression of understanding regarding the contextual role age plays in organizations. Furthermore, this progression of understanding is not believed to be simply additive in nature across levels, but rather new and different contextual dynamics are introduced as one proceeds through the levels of analysis.

Individual level. A traditional focus of research activity on age has been at the individual level of analysis, conceptualizing age as an attribute of the employee which influences human resources decisions presumably through the inferences decision makers form about age (e.g., Ferris, Yates, Gilmore, & Rowland, 1985). This research focuses on the decision maker reacting to a characteristic of a single individual and thus takes a limited perspective on context. Furthermore, the degree of understanding was advanced

when research began to assess the characteristics of the decision maker (e.g., age) as well as those of the individual employee (cf. Cleveland & Landy, 1981). Theoretical insights have been made in this area recently by Lawrence (1988), who found that subordinates who were perceived by a manager as being younger than the normative age for people in their position received higher performance evaluations than subordinates who were perceived as being older than the typical person in that position. Interestingly, this finding did not hold for the actual age distributions for each position, only perceptions.

Dyadic level. The realization that there may be interesting and important compositional effects resulting from variations in demographic characteristics within social contexts led Tsui and O'Reilly (1989) to investigate age demography at the dyadic level. Relying upon the well-known similarity-attraction paradigm from the social psychological literature (Byrne, 1971), Tsui and O'Reilly predicted that as demographic similarity between supervisor and subordinate decreases, mutual attraction and affect decreases, resulting in lower supervisor evaluations of subordinate performance. In their study, dyadic similarity was assessed on several demographic characteristics, and significant effects on a number of outcome variables were found for several of these relational demographic factors. However, supervisor-subordinate age similarity/dissimilarity did not correlate significantly with either supervisor affect or liking for the subordinate or supervisor evaluations of subordinate effectiveness.

Group level. Several studies have investigated age demography at the group level of analysis, and all share a similar focus. Wagner, Pfeffer, and O'Reilly (1984) studied turnover in top management teams and found that it was not age per se, but relative

differences in ages of employees, that predicted departure. Group age composition and turnover was also investigated by McCain, O'Reilly, and Pfeffer (1983). They found that older employees demonstrated a greater tendency to leave the organization when they worked in a department dominated by younger employees. A third study, by Zenger and Lawrence (1989), investigated the association between age demography and technical communication, and found that age similarity among group members increased communication frequency.

The focus that all of this group-level age demography research shares concerns the criterion or outcome variables investigated. All of these studies examined age demography effects on the attitudes and behavior of the work group members themselves. None of the studies have considered the potential effects of group age demography on human resource decision makers and their evaluations.

Thus, our understanding of age demography effects has increased as we have observed research conducted at several different levels of analysis. However, when viewing age as a feature of the social context, some limitations emerge with respect to the status of current knowledge, and these limitations pertain primarily to group-level research on age. These limitations involve the components of social context analysis that were discussed above. It is of importance to investigate both the age demographic effects of the context or work group within which human resources decisions are made and the age-related characteristics of the individual decision maker. Furthermore, there is sufficient knowledge and research evidence available to construct alternative explanations of group-level age demography effects on human resources decision outcomes.



### Competing Models of Group-Level Age Context

Two competing models of group-level age demography effects on performance evaluation decisions are proposed and tested in the present study. Both models propose an interaction between the age demography of the work group and the age demography of the decision maker/supervisor, however, the specific predictions are opposite in direction.

The dissimilarity model is derived from theory and research on power and politics. French and Raven (1968) identified referent power as a significant base of a leader's power. Referent power refers to the degree to which the subordinate is attracted to and identifies with the leader. If demographic similarity leads to mutual attraction, then leaders who differ in age (or any other demographic characteristic) from their subordinates will be less liked, less respected, and therefore have lower power and influence. Given that supervisors either older or younger than their work group may have lower power, they might be expected to try to enhance their position in the work group. While there are several ways in which the supervisor low in referent power can do this, perhaps the most direct method is to attempt to influence subordinate impressions by giving them higher performance ratings. Research in social psychology indicates that providing others with positive evaluations increases affect toward the evaluator (Drachman, DeCarufel, & Insko, 1978). Further, employees respond more favorably to a leader that is perceived as rewarding (Rubin & Lewicki, 1973; Schopler, Gruder, Miller, & Rousseau, 1967). Finally, the transactional model of leadership suggests that a leader may trade higher ratings to subordinates for increased power (Beckhouse, Tamer, Weider, & Weinstein, 1975; Fodor, 1978).

Recent performance evaluation research provides added support for these notions concerning the power-enhancing behavior of supervisors. Longenecker, Sims, and Gioia (1987) demonstrated that supervisors use intentional inflation or deflation of performance evaluations in order to maximize their own goals and self interest, and Villanova and Bernardin (1989) illustrated how supervisors use performance ratings to manipulate subordinate impressions of them. Thus, the dissimilarity model predicts that dissimilarity in age demography between a work group and supervisor will result in the supervisor providing generally higher performance evaluations in that group than in situations where supervisors and their work groups reflect greater similarity in age demography.

The similarity model is a group-level extrapolation of the dyadic relational demography model tested by Tsui and O'Reilly (1989), which is derived from the similarity-attraction paradigm developed in the social psychological literature (Byrne, 1971). Whereas Tsui and O'Reilly conceptualized demographic similarity at the dyadic level (i.e., between a supervisor-subordinate pair), the proposed group-level extrapolation suggests that demographic similarity is reflected by congruence between the age of the supervisor and the group age composition or demography (i.e., a generally young group or generally old group). The similarity model suggests that similarity contributes to interpersonal attraction and positive affect, which in turn results in supervisors rendering higher performance evaluations. Thus, this model predicts that similarity in age demography between a work group and supervisor will result in the supervisor providing generally higher performance evaluations in that group than in

situations where supervisors and their work group reflect greater dissimilarity in age demography.

### Statistical Controls

It has been found that increased attention causes the evaluative components of an impression to become consistent, thus producing evaluations that are more extreme in nature (Fiske & Taylor, 1984). However, such polarized impressions tend to operate only for those people who possess the relevant cognitive structure or schema (Tesser, 1978), perhaps produced by past experience. Thus, experience as a supervisor in doing performance evaluations in specific contexts should increase evaluative extremity with respect to the particular salient characteristic in question (cf. Mitchell & Kalb, 1982). Hence, supervisor experience was controlled in order to provide a less confounded test of the potential influence of the contextual variables in the present study.

Subordinate age also was controlled when testing the effects of work group age composition and supervisor age on performance ratings. Many studies have investigated the relationship between age and job performance. According to a major review by Rhodes (1983), the findings from these studies provide mixed results. Because there is some evidence, albeit mixed, of a relationship between age and job performance, employee age was controlled in the test for the effects of work group age composition and supervisor age on performance ratings.

## **Method**

### Sample

The participants in this research were 81 registered nurses and 27 nursing supervisors from a 280-bed midwestern hospital. Participants from all major

departments (e.g., emergency room, post-op, oncology, etc.) of the hospital were represented in the sample, and from both the day shift and afternoon shifts. Questionnaires were administered to all nurses at the end of their shift as part of a large-scale study of work attitudes and behavior. The researchers provided questionnaires and instructions concerning completion to nurses in a large on-site conference room where nurses reported at the end of their shift. Participation was voluntary, but all nurses on the two shifts who were present at work on that day took time to participate. All staff nurses and supervisors were female and the average age was about 34 years.

### Measures

Work group age composition. The 81 staff nurses in the present sample worked in 26 different work groups in the hospital, each with a nurse supervisor. A work group was defined in this study as a unit made up of staff nurses, all reporting to the same supervisor. Because three of the work groups involved simply one nurse reporting to a supervisor, these were not included in the sample. Thus, 23 work groups, with a total of 78 nurses, comprised the sample of this study. The demographic characteristics of these groups are presented in Table 1. The 23 groups were assessed as to the proportion of nurses age 40 and over that each included, resulting in units being categorized into two groups: (1) Less than 50% over age 40 (younger groups) and (2) At least 50% over age 40 (older groups). This resulted in 54 staff nurses in group 1 and 24 staff nurses in group 2. The age of 40 was used because it is the lower limit of the age group defined as a protected class by the Age Discrimination in Employment Act (1967).

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Insert Table 1 about here

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Work group age range. The age range was calculated by subtracting the age of the youngest member from the age of the oldest member of the work group.

Supervisor age. Supervisor age was gathered by self-report.

Performance ratings. Supervisors rated their subordinates' overall work performance on a five-point, Likert-type scale (1 = very poor, 5 = very good).

Control variables. Subordinate age and supervisor experience (tenure in the organization) were both assessed through self-report questionnaire items.

## Results

### Preliminary Analyses

Two sets of preliminary data analyses were conducted in order to test for potential contaminating influences which could render the age composition analyses ambiguous.

Relational demography. Tsui and O'Reilly (1989) argued that it is dyadic similarity (i.e., between supervisor and subordinate) on demographic characteristics that affects supervisor evaluations of subordinates, and they computed and tested for a number of relational demographic indices including age (i.e., calculated as the squared difference between the supervisor's age and the subordinate's age). Whereas they found no significant effects of the relational age index on supervisor's evaluations of subordinates, it was considered necessary in the present study to also test for such effects. If such analyses were not conducted, and work group age composition effects

were found, the potential competing explanation that such observed effects were actually due to relational demography could not be conclusively eliminated.

Following Tsui and O'Reilly's (1989) procedure, the squared difference in age was computed between each supervisor-subordinate dyad, and this index was entered into a regression equation (i.e., with performance rating as the criterion variable) following the entry of supervisor age and subordinate age. Similar to the results reported by Tsui and O'Reilly, the relational age index failed to achieve statistical significance (beta = .07,  $t < 1$ , ns).

Work group age range. Given the operationalization of the work group age composition variable, it is quite possible that an additional influence could be introduced in the form of age range differences across groups. More specifically, it is possible that work groups with identical percentages of members who are 40 years of age and older will vary considerably. For example, a work group with a 20 year old and three 60 year olds will be classified the same way (i.e., group 2 - more than 50% over age 40) as a work group with a 39 year old and three 40 year olds, yet the contextual dynamics and thus, influences on supervisors, could be quite different.

The potential effects of work group age range were investigated by regressing supervisor ratings of subordinate performance on age range, along with work group age composition and supervisor age. No main or interaction effects involving work group age range even approached statistical significance at conventional levels (a complete reporting of the results of these analyses is available from the first author).

Hierarchical moderated regression analyses, examining the effects of work group age composition and supervisor age, were conducted on supervisor ratings of subordinate

performance, controlling for the effects of supervisor experience and subordinate age.

The regression results are presented in Table 2.

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Insert Table 2 about here

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The results demonstrate a significant main effect for subordinate age (as one of the control variables), and a significant interaction of work group age composition and supervisor age was found on performance ratings. The form of this interaction is presented in Figure 1. Younger supervisors gave higher performance ratings to employees in older work groups while older supervisors gave higher performance ratings to employees in younger work groups, thus lending support to the dissimilarity model. Furthermore, this more complex group-level demographic dissimilarity interaction was found despite the presence of a significant individual-level subordinate age effect.

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Insert Figure 1 about here

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### **Discussion**

The results of the present study provide some evidence in support of the dissimilarity model of age demography. Specifically, work group age composition and supervisor age interacted to influence supervisor ratings of subordinate performance demonstrating that younger supervisors tended to give higher performance ratings to subordinates in work groups of older age composition than younger age composition.

The pattern was opposite for older supervisors; they tended to give higher performance ratings to subordinates in younger age composition work groups than older.

The results of this study have relevance for recent theoretical and empirical research in the area of demography. Some of this work has focused on the length of service or tenure demography of entire organizations and demonstrated effects on outcomes such as turnover (e.g., Pfeffer & O' Reilly, 1987). Other work (e.g., Tsui & O' Reilly, 1989) has focused on the degree of similarity of demographic characteristics in supervisor-subordinate dyads. The present study suggests that demographic influences can operate at the work group level as well, and that this perspective contributes meaningfully to our knowledge base above and beyond information gained from research results at the individual and dyadic levels of analysis.

The present direction of research also has relevance for contributing to the knowledge base concerning the performance rating process (Landy & Farr, 1980), and for expanding the existing understanding regarding the role age plays in organizational science theory and research which has recently been examined (Ferris, 1988; Lawrence, 1987). In this light, an important point to underscore is that the present research examined how supervisors rated the performance of older versus younger employees as well as how age demographic compositional effects influenced such ratings. Interestingly, group-level age demography demonstrated a significant interaction with supervisor age to influence supervisor ratings of subordinate performance in spite of a significant individual-level effect of subordinate age.

The present study has several limitations that need to be noted. Because the present notions were tested on a convenience sample, it was not possible to construct



the most rigorous test of the ideas under investigation. The nature of the sample could be problematic because it focused on all female staff nurses and their supervisors in a hospital setting. While there is little reason to generally expect this sample and setting to be unique, and thus for the obtained results to be artifactual and nonreplicable in other settings, that remains an empirical question. However, one potential concern could be with the exclusive reliance on female supervisors, particularly in light of the power-enhancing theoretical underpinnings of the dissimilarity model. It is interesting to note that female supervisors may be more likely to possess more of a socioemotional or communal orientation (Kaplan, 1989). This suggests that female supervisors may possess a concern for harmonious relations in the group and be more subject to the influence of group pressures. Future research should conduct similar competitive tests using male supervisors as well as female.

Another limitation concerns the potential effects of group size. In the present study, there was little variability on group size (i.e., the range was 2-4 subordinates). Further research needs to investigate groups with greater variability on size, because the dynamics of the social context might be quite different with respect to age composition in small versus large groups.

A third limitation concerns the rather general nature of the performance rating used in the present study. Supervisors were asked to make only an overall rating of the subordinate's job performance on a 1-5, Likert-type scale. Future research should examine more detailed and focused performance ratings, employing multiple criteria, so that a more informed understanding can be gained concerning how work group age composition influences ratings of specific performance criteria.

The results of the present study by no means put closure on organizational demography theory and research. Indeed, there is much to be done and in many respects, this area of inquiry is in its infancy. However, several issues are becoming increasingly clear. One is that organizational demography represents an important feature of the social context that operates at different levels of analysis. Another is that while some research has been conducted on work group demography, it has been primarily directed at how this context affects the attitudes and behavior of work group members. The present results contribute to a better understanding of how the social and compositional context of groups influence organizational decisions.

Yet another issue concerns the challenges for theory development in the area of organizational demography. Research should continue to seek clarification of the demographic contextual dynamics at all levels of analysis, and ultimately to move toward the development of a multi-level theory of organizational age demography which articulates the nature of contextual effects on both employee behavior and human resources decision makers.

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Table 1

Demographic Characteristics of Work Groups

Group	% Over Age 40	Sup. Age	Sup. Exp.	Subordinate			Subordinate			Performance			Group Size
				Age			Experience			Rating			
				<u>M</u>	<u>SD</u>	<u>Range</u>	<u>M</u>	<u>SD</u>	<u>Range</u>	<u>M</u>	<u>SD</u>	<u>Range</u>	
1	33%	37	24	37.67	8.96	32-48	10.33	1.53	9-12	3.67	1.15	3-5	3
2	33%	23	5	33.33	13.80	23-49	14.00	9.17	6-24	3.00	1.00	2-4	3
3	0%	29	48	25.00	3.00	22-28	24.00	6.00	18-30	4.33	0.58	4-5	3
4	0%	25	10	22.25	1.50	21-24	17.00	6.00	12-24	4.25	0.96	3-5	4
5	0%	27	10	26.25	4.03	23-32	44.75	46.69	8-111	3.75	0.50	3-4	4
6	25%	29	24	34.75	4.27	30-40	60.25	57.10	19-144	3.75	0.50	3-4	4
7	25%	41	46	34.50	9.57	24-46	83.75	71.50	48-191	4.25	0.96	3-5	4
8	75%	30	10	39.00	10.13	24-46	80.00	55.98	30-141	4.25	0.50	4-5	4
9	25%	35	6	37.50	16.86	23-61	52.25	41.57	12-101	3.75	0.50	3-4	4
10	75%	43	54	46.50	13.18	30-59	97.50	65.50	10-167	4.75	0.82	4-5	4
11	0%	24	15	27.50	6.66	22-37	20.00	4.69	15-24	4.25	0.50	4-5	4

Table 1 (continued)

Group	% Over Age 40	Sup. Age	Sup. Exp.	Subordinate Age			Subordinate Experience			Performance Rating			Group Size
				<u>M</u>	<u>SD</u>	<u>Range</u>	<u>M</u>	<u>SD</u>	<u>Range</u>	<u>M</u>	<u>SD</u>	<u>Range</u>	
				12	50%	59	96	35.00	11.30	27-43	12.00	14.14	
13	0%	29	12	26.00	6.08	22-33	28.33	9.29	18-36	4.33	0.58	4-5	3
14	0%	38	2	27.75	6.24	21-36	52.50	41.32	20-108	4.00	0.82	3-5	4
15	25%	29	24	39.25	10.31	30-54	74.75	71.82	12-167	3.75	0.50	3-4	4
16	50%	50	2	34.75	10.78	24-45	28.25	45.40	1-96	3.50	0.58	3-4	4
17	75%	45	18	46.00	11.89	32-60	116.50	180.60	13-387	3.75	0.50	3-4	4
18	25%	40	17	38.50	12.50	30-57	26.25	31.12	4-72	4.25	0.50	4-5	4
19	0%	43	18	30.75	5.62	26-37	19.25	7.63	12-30	4.25	0.50	4-5	4
20	0%	22	3	23.50	0.71	23-24	24.00	16.97	12-36	4.00	0.00	4-4	2
21	50%	24	12	36.50	16.26	25-48	101.50	109.60	24-179	3.50	0.71	3-4	2
22	50%	24	4	38.50	20.51	24-53	60.00	50.91	24-96	4.00	0.00	4-4	2
23	50%	49	7	37.50	12.02	29-46	24.00	16.97	12-36	3.50	0.71	3-4	2

Note: Sup. Age = Supervisor Age; Sup. Exp. = Supervisor Experience; M = Group Mean; SD = Group Standard

Deviation. Experience for both supervisor and subordinate is expressed in months.

**Table 2**

**Moderated Regression Analysis Results Examining the Influence of Work Unit Age Composition and Supervisor Age on Performance Ratings by Supervisor Controlling for Supervisor Experience and Subordinate Age**

Dependent Variable:	B	R <sup>2</sup>	ΔR <sup>2</sup>	F (Step)	df
<b>Performance Ratings by Supervisor</b>					
<u>Control Variables</u>					
Supervisor Experience	.10	.01	.01	<1	1,79
Subordinate Age	- .23	.06	.05	4.35*	1,78
<u>Predictor Variables</u>					
Work Group Age Composition (A)	.02	.06	.00	<1	1,77
Supervisor Age (B)	.05	.06	.00	<1	1,76
A x B	-1.32	.11	.05	3.98*	1,75

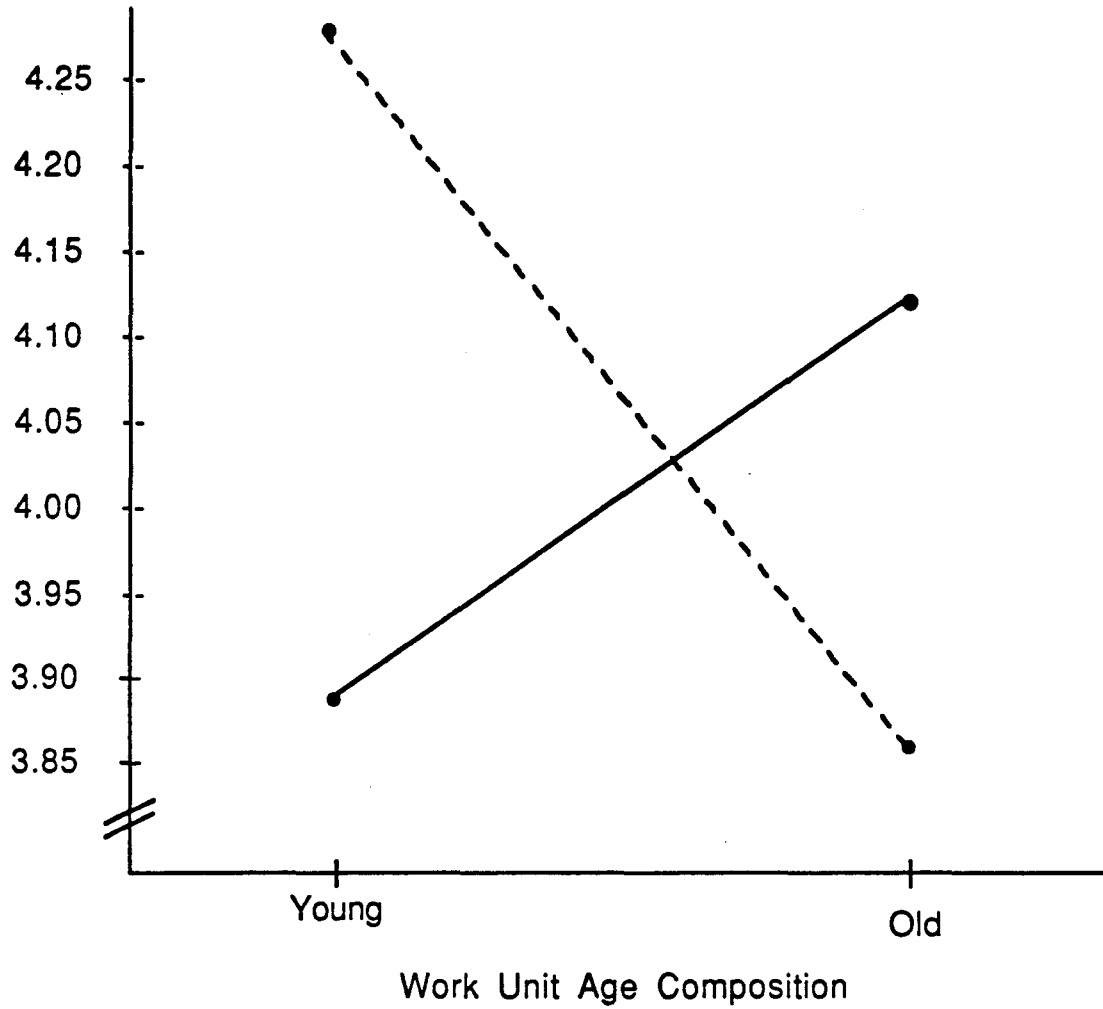
\*p < .05

\*\*p < .01

**Figure Caption**

Figure 1. Interaction of work unit age composition and supervisor age on supervisor ratings of subordinate performance.

Subordinate  
Performance  
Ratings



----- Old Supervisors  
—— Young Supervisors