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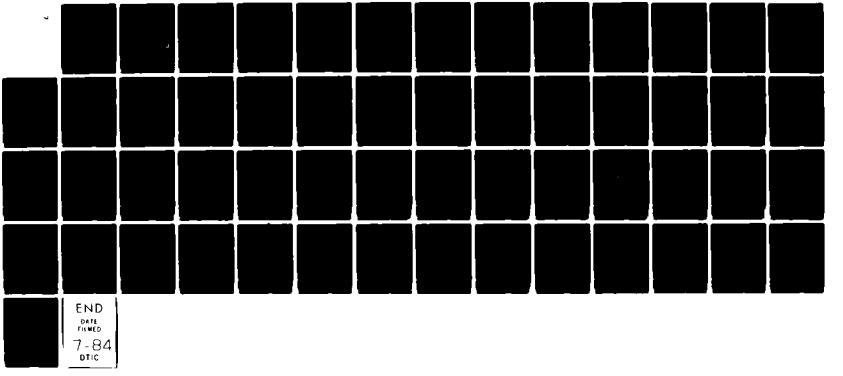

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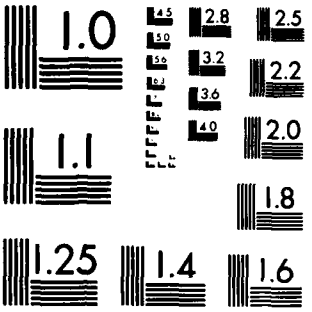

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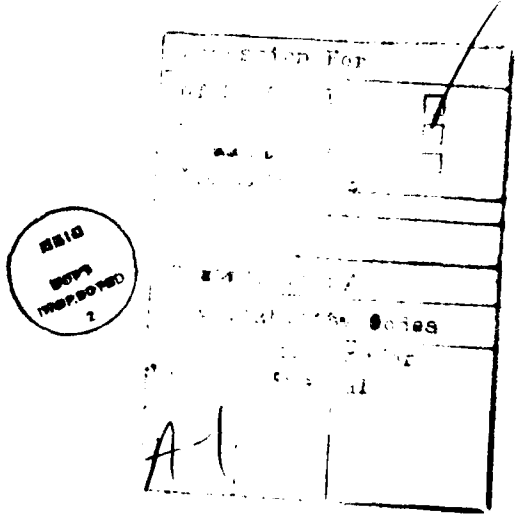

# Normative and Structural Perspectives On Age In A Work Organization

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December, 1983

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# NORMATIVE AND STRUCTURAL PERSPECTIVES ON AGE IN A WORK ORGANIZATION[1]


## ABSTRACT

Age grading, the differentiation of social organizations by members' age judgments, is widely regarded to be a universal aspect of social life. Yet most studies examine age structurally, using age distributions, rather than normatively, using group members' beliefs. Survey data measuring employees' age judgments of managerial careers were collected from an electric utility (N=488, 47%). There is wide agreement on age boundaries for each level; however, employees' age judgments differ systematically from the company's actual age distribution. This suggests not only that age grading occurs in work organizations, but that both normative and structural perspectives are necessary to study this phenomenon.

# NORMATIVE AND STRUCTURAL PERSPECTIVES ON AGE IN A WORK ORGANIZATION[1]

Age is one of the few universal human experiences: As a result, the social norms that develop around it are believed to exert considerable influence on behavior (Atchley 1975). Although the social significance of age is widely acknowledged (Parsons 1942; Cain 1964; Clausen 1972; Elder 1975), little empirical work exists on the subject (Linton 1940, 1942). This is particularly true for studies within work organizations. Recent research suggests that work organizations develop their own cultures (Pettigrew 1979; Dyer 1982; Jelinek, Smircich, & Hirsch 1983) and age norms, as underlying components of human interaction, should be visible in such settings.

The organizational literature provides indirect evidence for the existence of age norms. Managers interpret the motivation and performance of employees on the basis of age (Rosen & Jerdee 1976; 1977; Cleveland & Landy 1983), men and women make decisions about their careers based on age expectations (Martin & Strauss 1956; Sofer 1970; Lawrence 1980), and engineering firms use age implicitly to define the technological obsolescence of employees (Dalton & Thompson 1971; Thompson & Dalton 1976). These behaviors suggest that people in organizations develop and respond to a shared picture of age-appropriate behavior. However, the existence of such a shared picture has always been inferred rather than assessed directly.

Moreover, even the existence of shared age judgments[2] has never been established. Age norms do not exist without shared age judgments because expectations of age-appropriate behavior cannot be enforced without wide agreement on the appropriate ages. Thus, as a necessary first step in the direct establishment of age norms, this paper presents results of the first organizational study in which the existence of shared age judgments is

demonstrated. The agreement between shared age judgments and actual age distributions is also examined.

Age has been studied in the past either by examining age judgments, the normative perspective, or by examining actual age distributions, the structural perspective. The two perspectives are distinguished by their definition of the age groups used to predict behavioral outcomes. From the normative perspective, age groups, also known as age grades (Radcliffe-Brown 1929, p. 21)[3], are defined by the shared age judgments of members of a social organization. Members agree on what constitutes acceptable age group behavior, and when the bounds of acceptable behavior are violated, the violator is sanctioned (cf. Homans 1950, p. 122). Age groups influence behavior because membership is not voluntary. People can neither change their age, nor escape the widely held assumptions about and expectations of their age group. Thus, it is not chronological age itself that is of interest in the normative model, but the meanings people construct around each age.

Normatively defined age groups have never been studied in work organizations, and the first question of this research is "Are work organizations age graded?" It has been shown that some societies are age graded, that is, members' shared age judgments differentiate between age groups. Eisenstadt (1956) used anthropological records of numerous third world societies to identify members' agreement on age group definition, while Neugarten et al. (1957, 1968, 1973), collected data from a U.S. sample to examine members' agreement directly. In both studies, societal members were observed to have shared judgments of age-appropriate behavior that distinguished between different age groups.

Age grading is difficult to study. Societies are complex, and age groups based on members' age judgments tend to overlap, rather than be discrete. This may be part of the reason why most work on age groups is done from the

structural perspective (e.g. Smith 1973; Featherman & Hauser 1978; Pfeffer 1981; Kaufman & Spilerman 1982; Stewman & Konda 1983).

From the structural perspective, age groups are defined *a priori* by the researcher. Age affects behavior because the distribution of ages within a social group constrains the roles and statuses allocated to members. The scarcity of young marriageable men in England following World War II, for instance, increased the age range of men considered as acceptable mates by young women. The work of Matilda Riley and her colleagues (1972, 1974, 1976), like Eisenstadt's, is based on previous age-related research. However, in this work, societies are divided into discrete age categories, or strata, composed of individuals of similar age. Age strata are distinguished by "socially significant aspects of people and roles" such as chronological age, as in census categories; biological stage, as in categories based on physical development; psychological stage, as in the life stage models of Levinson (1978), Vaillant (1979), or Gould (1979); or stage of social development, as in Kohlberg's (1973) model of moral development.

The distinction between the normative perspective that defines age groups internally by the shared judgments of members and the structural perspective that defines age groups externally from the perspective of the researcher is crucial. The most important question from the normative perspective, "Are work organizations age graded?" is irrelevant if age groups exist by definition. When chronological age automatically assigns employees to an age group, all work organizations are age graded.

Some structuralists suggest that structurally defined age categories are meant to index socially meaningful events (Riley et al. 1972). And, it may be that social meanings can be represented within the context of observed age distributions. If so, then both normative and structural perspectives can be captured within the study of age distributions. However, it is unknown whether

age group members perceive the same meanings as are inferred by the census researchers, demographers, or life stage theorists who define such age categories. In structural approaches, age group membership indexes behavioral outcomes whether or not members are aware of their membership.

At first glance, the specification of age groups by the structuralist seems quite neat, compared with the overlapping groups studied by the normatist. Further study, however, reveals that structural age groups may not be so neat after all. For example, the division of life into age categories whose occupants are assumed to be similar (cf. Spenner, Otto, & Call 1982, p. 9) often disregards whether members are similar on the criteria of interest (Lawrence 1984b). Blau and Duncan (1976, pp. 81-84) address this problem indirectly in discussing the difficulty of using cohort and generational concepts simultaneously to explain historical trends in the occupational structure. Age groups or cohorts defined by the researcher for sons do not coincide with cohorts defined for fathers, thus inferences about generational mobility from cohort data are difficult to make. Hogan (1981) is even more explicit. His research shows that being off schedule with demographic age patterns for schooling, work, and marriage leads to marital disruption and lower total earnings for men. However, he suggests demography is not the entire picture--there is overlap between the normative and structural approaches. The problem is that little is known about age norms. Hogan quotes from Elder: "No large sample study has provided evidence on normative expectations and sanctions regarding the timing and synchronization of social roles and transitions over the life span...The process by which age norms or timetables are constructed, transmitted, and learned remains largely unexplored territory" (1981, p. 13).

As Hogan suggests, there probably is interaction between the normative and structural explanations of age effects. The importance of differences

between the two approaches rests on the degree to which members' age judgments agree with the actual age distribution. If judgments are accurate, age norms develop around the actual age demography. Thus, demographically selected age categories may well capture socially shared age assumptions and expectations. However, if judgments are inaccurate, then the normative and structural approaches are describing different phenomena. This, then, is the crux of the second question addressed in this study, which is: "Do members' age judgments accurately reflect the actual age distribution of their organization?"

This paper presents a study of age in a work organization in which both employees' age judgments and actual age distributions are analyzed. The first major result of the study is that the organization is age graded, that is, employees develop shared age judgments of the company. The shared judgments, however, differ markedly from the actual age distribution, thus the second major result is that neither normative nor structural perspectives should be used exclusively in the study of age as a social phenomenon.

## III. METHODOLOGY

Demographic and questionnaire data on managerial careers were collected from a large electric utility. The Bennix Power Company (not its real name), or BPC, is an old, established firm. Traditionally, people come to work in the company after school and remain until retirement. The average age of exempt employees is 45 (range=22-66) and the average tenure is 20 years (range=0-45). There are eight managerial levels: Level 1 is a first level supervisory position and Level 8 includes the Chief Executive Officer and President.

Managerial careers have inherent advantages for studies of age in a work organization. The stages of progress are rungs of a formal status ladder, with those on the lower rungs considered less important than those on higher rungs.[4]

Since an individual can occupy only one level at a time, formal advancement is associated inevitably with the age of the individual, thus the many levels in the status system of managerial careers emphasize the differences between managers of different ages. This makes it likely that employees use age to differentiate between career levels.

Position on a career ladder also provides a behavioral anchor for age assumptions and expectations. Age is socially meaningful only when it indexes some outcome, and the meaning of any particular career level has strong convergent and nomological validity (cf. Bagozzi 1980) for organizational members. Thus, it is reasonable to assume that the meaning of "career level" is constant and that observed variation in judgments results from real differences in perceptions of age.

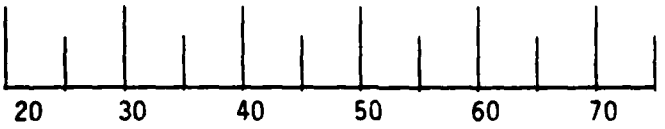
The first question to be answered is whether managerial careers at BPC are age graded.[5] It seems likely that age grading is encouraged by low turnover, thus BPC is probably an ideal first organization in which to study age grading. Managerial vacancies are filled "in house," and advancement is a slow process. Employees have ample opportunity, therefore, to develop shared and reasonably accurate judgments of the age distribution.

However, BPC is only one organization, and although the results of this study may be generalizable, we do not know enough about age grading to know to what organizations they would generalize. Preliminary interviews conducted for this research suggest that age judgments of career progress are highly dependent on organizational characteristics such as industry, size, age, and rate of growth. In addition, formal career ladders differ between companies, thus the age group criterion may be organization-specific. The question of generalizability is one of the significant areas for future work.

The questionnaire was developed in several stages through pre-testing with MBA students (22-30 years old), middle managers in the Sloan Fellows program

(35-45 years old), and executives in the Senior Executives program (45-60 years old) at the Sloan School of Management, MIT. Later, it was reviewed with several individuals at BPC. The questionnaire asks, for each career level in the organization, subjects' judgments of 1) the typical age of individuals in that level, and 2) the age range of individuals in that level. Actual company titles for each career level were used. In the following example, the respondent indicates that he believes the typical age of Supervisors is 37 and that Supervisors range in age from 25 to 58 years old.[6]

1) In this company, my perception is that Supervisors are:




Demographic data as well as information on attitudes towards work were also requested. The questionnaire was distributed through company mail to all exempt employees (N=1043) in December 1980. The company permitted one follow-up memorandum, distributed in January 1981. Forty-seven percent (N=488) of all managers returned the questionnaire, which is the expected return given the constraints imposed by the company (Heberlein & Baumgartner 1978). A comparison of these managers with actual demographic data shows the sample is representative of the population in its age, tenure, and gender distributions.

Employees' age judgments and the actual age distributions within BPC were used to address the two central questions of this study: "Are work organizations age graded?" and "Do members' age judgments accurately reflect the actual age distribution of their organization?" Given the definition of age grading and the specified study of managerial careers within the BPC, these questions can be restated as two propositions:

Proposition 1: Career levels within BPC are differentiated by the shared age judgments of employees, and

Proposition 2: Judgments of the typical age, youngest age, and oldest age are similar to the actual ages of the employee population for each career level.

## IV. ISSUES IN THE ANALYSIS OF AGE GRADING

Before proceeding with the analysis and results, this section describes how one can determine from questionnaire data whether an organization is age graded.

There are two criteria for the existence of age grading. First, there must be some agreement on ages at each career level. Second, there must be differences between ages in different career levels. In an organization highly differentiated by age (highly age graded), everyone would agree that the ages associated with each career level are discrete. For instance, members might believe that only persons between 20 and 25 hold entry level management positions and only persons between 30 and 53 hold middle level management positions. In an organization undifferentiated by age, on the other hand, the expected age of managers would be unrelated to career level.

One of the problems in studying agreement is deciding how much agreement there must be among a group of people before judgments are said to be "shared." In past studies, agreement on age group boundaries was assessed either by inferring consensus--complete agreement on age judgments (Eisenstadt 1956), or by using modal responses--some large fraction of similar age judgments (Neugarten and Petersen 1957).

Kluckhohn suggests that "the best conceptual model of the culture can only state correctly the central tendencies of ranges of variation" (1951, p. 76).

In this study, agreement is assessed by examining the central tendencies and ranges of variation of age judgments for each career level, and also by using those distributions to identify age groups. Both consensual and modal age groups are used. A consensual age group is the range of all age judgments on a single career level, and a modal age group is the range of characteristic responses, where characteristic responses are determined by the patterns observed in the distribution. In Figure 1, the consensual age group defined by judgments of Level 1 is 25 to 65 and the modal age group is 36 to 44.

--- FIGURE 1 ABOUT HERE ---

Clearly, consensual age groups represent a higher level of agreement than modal age groups, and the extent to which modal age groups represent shared beliefs is ambiguous. However, in the study of careers, it is unlikely that consensual age groups will ever be meaningfully different. The reason is that although age may be used as an implicit criterion permitting entry into a career level, it is rarely used as a criterion requiring exit except at retirement. Thus, it makes little sense to study consensual age groups exclusively: both consensual and modal age groups give important information about the patterning of employees' age judgments of the managerial timetable.

Once agreement is assessed and age groups are defined, age differences, the second criterion for establishing age grading, can be examined. Age differences are assessed by comparing individual age judgments and age groups across career levels. This establishes 1) whether individual employees see age

differences between career levels, and 2) whether age groups perceived by employees distinguish between the ages of different career levels.

## V. AGE GRADING OF THE MANAGERIAL CAREER

Proposition 1 was examined first by studying the distribution of age judgments for each career level, and then by describing consensual and modal age groups. Analysis confirms that managerial careers are differentiated by the shared age judgments of members. Thus, Proposition 1 is accepted, and, at a minimum level, managerial careers at BPC are age graded.

### The Distribution of Age Judgments

The extent to which managers agree on age judgments was examined. The mean, standard deviation, and range of responses for all eight career levels are shown in Table 1. Two interesting and potentially important aspects of the questionnaire responses should be noted. A majority of managers specified ages only to the nearest multiple of five years. In other words, the visual age scale used in the questionnaire was treated as an eleven step ordinal item. This suggests that most managers at BPC do not distinguish between ages less than about five years apart. Alternative explanations, such as misinterpretation of the questionnaire instructions, are possible but less plausible. Second, when one takes the distinction between ordinal and interval treatments into account, the distributions are unimodal. This suggests that people agree that a single age represents what is typical for each level. An alternate finding might have been a bimodal or multimodal distribution, indicating that some people believe one age is typical while others believe a different age is typical.

--- TABLE 1 ABOUT HERE ---

As an example of age judgment responses, Figure 2 shows the distributions for Level 1. Clearly, agreement among subjects on the age of managers in this level is not high. Typical age judgments range from 27 to 57, youngest age judgments range from 20 to 52, and oldest age judgments range from 30 to 68.

--- FIGURE 2 ABOUT HERE ---

Considerable variation in age judgments is observed for all eight career levels shown in Table 1.. However, the mean judgments increase monotonically with career level. To confirm whether these differences are significant, a multivariate repeated measures test (Morrison 1976, pp. 141-150) was used. The null hypothesis is that mean age judgments are equal across all eight career levels.

Table 2 shows the results of these tests for the typical age, youngest age, and oldest age judgments. For all three judgments, the null hypothesis is rejected. Given that differences among each set are observed, simultaneous confidence intervals were computed for the differences between each level to determine which career levels differ.[7] The results show that, with the exception of the oldest age for Levels 3 and 4, subjects see managers in <u>all</u> adjacent career levels as significantly different in age. Thus, although there is considerable variation in age judgments, individual employees do use age to differentiate between career levels.

--- TABLE 2 ABOUT HERE ---

Consensual Age Groups

The consensual age group of a career level is bounded by the youngest and oldest age judgments specified by any subject for managers at that level. There is complete agreement, or consensus, that no manager at that level is younger than the lower boundary of the consensual age group, or older than the upper boundary. For Level 5, the youngest age judgment of the lower age is 30 and the oldest age judgment of the upper age is 69. Thus, the consensual age group is 30-69. All subjects agree with the following statement: No Level 5 manager is younger than 30 or older than 69. Figure 3 shows the consensual age groups defined by each of the eight career levels.

--- FIGURE 3 ABOUT HERE ---

As expected, comparison across career levels shows that all consensual age groups overlap. However, the boundaries of these age groups indicate ways in which managerial careers are age differentiated. There is complete agreement, for example, that the youngest manager in the company is no younger than 20 and the oldest manager is at least 74.[8] In addition, subjects believe that the youngest manager in each career level is the same age as or younger than the youngest manager in subsequent levels.

These findings suggest several consensually-shared assumptions about managerial careers. The 54-year age range defined by these age groups includes almost the entire age scale. This large range suggests there is no consensus that age restricts being a manager. However, there is consensus that age may restrict becoming a manager. For example, because all subjects agree that no Level 3 manager is younger than 25, it might be difficult for a person to become a Level 3 manager before that age. In addition, subjects appear to believe that age is a boundary requiring exit from the organization. The

President and CEO are seen as the only exceptions to the rule that all employees retire between 68 and 70. Thus, although consensual age groups are not discrete, they suggest that age may restrict movement within, and require exit from, the managerial career.

Modal Age Groups

Consensual age groups identify the judgments on which all people agree, but do not identify what "most people" think. In other words, if all employees were stopped at the coffee pot and asked "How old is the typical Supervisor?" what would the majority be likely to say? Modal age groups were defined using characteristic judgment patterns for the typical age.

Modal age groups were selected in the following manner. As previously discussed, most subjects specified ages at five-year intervals. These peaks were considered significant when the responses on a particular age exceeded ten percent of the sample (N=48). For each level, all such significant ages occur at adjacent five-year intervals, and with few exceptions, the fraction of responses between these adjacent ages is higher than the fraction of responses between any other five-year age intervals. Thus, the distributions for all levels are unimodal, both for the ages that are multiples of five and for those that are not. This important result allows for the specification of a "typical" age for each level. In addition, the range defined by these ages includes between 66 and 80 percent of all responses. Modal age groups thus capture both the characteristic responses of subjects as well as the majority opinion.[9]

Figure 4 shows the modal age groups defined by all eight career levels. These age groups represent shared, though not consensual, beliefs about the typical ages of managers. For example, subjects believe it is atypical for a

Level 1 manager to be 50 years old. Similarly, they believe a Level 7 manager is not usually 45 years old.

--- FIGURE 4 ABOUT HERE ---

Although some modal age groups overlap, they do distinguish between career levels. Each age group defines only one career level, except for the third which defines three. Why subjects do not distinguish between Levels 3, 4, and 5 is an interesting question. One interpretation is that subjects see career movement ending between the ages of 45 and 55. Because middle management is the upper limit of most careers, these levels are seen as similar in age. If this interpretation is correct, it suggests that employees believe age 55 is the plateau for all managerial careers. Whatever position an employee has attained by 55 is likely where he or she will remain, even though he or she will probably work for another fifteen years.

The importance of age 55 is supported by two other characteristics of these age groups. Because this age is also seen as the upper age limit of Level 6 managers, only the highest management positions in the company, the Senior Vice-Presidents, CEO, and President, are believed typically older than 55. This supports the interpretation that most career movement occurs before this age. In addition, age 55 serves as a boundary between age groups that are discrete. Assuming that age has most social significance when it defines discrete events, age 55 is important for understanding subjects' perceptions of managerial careers in this company.

The nonoverlapping segments of age groups may signal subjects' perceptions of other critical ages in managerial careers. Figure 4 shows that only Level 1 managers are perceived as 35-40 years old, only Level 7 managers are perceived as 55-60 years old, and only Level 8 managers are perceived as 60-63 years

old. The boundaries of these age group segments suggest that, in addition to age 55, ages 40 and 60 are important in the managerial career. Given that most subjects will not become Level 7 or Level 8 managers, these boundaries suggest that subjects believe all upward career movement occurs between the ages of 40 and 55. This means that in an organization where most employees remain for their entire work lives, around 45 years, managers see themselves as upwardly mobile during only fifteen years. Two-thirds of their lives will be spent in jobs with no change in level. Although longitudinal data are not available from this company, these perceptions are consistent with Rosenbaum's (1979a) study of a large corporation, in which the period of high career mobility was limited to a rather short time in life.

Discussion

Proposition 1 states that managerial careers are age graded if career levels are differentiated by the shared age judgments of members. The two criteria for age grading (See Section III) are agreement on ages at each career level and differences between ages in different career levels. The results confirm that managerial careers are age graded. The analysis of age agreement on career levels shows that although there is wide variation in subjects' judgments of each career level, there is agreement that managers increase in age for each increase in career level, and consensus that age distinguishes between the youngest and oldest managers across levels. An analysis of modal age groups shows that age divides the managerial career into four discrete age categories. Typical managers in Level 1, Levels 3-5, Level 7, and Level 8 are seen as being different in age from one another. Age differences across career levels for both individual age judgments and organizationally-perceived age groups confirm that managerial careers within the Bennix Power Company are age graded.

## VI. THE ACCURACY OF AGE JUDGMENTS

Proposition 2 was examined first by describing the actual age distribution of each career level in the Bennix Power Company and then by comparing these distributions with employees' age judgments. Although subjects accurately judge the typical age of managers, subjects overestimate the youngest age and underestimate the oldest age.

### The Actual Age Distribution

Table 3 shows the actual age distribution of all career levels.[10] Although the ages of managers in Levels 1 through 3 are somewhat normally distributed, the age distributions of Levels 4 through 8 are fairly flat. The youngest manager in the company is 25 and the oldest manager is 66. The age range of managers is large in each of the first five levels, but decreases dramatically in Levels 6 through 8. This reflects the increasing age of the youngest manager in higher career levels. Managers in the upper levels of the organization are more similar in age than those in the lower levels. If a manager reaches the top of the organization, he or she is likely to work with age peers.

--- TABLE 3 ABOUT HERE ---

Opportunity for advancement appears to decrease as one moves up the career ladder. Although longitudinal data are necessary to establish actual patterns of mobility with age (e.g. Rosenbaum 1979a, 1979b), the actual number of managers in each level gives an indication of potential mobility, particularly in an established, stable organization. Levels 3 and 5 appear to be the two major career plateaus at BPC. The number of managers decreases dramatically

from 96 to 24 between Levels 3 and 4 and again from 31 to 10 between Levels 5 and 6. This suggests that many managers can expect to reach Level 3, but only a select group will reach Level 4. Once in Level 4, managers have a reasonable chance of promotion to Level 5. Reaching Levels 6 through 8 is unlikely.

A Comparison of Age Judgments and the Actual Age Distribution

Comparing these distributions with subjects' age judgments, we find that some aspects of age judgments are accurate and others are not. Figure 5 shows the actual age distribution compared with the average judgment for each career level. One line compares the actual youngest age with the average youngest age judgment; one line compares the actual oldest age with the average oldest age judgment. Points that fall on the identity line suggest that the average age judgment is accurate.

--- FIGURE 5 ABOUT HERE ---

The figure suggests several trends. First, on average, subject's judgments of the typical age are fairly accurate. Second, on average, subjects consistently overestimate the youngest age and underestimate the oldest age of each level, and third, the accuracy of subjects' judgments increases with each career level.

Because this figure only examines average judgments, actual accuracy may be obscured. If judgments are accurate, the average age judgment should equal the actual age. However, variation in judgments is expected; therefore, a second measure of accuracy is whether the actual age is within the range of most age judgments. If the actual age is within one standard deviation of the average judgment, then a large proportion of subjects is making reasonably accurate age judgments of that level. This procedure has no statistical

significance because although age judgments are somewhat normally distributed, the actual ages are not. However, the results give a general idea of those career levels on which most subjects are reasonably accurate. All three judgments were compared with the actual age distributions. Judgments that meet this criterion are indicated in Figure 5.

The results of these comparisons confirm the visual examination. All judgments of the typical age are accurate, except for those of Level 1. Although people underestimate the average age of managers in Level 1, a large proportion of respondents have a good picture of the "typical" manager in other levels. In contrast, judgments of the youngest and oldest managers are not so accurate. All judgments of the youngest age are inaccurate, except for those of Levels 7 and 8. For the oldest age, the only accurate judgments are those of Levels 6 and 8.

Both age judgments and the actual age distribution suggest that career movement ends between Levels 3 and 5. Earlier, it was inferred that subjects believe career movement ends between these three levels: modal age groups indicate that managers between Levels 3 and 5 are seen as similar in age. The large decrease in the actual number of managers between Levels 3 and 4 and then between Levels 5 and 6 suggests that these modal age judgments are an accurate reflection of reality--in terms of mobility, but not necessarily in terms of age. The observation of accuracy in perceiving underlying age patterns but not actual ages is also noted for the lower age boundary for each career level. Earlier, it was shown that employees believe the age of the youngest manager increases with career level. With the exception of Level 2 to Level 3, this perception is accurate, even though employees' age judgments are not.

Discussion

Proposition 2 states that judgments of the typical age, youngest age, and oldest age are similar to the actual ages of the employee population for each career level. The results indicate that the accuracy of some age judgments is higher than others. To a certain extent, age judgments appear based on the actual age distribution within the organization. Wide variation in judgments mirrors actual variation in ages. Typical age judgments are fairly accurate; however, the distinction between judgments and reality increases for the age boundaries.

It appears that many employees do not realize how early promotions are occurring, and do not recognize the numbers of employees who remain in one position until retirement. This last finding is particularly curious since it is no secret that most employees do not leave the company until they retire. The consistent underestimation of the age of the oldest manager may reflect an American fantasy that promotion opportunity continues forever (Rosenbaum in press). Overlooking the existence of long plateaued, older employees may be the result of holding on to this hope.

One possible explanation for the relative accuracy of the typical age compared with the youngest and oldest age judgment is that people make judgments based on what they see, and they see the "average" manager more often than the youngest manager or the oldest manager. However, this does not account for the increasing accuracy of the youngest and oldest age judgments for the upper career levels. The actual age distributions of the upper career levels are almost flat, suggesting that there is no "typical" age for these higher-level managers. People may make better age judgments of these managers because they are more visible and there are fewer of them.

Even though typical age judgments are in reasonable agreement with actual ages for each level individually, when considered as a career timetable, there

is remarkable disagreement. Compared with actual ages, typical age judgments systematically exaggerate the differences between the first five levels. In typical age judgments, Levels 1 and 5 are on average ten years apart. In actual age, Levels 1 and 5 are on average only two years apart. Managers appear to believe that they are on age-based career ladder. In fact, it is unclear there is much of a ladder at all.

## VII. SUMMARY AND IMPLICATIONS

The first question addressed in this research was: "Are work organizations age graded?" Using a questionnaire, judgments of the actual age distribution in a single company were obtained. The results show that employees do use age to differentiate the managerial career; thus, the managerial career is age graded.

Specifically, agreement on the actual ages of managers in each career level is low--the range and standard deviation of subjects' age judgments are large. In addition, all age groups defined by consensual agreement overlap. However, all average age judgments increase monotonically with career level, and perceived age differences between career levels are significant. Moreover, there are two things on which everyone agrees. There is consensus among subjects that the age of the youngest manager increases with career level. And, there is consensus that, except for the President and Chief Executive Officer, no manager is over 70 years old. When characteristic judgment patterns for each career level are used to define modal age groups, employees agree that age divides the managerial career into four different age groups. Managers in Level 1, managers in Levels 3-5, managers in Level 7, and managers in Level 8 are seen as belonging to discrete age groups.

Consistency in patterns of age judgments and variation in actual age judgments is a curious combination. If age grading is a shared phenomenon, why

is there so much variation? The answer to the second question "Do members' age judgments accurately reflect the actual age distribution of their organization?" suggests that the wide variation observed in age judgments is an accurate reflection of actual variation in managers' ages. However, although judgments of the typical age are fairly accurate, there are numerous discrepancies between employees' perceptions and the actual age distribution. Subjects consistently overestimate the age of the youngest manager and underestimate the age of the oldest manager for each level. In addition, members increase the age differences between career levels thus creating more of a career ladder than really exists. The systematic exaggeration of differences suggests that subjects believe in an age-based career ladder despite the evidence.

What are the implications of these findings? First, this study shows that age grading does occur in work organizations. Employees use age as a map on which normal career progress is charted. The normative model suggests that deviance from what is seen as normal results in behavioral sanctions. Indeed, there are negative consequences in this organization to being behind time in relation to such social expectations (Lawrence 1983). Managers who fall behind modal patterns of career progress have more negative attitudes toward work than managers who are on or ahead of time.[11] Although the direction of causality cannot be inferred with certainty from cross-sectional data, the results suggest that age norms do influence employee attitudes. The fact that employees' picture of an age-based managerial career differs from reality underscores the importance of maintaining a social perspective.

Second, the fact that age judgments differ from the actual age distribution suggests that it is indeed important to examine both normative and structural explanations of age effects in social organizations. Stewman and Konda (1983), for example, state that individuals' promotion probabilities are

conditional on managerial preferences and they then assume that such preferences are stable. The results presented here suggest that managerial preferences may indeed be stable in the short run, but for a social rather than individual reason. Managers' promotion decisions may be guided by shared perceptions of whether subordinates are ahead of, on, or behind schedule on the age-based organizational timetable. In the long run, however, as demographic changes take their inevitable toll on age perceptions, managerial preferences will not remain stable. This ultimately affects all explanations of promotion patterns within organizations.

As a final note, this research suggests that the social effects of age on behavior result from normative discrepancies, deviance from socially shared expectations of age, and structural discrepancies, deviance from actual age distributions. A third possibility is that people respond to individual discrepancies, or deviance from their own perceptions of the age distribution (Lawrence 1984a). Understanding the separate effects of and joint interaction between these three explanations of age effects is crucial for elaborating how people create, recreate, and maintain continuity at work by using age to index their expectations.

The specific results of this study may not be generalizable to other organizations and the implications are limited by the cross-sectional data. However, if age grading occurs and differs in other organizations, negative age-assumed outcomes, such as "career plateaus" and "technological obsolescence," may be organizationally-specific manifestations of age as a social phenomenon. A 35 year-old middle manager may be "plateaued" in one company and "fast track" in another. To the extent that age distributions within organizations and work groups can be managed, they may provide a powerful tool for mitigating the negative impact of these outcomes.

## FOOTNOTES

1) Acknowledgments. This research was supported by grants from the National Institute on Aging #1 R01 AG04615-01, the Office of Naval Research Contract N00014-80-C0905; NR 170-911, and the Administration on Aging #90 ATO 0 33/11.

2) Age judgments are individual perceptions of the age distribution, or ages, of members of some specified age group.

3) Radcliffe-Brown is generally credited with defining the term age grade. According to this definition (1929, p. 21), an age grade is: "the recognized division of the life of an individual as he passes from infancy to old age. Thus, each person passes successively into one grade after another, and, if he live (sic) long enough, through the whole series--infant, boy, youth, young married man, elder, or whatever it may be." The term was developed for use in tribal societies where age groupings appeared fairly simple. However, in modern times, people belong to many significant social groups making it less reasonable to use the term "age grade" only for discrete age categories. Hence, age grading is defined here as the differentiation of a social group by the shared age assumptions and expectations of its members.

4) We are all aware of instances where the informal status system does not correspond to formally ascribed status. An unusually competent young manager who is ahead of schedule in a lower level position may have a higher informal status than a plateaued manager at a higher level, even

though the young person's formal status is lower. However, it is interesting to note that in this case informal status is dependent on the social construction of formal status. A manager has higher or lower informal status as a result of being recognized as ahead of or behind what is accepted as normal progress. This means that "normal progress" must first be socially defined. The shared understanding of normal progress is what members use to identify deviants, who are then rewarded or sanctioned by the system. I expect that members will create an age graded career timetable around the formal status system to define normal progress.

5) It should be noted that studying the age grading of managerial careers does not mean studying the entire system of age judgments held by employees in the organization. Age grading in a work organization includes age judgments of the organization, as well as other age judgments brought in by employees from their families, religious or ethnic groups, or communities. These general age judgments are not distinctive because they exist in other social groups. Nonetheless, they operate within the work environment and thus belong to the organization's age grade system.

6) The visual age scale allows people to be flexible in answering questions. Pre-testing indicated that people will come up with a numerical age if forced to do so; however, they find it easier to respond to a visual picture of the entire age range. Whether these two methods, requesting specific numerical ages and providing the visual age scale, would have elicited different responses is unknown. Additional study on the reliability and validity of different methods of obtaining age judgments is necessary.

7) The average differences are negative because they were calculated by subtracting age judgments for Level N+1 from age judgments of Level N. The differences between levels are significant when the simultaneous confidence interval does not include 0.

8) The possible response range is 18 to 74, thus 20 is a lower limit but 74 is not necessarily the upper limit.

9) In Figure 2 for the typical age judgment, for example, the peaks are ages 35, 40, and 45. Each of these peaks exceeds ten percent of the total sample (13%, 17%, 15%). The ages between 35 and 40 account for 15% of the total sample and the ages between 40 and 45 account for 9%. The next closest candidate for inclusion as a modal age group boundary is age 30. However, responses on this age and the ages between 30 and 35 represent a large drop in frequency. The fraction of responses on age 30 is 7%, and the fraction of responses between 30 and 35 is also 7%. Thus, 35 and 45 were selected as the modal age group boundaries for this career level. Seventy percent of all subjects believe the typical age of Level 1 managers is between 35 and 45.

Using characteristic response patterns to define modal age groups is different from using the mean and standard deviation. Although in this case the two define similar ranges, characteristic response patterns were used because they capture the consistent manner in which these subjects made typical age judgments.

10) Frequency distributions for each level are available from the author.

11) There is evidence that this is also true for performance (Lawrence, work in progress). This supports other work in societal contexts suggesting the negative impact of being off schedule with age expectations (Neugarten, Moore, & Lowe 1968; Neugarten & Datan 1972).

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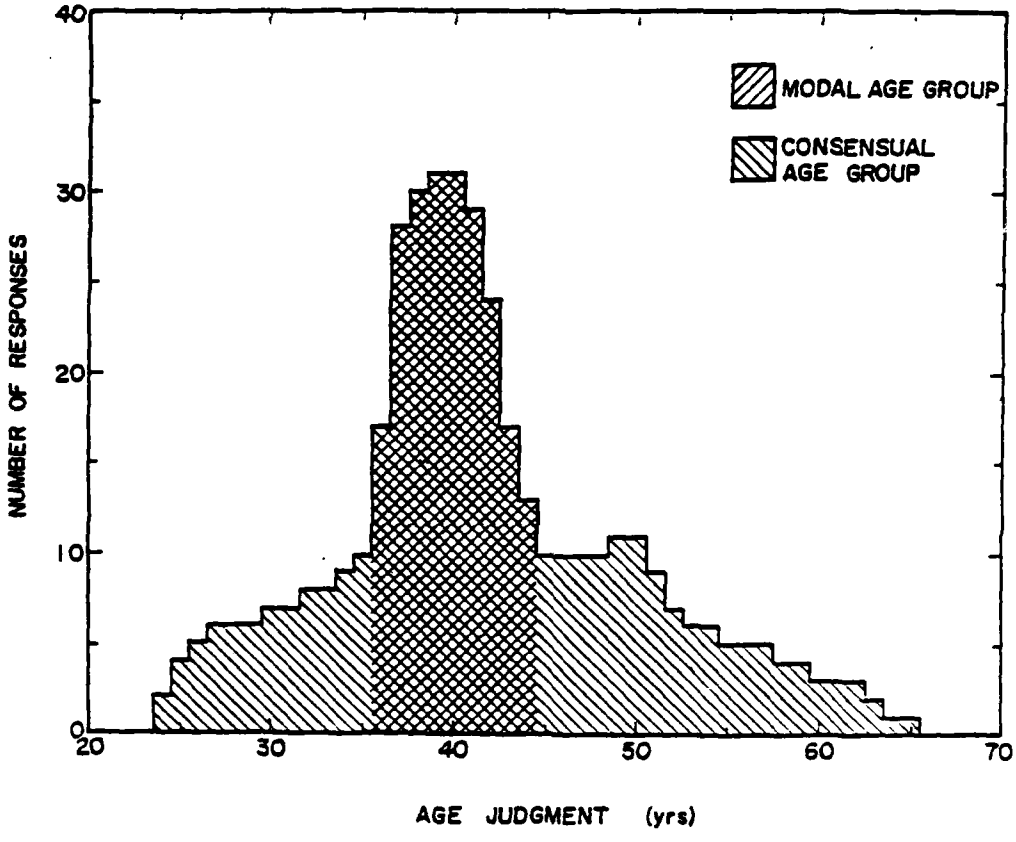
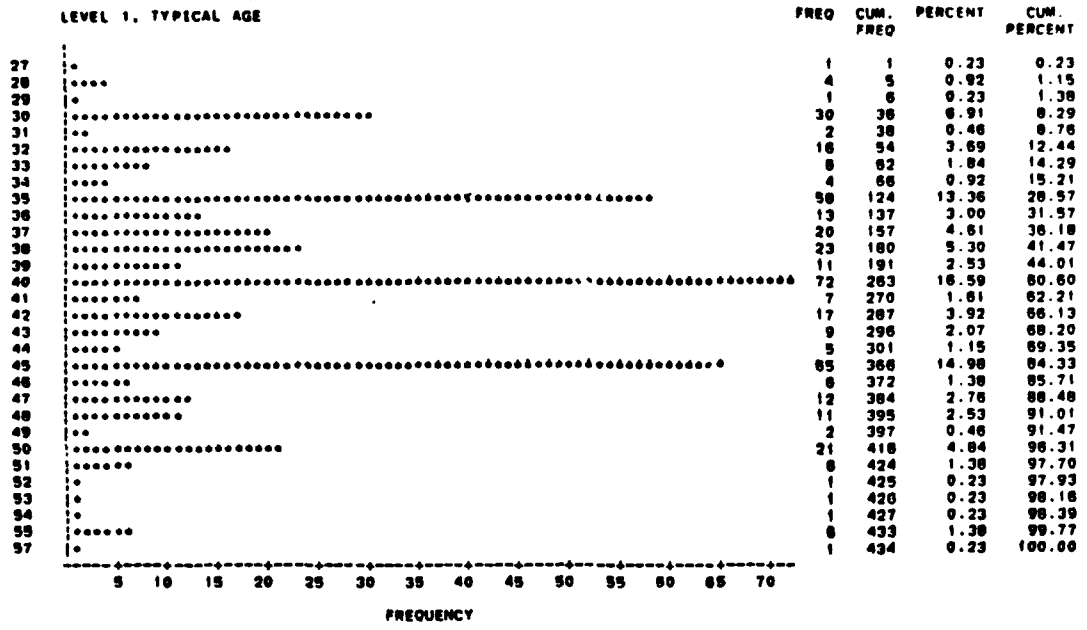



Fig. 1.--Consensual and Modal Age Groups Defined by Age Judgments of One Career Level



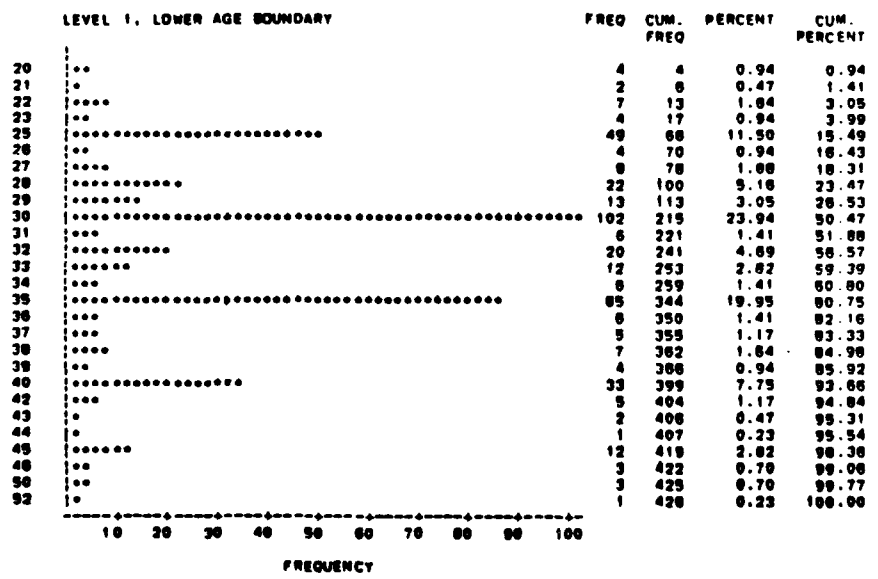




Fig. 2.--Distribution of Age Judgments for Level 1

| LEVEL 1, UPPER AGE BOUNDARY | FREQ | CUM. FREQ | PERCENT | CUM. PERCENT |
|---|---|---|---|---|
| 30 | 1 | 1 | 0.23 | 0.23 |
| 31 | 1 | 2 | 0.23 | 0.47 |
| 32 | 2 | 4 | 0.47 | 0.94 |
| 34 | 4 | 8 | 0.94 | 1.88 |
| 35 | 19 | 27 | 3.52 | 5.40 |
| 36 | 2 | 29 | 0.47 | 5.87 |
| 37 | 5 | 30 | 1.17 | 7.04 |
| 39 | 4 | 34 | 0.94 | 7.98 |
| 40 | 42 | 76 | 9.86 | 17.84 |
| 41 | 8 | 84 | 1.88 | 19.72 |
| 42 | 10 | 94 | 2.35 | 22.07 |
| 43 | 6 | 100 | 1.41 | 23.47 |
| 44 | 8 | 108 | 1.88 | 25.35 |
| 45 | 54 | 162 | 12.68 | 38.03 |
| 46 | 4 | 166 | 0.94 | 38.97 |
| 47 | 2 | 168 | 0.47 | 39.44 |
| 48 | 6 | 174 | 1.41 | 40.85 |
| 49 | 5 | 179 | 1.17 | 42.02 |
| 50 | 66 | 245 | 15.49 | 57.51 |
| 51 | 3 | 248 | 0.70 | 58.22 |
| 52 | 10 | 258 | 2.35 | 60.56 |
| 53 | 5 | 263 | 1.17 | 61.74 |
| 54 | 4 | 267 | 0.94 | 62.68 |
| 55 | 33 | 300 | 7.75 | 70.42 |
| 56 | 2 | 302 | 0.47 | 70.89 |
| 57 | 1 | 303 | 0.23 | 71.13 |
| 58 | 3 | 306 | 0.70 | 71.83 |
| 59 | 4 | 310 | 0.94 | 72.77 |
| 60 | 31 | 341 | 7.28 | 80.05 |
| 61 | 1 | 342 | 0.23 | 80.28 |
| 62 | 10 | 352 | 2.35 | 82.63 |
| 63 | 2 | 354 | 0.47 | 83.10 |
| 64 | 6 | 360 | 1.41 | 84.51 |
| 65 | 64 | 424 | 15.02 | 99.53 |
| 67 | 1 | 425 | 0.23 | 99.77 |
| 68 | 1 | 426 | 0.23 | 100.00 |

5 10 15 20 25 30 35 40 45 50 55 60 65

Fig. 2 (cont.).--Distribution of Age Judgments for Level 1

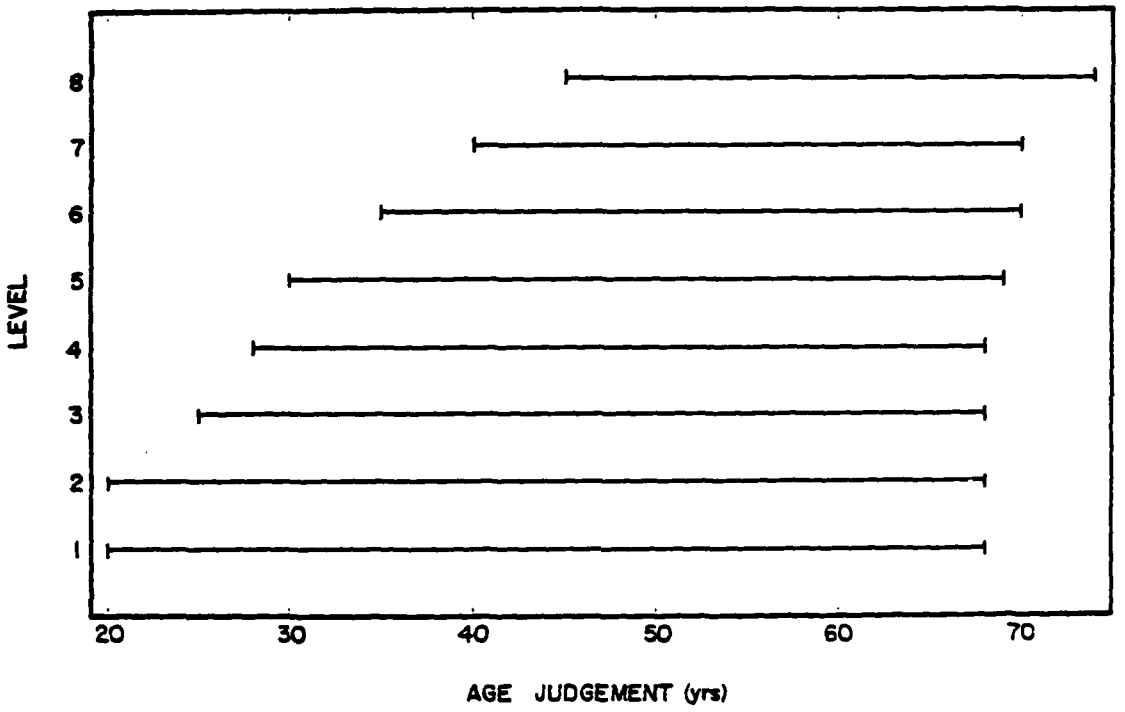



Fig. 3.--*Consensual* Age Groups. Consensual age groups are defined by 100% agreement. All subjects agree that no manager is younger or older than the age range specified for each career level.

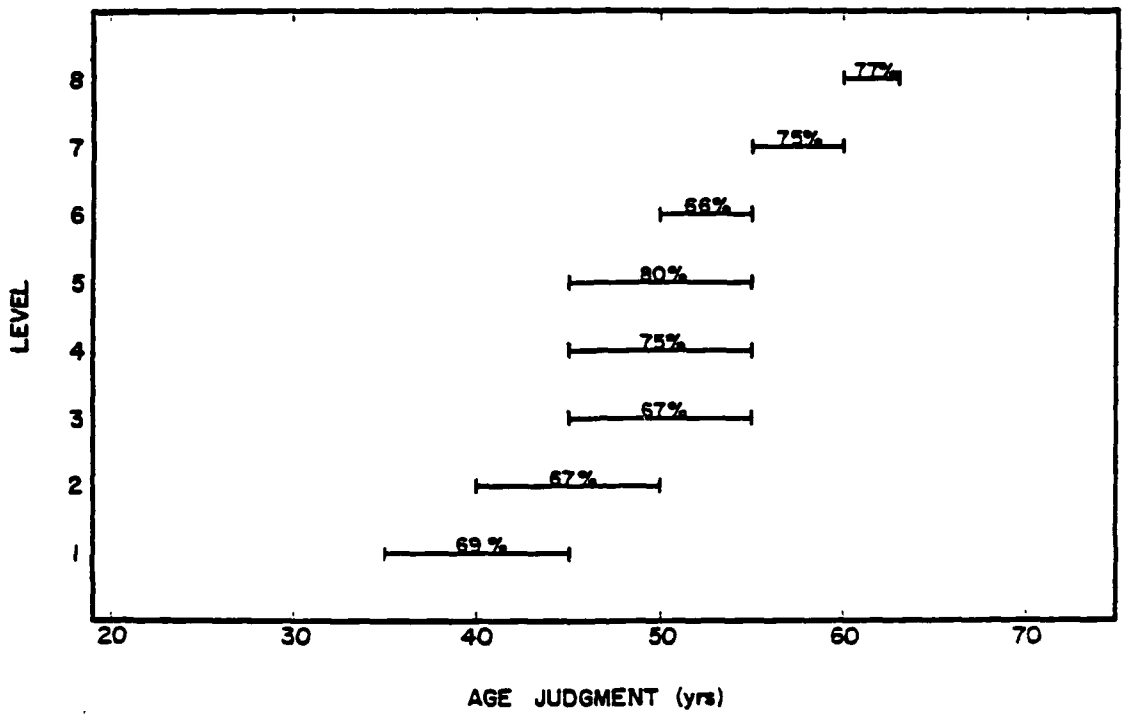



Fig. 4.--Modal Age Groups. Modal age groups are defined by characteristic response patterns. A high percentage of subjects agree that no manager is younger or older than the age range specified for each career level. The numbers above the lines indicate the fraction of total responses falling within the given age range.

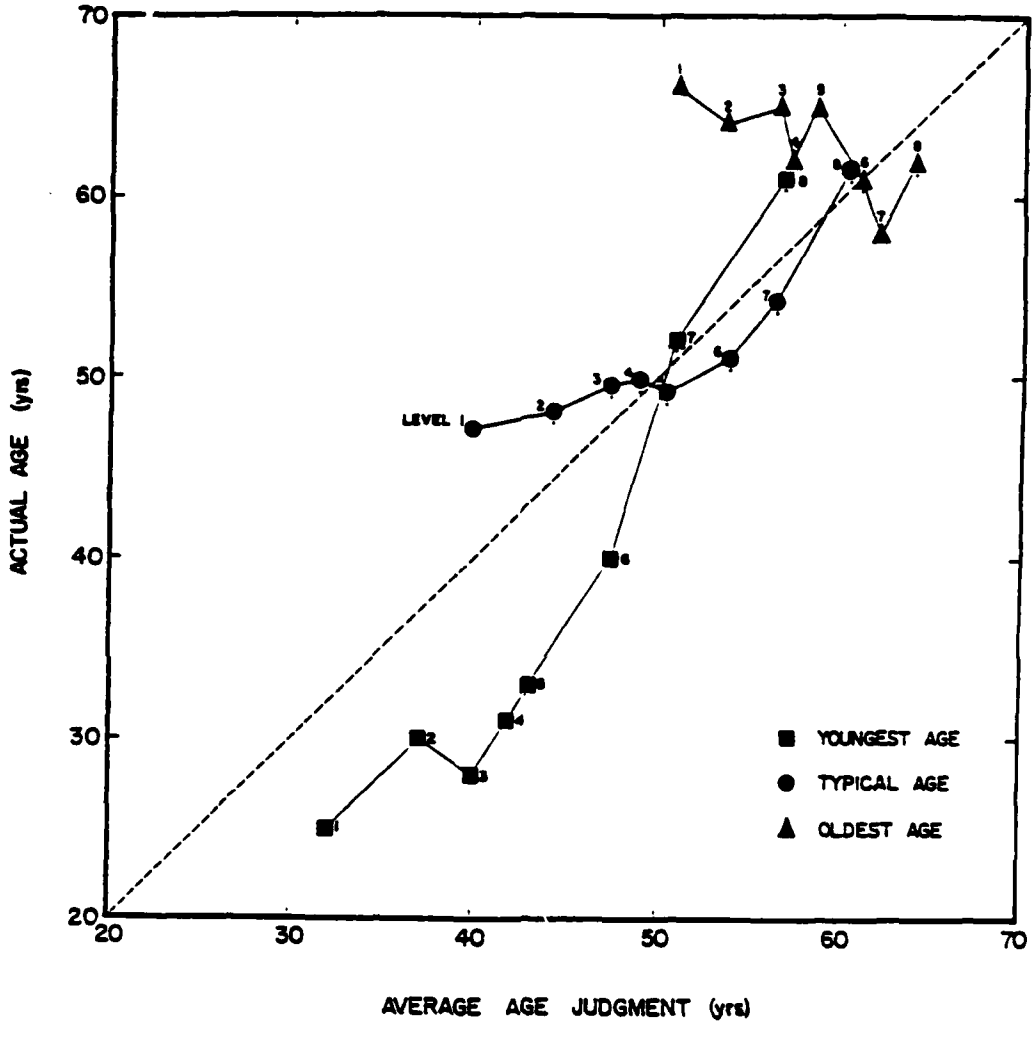



Fig. 5.--Comparison of Actual Age With Age Judgments. For those levels marked underneath by a dot (.), the actual age falls within one standard deviation of the average age judgment.

TABLE 1

AGE JUDGMENTS OF THE MANAGERIAL CAREER

| CAREER LEVEL | TYPICAL AGE | | | YOUNGEST AGE | | | OLDEST AGE | | |
|---|---|---|---|---|---|---|---|---|---|
| | $\bar{X}$ | SD | Range | $\bar{X}$ | SD | Range | $\bar{X}$ | SD | Range |
| Level 1 | 40.0 | 6.1 | 25-57 | 32.2 | 5.7 | 20-52 | 50.9 | 9.4 | 30-68 |
| Level 2 | 44.3 | 6.1 | 30-60 | 37.3 | 6.0 | 20-55 | 53.7 | 8.1 | 29-68 |
| Level 3 | 47.5 | 5.8 | 33-60 | 40.0 | 6.4 | 25-56 | 56.5 | 7.2 | 35-68 |
| Level 4 | 49.1 | 5.5 | 34-61 | 41.9 | 5.7 | 28-56 | 57.2 | 6.4 | 39-68 |
| Level 5 | 50.5 | 4.8 | 35-62 | 43.1 | 6.0 | 30-61 | 58.7 | 5.5 | 42-69 |
| Level 6 | 53.9 | 3.7 | 40-63 | 47.5 | 4.3 | 35-61 | 61.1 | 3.8 | 48-70 |
| Level 7 | 56.4 | 3.3 | 45-65 | 51.0 | 3.7 | 40-63 | 62.1 | 3.1 | 49-70 |
| Level 8 | 60.4 | 2.7 | 50-75 | 56.7 | 3.9 | 45-64 | 63.9 | 2.3 | 55-74 |

TABLE 2

REPEATED MEASURES TEST

DIFFERENCES BETWEEN JUDGMENTS OF ADJACENT CAREER LEVELS

A. TYPICAL AGE JUDGMENTS

| DIFFERENCES BETWEEN JUDGMENTS OF: | AVERAGE DIFF. | STANDARD ERROR | SIMULTANEOUS CONFIDENCE LIMITS: Lower .95 | Upper .95 | |
|---|---|---|---|---|---|
| Level 1 & Level 2 ..... | -4.302 | .246 | -5.244 | -3.360 | * |
| Level 2 & Level 3 ..... | -3.047 | .237 | -3.953 | -2.141 | * |
| Level 3 & Level 4 ..... | -1.729 | .232 | -2.616 | -0.842 | * |
| Level 4 & Level 5 ..... | -1.639 | .237 | -2.546 | -0.732 | * |
| Level 5 & Level 6 ..... | -3.579 | .227 | -4.466 | -2.692 | * |
| Level 6 & Level 7 ..... | -2.330 | .153 | -2.916 | -1.744 | * |
| Level 7 & Level 8 ..... | -3.881 | .175 | -4.552 | -3.212 | * |

F=579.98, df(7,314), p<.001
* Differences are significant, p<.05

B. YOUNGEST AGE JUDGMENTS

| DIFFERENCES BETWEEN JUDGMENTS OF: | AVERAGE DIFF. | STANDARD ERROR | SIMULTANEOUS CONFIDENCE LIMITS: Lower .95 | Upper .95 | |
|---|---|---|---|---|---|
| Level 1 & Level 2 ..... | -5.043 | .244 | -5.977 | -4.111 | * |
| Level 2 & Level 3 ..... | -3.009 | .246 | -3.950 | -2.068 | * |
| Level 3 & Level 4 ..... | -1.869 | .269 | -2.898 | -0.840 | * |
| Level 4 & Level 5 ..... | -1.548 | .265 | -2.562 | -0.534 | * |
| Level 5 & Level 6 ..... | -4.371 | .275 | -5.423 | -3.319 | * |
| Level 6 & Level 7 ..... | -3.371 | .199 | -4.131 | -2.611 | * |
| Level 7 & Level 8 ..... | -5.617 | .222 | -6.468 | -4.766 | * |

F=652.01, df(7,314), p<.001
*Differences are significant, p<.05

TABLE 2 (continued)

REPEATED MEASURES TEST

DIFFERENCES BETWEEN JUDGMENTS OF ADJACENT CAREER LEVELS

C. OLDEST AGE JUDGMENTS

| DIFFERENCES BETWEEN JUDGMENTS OF: | AVERAGE DIFF. | STANDARD ERROR | SIMULTANEOUS CONFIDENCE LIMITS: Lower .95 | Upper .95 | |
|---|---|---|---|---|---|
| Level 1 & Level 2 ..... | -2.872 | .283 | -3.954 | -1.790 | * |
| Level 2 & Level 3 ..... | -2.829 | .262 | -3.832 | -1.826 | * |
| Level 3 & Level 4 ..... | -0.832 | .254 | -1.804 | 0.140 | |
| Level 4 & Level 5 ..... | -1.555 | .241 | -2.477 | -0.633 | * |
| Level 5 & Level 6 ..... | -2.523 | .233 | -2.523 | -1.632 | * |
| Level 6 & Level 7 ..... | -2.330 | .153 | -2.916 | -1.744 | * |
| Level 7 & Level 8 ..... | -1.807 | .168 | -2.448 | -1.166 | * |

F=95.18, df(7,314), p<.001
* Differences are significant, p<.05

TABLE 3

ACTUAL AGE DISTRIBUTION OF MANAGERIAL CAREER

| CAREER LEVEL | MEDIAN | MODE | | | RANGE | N |
|---|---|---|---|---|---|---|
| Level 1: Supervisors..... | 48.0 | 47 | 47.2 | 8.9 | 25-66 | 287 |
| Level 2: Senior Supervisors..... | 49.0 | 48 | 48.1 | 8.1 | 30-64 | 139 |
| Level 3: Division Heads..... | 50.0 | 57 | 49.6 | 9.3 | 28-65 | 96 |
| Level 4: Asst. Department Heads.. | 52.5 | 57 | 49.8 | 9.4 | 31-62 | 24 |
| Level 5: Department Heads..... | 49.0 | 54 | 49.2 | 8.5 | 33-65 | 31 |
| Level 6: Vice Presidents..... | 52.0 | 53 | 51.1 | 6.1 | 40.61 | 10 |
| Level 7: Senior Vice Presidents.. | 53.5 | 52 | 54.3 | 2.9 | 52-58 | 4 |
| Level 8: President & CEO..... | 61.5 | 61 | 61.5 | 0.7 | 61-62 | 2 |
| TOTAL: | | | | | | 593 |

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