



New Wrinkles in the Theory of Age: Demography, Norms, and Performance Ratings

Author(s): Barbara S. Lawrence

Source: *The Academy of Management Journal*, Vol. 31, No. 2, (Jun., 1988), pp. 309-337

Published by: Academy of Management

Stable URL: <http://www.jstor.org/stable/256550>

Accessed: 27/05/2008 17:41

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=aom>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit organization founded in 1995 to build trusted digital archives for scholarship. We enable the scholarly community to preserve their work and the materials they rely upon, and to build a common research platform that promotes the discovery and use of these resources. For more information about JSTOR, please contact support@jstor.org.

NEW WRINKLES IN THE THEORY OF AGE: DEMOGRAPHY, NORMS, AND PERFORMANCE RATINGS

BARBARA S. LAWRENCE
University of California, Los Angeles

Age seems to play an important role in a wide range of employee behaviors. One interpretation of this role is that it depends more on people's beliefs about age than on the ages themselves. Despite the significance of this distinction for human resource planning, it has received little attention in the organizational literature. This article proposes an explanation for socially generated age effects and presents an exploratory study that used data from an electric utility.

Looking around the basement, some of the team's brand-new members would sometimes wonder what would happen to them when they turned thirty. Being young, they could make light of the questions, and say, as one did, "When a computer engineer gets old, he gets turned out to pasture or else made into dog food."

—Kidder (1981: 104)

Evaluating and comparing employee ages is an everyday pastime in organizations, insignificant in its appearance, yet significant in its results. In Kidder's (1981) account of the Data General Corporation, computer engineers observe the ages of co-workers, use their observations to assess their own career prospects, and note the absence of older engineers with discomfort. These reactions are generated not from the inherent characteristics of, but from people's responses to, chronological age. To the extent that such responses mold employee behavior, they play an important role in organizations. Indeed, people's beliefs, judgments, and notions about age appear involved in a wide range of employment issues, including hiring decisions, promotion opportunities, and employee performance (Dalton & Thompson, 1971; Kanter, 1977; Rosen & Jerdee, 1976a, 1976b, 1977; Sofer, 1970). Yet despite the significance of these employment issues, the organizational literature has given little attention to such age effects.

This article proposes that socially generated age effects result from age norms that evolve, in part, from actual age distributions within organizations. Age norms are defined here as widely shared judgments of the standard or

I would like to thank Jim Rosenbaum, Bill McKelvey, Connie Gersick, Dennis Hogan, Gordon Walker, and Lynne Zucker for their helpful comments. Thanks are also due to Richard Rumelt for the off-hand remark that led to the title of this article and to the reviewers for their careful comments on the manuscript. I gratefully acknowledge those at the company studied whose participation made this work possible. This research was supported by a grant (#1 R01 AG04615) to the author from the National Institute on Aging.

typical ages of individuals holding a role or status.¹ Despite widespread belief that age distributions, age norms, and behavior are related (Riley, Johnson, & Foner, 1972), the relationships are not well understood. Previous research has provided some support for the existence of age norms in organizations (Martin & Strauss, 1956; Sofer, 1970), but the relationship between age norms and behavior remains essentially unknown (Abeles, Steel, & Wise, 1980; Edler, 1975; Marini, 1984). More extensive evidence exists for the relationship between age distributions and behavior (Elder & Rockwell, 1976; Hogan, 1981), but unfortunately, studies of age distributions have not measured age norms. And, although the literature provides theoretical support for a relationship between age distributions and age norms (Mannheim, 1928/1952; Simmel, 1950), to my knowledge this relationship has never been evaluated. The exploratory study of the socially generated effects of age presented here thus builds on earlier work by offering a more precise statement of the relationships between age distributions, age norms, and employee behavior.

THEORETICAL BACKGROUND

Normative and Demographic Approaches

There is a long tradition of investigation of the effects of age in the sociological and anthropological literatures (Atchley, 1975; Cain, 1964; Eisenstadt, 1956; Elder, 1975; Riley, 1987; Riley et al., 1972). Linton (1940, 1942) and Parsons (1942) proposed the following explanation for why such effects take place. Chronological age is one of the few universal human experiences and as a result provides a basic structural link between individuals and social systems. People use age to classify the members of a social system into categories and to match them with roles and statuses. The matching process between age categories and roles and statuses produces widely shared beliefs about the standard or typical ages of members holding each social position. Linton suggested that the shared beliefs resulting from that process are age norms that exert considerable influence on behavior. Thus, age norms produce age effects.

Studies of such age effects have typically used one of two approaches. The *normative* approach measures the relationship between age norms and behavior. In contrast, the *demographic* approach uses age distributions as a proxy for age norms. As a result, the second approach examines the relationship between age distributions and behavior rather than that between age norms and behavior. Nevertheless, both approaches divide the human life span into groups by age. In addition, both suggest that age-group membership influences behavior: people apply positive and negative social pressures on those who deviate from behaviors considered typical for an age

¹ Although this approach to defining age norms differs from many in that it does not include expectations, it is consistent with approaches that define norms as "frames of reference" or standardized ways of perceiving the world (Newcomb, Turner, & Converse, 1965: 229; Sherif, 1936).

group. In organizations, such social pressures frequently evolve around typical ages within careers that define success and identify failures. For instance, orchestra members believe their chances for moving into top-ranked orchestras decrease after they reach their early 30s (Faulkner, 1974).

The major distinction between the normative and demographic approaches lies in their measures of age-group membership. The normative approach defines age groups, also known as age grades (Radcliffe-Brown, 1929: 21), by members' shared age judgments or age estimates of others within their social system. Several studies have supported the existence of such normative age groups within organizations. Sofer's (1970) examination of two British firms uncovered shared beliefs among mid-career managers about the typical ages for career achievement. Similarly, Martin and Strauss (1956) discussed managers' shared judgments of age-related career timetables, and Kanter (1977) observed shared age-related norms that employees use in defining fast-track and plateaued workers. In a study within an occupation, Faulkner suggested that American and Canadian hockey players exhibited a clear awareness of the "short and fateful" (1974: 142) age-related testing period for major league success.

In contrast, the demographic approach defines age groups, also known as age cohorts or age strata (Riley et al., 1972), by actual age distributions. Those who take such an approach examine an actual age distribution for some role or status and use the central tendency of that distribution to define age groups. Several studies imply a relationship between such demographic age groups and socially generated age effects. Rosenbaum's (1984) longitudinal study of mobility within a large corporation showed that employees who get behind in age-based career patterns are less likely to receive future promotions. Rosenbaum (1984: 94) suggested that the high degree of ambition, anxiety, and achievement motivation evidenced by many young employees may be explained, not by their individual personalities (Maccoby, 1977) or by the characteristics of their jobs (Whyte, 1956), but by their response to the consequences of getting behind schedule. Hogan (1981) identified the typical ages for the education, first jobs, and marriages of a large sample of American men and found that men who deviated in any direction from the typical ordering of those events experienced lower total earnings and higher rates of marital disruption. Hogan speculated that age norms for the ordering of the three roles, represented in his study by demographically typical ages, produced the study's results.

Although both the normative and demographic approaches have contributed to our understanding of socially generated age effects, each has limitations. First, although a number of researchers have drawn inferences about the effects of age norms on organizational careers (cf. Faulkner, 1974; Kanter, 1977; Martin & Strauss, 1956; Sofer, 1970), they have not provided a systematic examination of normative age groups. Thus, many questions remain unanswered. For instance, what are the age boundaries of normative age groups and where do those boundaries come from? How are normative age groups matched with roles and statuses within careers? If an individual

deviates from the normative age group for a role or status, then how does that deviation influence the behavior of other individuals toward him or her?

Second, although demographic measures simplify studies of age effects, the rationale underlying the approach that uses such measures is that demographic age groups represent age norms. Investigators have assumed a one-to-one correspondence between the central tendencies of an age distribution and the age norms created by employees' shared age judgments. The plausibility of that assumption depends on the accuracy of employees' judgments: when age judgments are accurate, normative and demographic age groups are identical. However, research has indicated that employees frequently misperceive organizational reality (Lawrence, 1984; Rosenbaum, 1988).

The result of this potential disparity is that demographic research may not properly account for socially generated age effects. Consider, for instance, an organization in which age distributions favor promotions for young managers. For each career level, the age distribution defines a demographic age group that identifies managers as ahead of schedule, on schedule, and behind schedule in their organizational careers. If managers perceive these demographic age groups accurately, the age norms that develop for a managerial career may encourage aspiring young managers to respond with high work involvement because they accurately perceive favorable opportunities for promotion. However, when managers perceive demographic age groups inaccurately, age effects such as work involvement may bear little relationship to the actual opportunity structure. For instance, if, despite the organizational reality, managers believe that promotions favor middle-aged managers, the norms that develop might produce the M.B.A. syndrome—young employees frustrated by the perceived slowness of promotion possibilities. In such a situation, demographic research could not easily explain the observed effects of age.

Several researchers have pointed out the limitations of the two approaches. Hogan (1981), for one, suggested that demographic age transitions for roles and statuses are not the entire picture. Age norms for transitions are important explanatory variables, but little is known about such norms. He quotes from Elder (1975): "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" (Hogan, 1981: 13).

Thus, the connections between demographic age patterns, age norms, and behavior are still largely unexplored. Since results from both the normative and demographic approaches have suggested that those connections are significant for human resource issues, an organizational explanation for the effects of age merits further attention.

A Proposed Explanation for Socially Generated Age Effects

The following explanation is proposed: age distributions drive the development of age norms, and age norms produce age effects. The rationale for those relationships begins with the concept of social norms. Social norms

are statements by members of a social system on standards for behavior (Newcomb et al., 1965: 229; Sherif, 1936). Age-specific social norms are age norms. Members agree on the age boundaries for typical incumbents of a role or status and perceive any individual whose age violates those boundaries as deviant. Thus, age norms are widely shared judgments of the standard or typical ages of individuals holding each role or status. Homans (1950) suggested that norms evolve because people in groups develop behavioral patterns, observe them, and then agree, either explicitly or implicitly, that the patterns represent behavioral standards.

Scholars have maintained that all social systems develop age-related behavioral standards (Linton, 1936: 116–118; Murdock, 1945: 124), and the limited existing empirical evidence supports that view (Eisenstadt, 1956; Neugarten & Datan, 1973; Neugarten, Moore, & Lowe, 1965; Neugarten & Petersen, 1957; Passuth, Maines, & Neugarten, 1984). If so, it seems likely that employees observe age distributions, develop shared judgments of those distributions, and see the behavioral patterns that evolve around age as standards of behavior. Commonplace organizational gossip such as “isn’t he a bit young for that job?” and “I never thought they would hire someone my age!” provide examples of how employees apply such standards in their evaluations of roles and statuses.

Explanations for why such patterns acquire meaning as behavioral standards focus on the development of normative age groups and the processes by which people distinguish “us” from “them.” Work by Mannheim (1928/1952) and Ryder (1965) has suggested that normative age groups develop because individuals of similar age share comparable experiences and therefore develop like attitudes and beliefs. Within an occupational status, the central tendency of the age distribution defines a group of employees of similar age. Such employees share the experience of their life stage (cf. Gould, 1978; Levinson, 1978; Vaillant, 1977), and frequently have families at comparable stages of development. Moreover, their economic attainments afford them similar leisure activities, and, in organizations with high average tenure, they share organizational memories of “what things were like in the old days.” As a result of shared experiences, employees of similar ages recognize themselves and are perceived by others as distinct groups. Thus, shared experiences define normative age groups, specify the boundaries of group membership and nonmembership, and thereby become standards of behavior.

Although the preceding discussion suggests a primary causal order for the relationships between age distributions, age norms, and employee behavior,² it does not imply that reciprocal relationships do not occur. In

² The order is informed by the work of Rosenberg, who suggested that “research must allow for the dominant direction of influence of variables” (1968: 11–13). Rosenberg also suggested two factors that indicate the dominant direction: the time order and the fixity or alterability of variables. Variables that are more fixed and less malleable than others come first within a causal sequence. The time order of variables in the explanation proposed here is suggested by the rationale underlying their relationships and supported by their relative fixity. Age distributions are relatively more fixed than age norms because, after organizational turnover is controlled for, age distributions can be predicted with 100 percent accuracy.

fact, age norms may influence age distributions, and employee behavior may alter age norms. For instance, over time, an age effect such as managers' ratings of employees' performance may influence the positions employees hold, thus affecting the age distribution of those positions and the norms that develop. However, the suggested causal order does mean that it would be difficult for an organization to support a change in age norms without a concomitant change in the age distribution. Reciprocal relationships are ultimately of interest to the specification of an organizational theory of age effects but are secondary and not examined here in detail.

The aerospace industry provides an example of how the primary relationships between age distributions, age norms, and employee behavior may occur and what effect they may have on organizations. During the late 1960s and early 1970s, an economic downturn resulted in fewer entry-level engineering hires within aerospace companies. This produced organizations characterized in the mid-1980s by bimodal age distributions. The TRW Corporation, for instance, has a small number of middle-aged managers relative to the numbers of young and old managers it employs.³ Assume for the moment that companies with such age distributions promote from within and that their growth remains fairly stable. If, as was proposed, age distributions drive the development of age norms and age norms produce age effects, the following scenario may pose a potentially serious personnel problem for such firms over the next 20 years.

For many years, demographic career patterns in aerospace companies have favored promotions for middle-aged managers. However, when the current group of older managers retires, there will not be enough top-notch middle-aged managers to fill the vacancies. That fact will create a promotional demand for younger managers and dramatically decrease the average age of middle management. It seems likely that the youngest employees will observe the promotions, note the altered age distributions, and develop age-based promotional expectations that fit their observations. Thus, age norms for middle management positions will shift suddenly from the typical middle-aged manager to the typical younger manager.

Unfortunately, only the leading edge of the younger group will experience this favorable promotion environment. As soon as all the older employees retire and the positions are filled, the availability of new vacancies will slow considerably. The younger managers who received promotions will be around for quite a while; thus, actual promotion patterns will shift again in favor of middle-aged managers. It seems unlikely that the younger age norms for middle management positions will return to middle-aged norms quite as rapidly as the actual average age for the positions increases. Until employee perceptions readjust, the discrepancy will produce a situation in which promotion expectations are regularly violated. Thus, the age effect is likely to be the creation of an unusually large, disaffected group of younger employ-

³ Personal communications with engineering managers and human resource staff members at the TRW Corporation provided this information.

ees who may respond by decreased motivation or by seeking opportunities elsewhere.

Hypotheses

The study described in the next section examined whether the proposed relationships between age distributions, age norms, and employee behavior provide a plausible explanation for socially generated age effects. Data from an electric utility were used to examine those relationships within a managerial career. The following three hypotheses guided the empirical examination.

Managerial careers supply several advantages for studies of socially generated age effects. First, managerial careers are defined by formal status hierarchies. Position on such a hierarchy provides an explicit, unambiguous anchor for age judgments. Thus, the status of any particular career level in relation to other career levels has strong convergent and nomological validity (cf. Bagozzi, 1980) for organizational members. Second, since an individual can occupy only one level at a time, formal advancement is inevitably associated with the age of the individual. That association makes it likely that employees use age to differentiate between career levels and therefore that age norms develop.

The first question to be answered was whether managerial careers within a work organization are age graded; that is, have employees developed shared perceptions of typical ages that differ across career levels? An organizational career is age graded only when normative age groups, defined by employees' shared judgments of typical ages, distinguish between levels. In an age-graded organization, employees agree that the age groups associated with each career level are distinct. In an organization undifferentiated by age, employees agree that a manager's age is unrelated to career level. Thus,

Hypothesis 1: Normative age groups differ across career levels.

If age grading exists, the second question is whether employees perceive demographic age groups accurately. As discussed in the theoretical section, the assumption supporting the use of demographic age groups to predict behavior is that employees' age judgments are accurate and that age norms therefore map directly onto actual age distributions. If that is true, employees' shared judgments of what is typical for each career level should cluster randomly around the actual typical age. Thus,

Hypothesis 2: Normative and demographic age groups for each career level are identical.

Although Hypothesis 2 addresses whether misperceptions occur, it does not address why they occur. This study was not designed to test various explanations for misperceptions; however, I explored the pattern of judgment errors to assess whether they appeared random or systematic. Differences that appeared random would offer little justification for the proposed relationship between age distributions and age judgments. Differences that appeared systematic might indicate what direction future studies should

take in examining the association between age distributions and age judgments.⁴

The final question was whether managers' membership in or deviation from the age groups associated with their career level influences the behavior of other employees toward them. This study examined the association between age groups and managers' performance ratings of managerial subordinates. Individuals whom managers perceive as young for their position, the "fast-trackers" or "water walkers," are generally viewed with higher regard than those who are seen as old (Kanter, 1977). Thus,

Hypothesis 3: There is a significant relationship between normative age group deviation and performance ratings. Specifically, when compared with the number of high performance ratings managers give to randomly selected managerial subordinates:

a) *Managers' performance ratings of managerial subordinates are more likely to be high when managerial subordinates are younger than the normative ages for their career level.*

b) *Managers' performance ratings of managerial subordinates are less likely to be high when managerial subordinates are older than the normative ages for their career level.*

c) *Managers' performance ratings of managerial subordinates are equally likely to be high when managerial subordinates are members of the normative age group for their career level.*

The explanation underlying this study suggests that a relationship between demographic age groups and performance ratings should be observed only to the extent that demographic and normative age groups are similar. If demographic and normative age groups are identical (Hypothesis 2), each should exhibit the same association with performance ratings. However, if demographic and normative age groups differ, the association between normative age groups and performance ratings should be greater than the association between demographic age groups and performance ratings. This pattern should occur because, as I proposed, shared beliefs about standard or typical ages rather than actual standard or typical ages influence managers' performance ratings. However, if demographic age groups appear systematically related to normative age groups, the associations of demographic and

⁴ For instance, decision theory suggests that, when faced with an uncertain distribution, people tend to overestimate its lower boundary and underestimate its upper boundary, thus producing a systematic regression towards the mean (Lichtenstein, Fischhoff, & Phillips, 1982). Observing such a systematic pattern raises additional questions. Does the pattern occur in all organizations, or does it only occur in organizations in which employees perceive the distribution as uncertain? Under what conditions does an organization's age distribution appear uncertain to employees? If scholars can understand how employees make judgments, perhaps we can anticipate what organizational characteristics are likely to produce what patterns of age norms.

normative age groups with performance ratings should exhibit a similar direction, even if the magnitude of the association differs.

METHODS

Data

Demographic and questionnaire data on managerial careers were collected from an electric utility. The Bennix Power Company (not its real name) is an old, established firm. Traditionally, people come to work in the company after finishing their schooling and remain until retirement. The average age of managerial employees is 48 years (range = 25–66), the average tenure is 24 years (range = 0–44), and the correlation between age and tenure is .78. The company's formal management hierarchy includes eight career levels: level 1 is a first-level supervisory position and level 8 includes the chief executive officer and the president. Managerial vacancies are filled internally, and advancement is a slow process. Employees have ample opportunity, therefore, to develop shared and accurate judgments of the age distribution.

The questionnaire was developed in several stages. After preliminary development, ten individuals from an executive education class who were selected for their diverse backgrounds were interviewed about specific questionnaire items and their experiences with age-related work issues. Each interview lasted one and a half to three hours. A revised version of the questionnaire was then pretested with the entire class ($N = 36$), and further revisions were made on the basis of this feedback. After the company's management agreed to participate in the project, I spent three months in the organization. My purpose was to tailor the questionnaire to the organization and to solicit additional questions of interest to its management. Discussions that included several half-day meetings were held with members of the human resources staff. In addition, I conducted four formal interviews of one and a half to three hours each with employees of varying ages, career levels, genders, and functional areas. Each of these employees completed a copy of the questionnaire before being interviewed.

After these discussions and subsequent questionnaire revisions had occurred, the company approved the questionnaire for distribution. Questionnaires were distributed through company mail, and the company permitted one follow-up memorandum. Sixty-six percent ($N = 390$) of all managers returned the questionnaire. Questionnaire data were checked carefully for coding errors. An independent comparison of the final data set against the original questionnaires by two coders indicated that the error rate was negligible ($< 0.07\%$). Demographic data and the company's employee performance ratings were obtained for all managers ($N = 593$).

Sampling bias was examined by comparing demographic characteristics of the managers who completed the questionnaire and of the population of managers. Respondents were representative of the population in career level, functional area, and gender. Response levels fluctuated by age and

tenure, with the distribution of responses biased towards younger managers who had been in the company fewer years. Other comparisons were not possible because the questionnaires were answered anonymously; however, further examination of the data suggested that the age and tenure biases should not affect the results. First, neither age nor tenure is related strongly to age judgments (Lawrence, 1985). Second, tenure appears to exert no effect on age judgments independent of age. The high correlation between age and tenure prohibited a linear decomposition of age and tenure effects, so a Wilcoxon signed-ranks test was used to see whether newcomers and oldtimers viewed the organization any differently. I matched 13 employee pairs ($N = 26$) on age, gender, functional area, and career level. One group comprised individuals who had been with the company for 2 years or less, and the other, individuals who had been with the company for 15 years or more. The results showed no significant difference between the two groups on any of the 24 age judgments assessed in this study. Thus, although it remains possible that sampling bias affected the results, it seems unlikely.

Measures

Age judgments. Respondents' judgments of the ages of managers in each career level were used to assess normative age groups. Age norms do not exist without such judgments because standards for age-typical behavior cannot be enforced without wide agreement on the typical ages. For each career level in the organization, the questionnaire asked managers' 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 example shown in Figure 1, the respondent indicates that he believes the typical age of supervisors is 37 and that supervisors range in age from 25 to 38 years old.⁵

FIGURE 1
Questionnaire Item Requesting Respondents' Age Judgments

1. At Bennix Power Company, my perception is that supervisors are:



⁵ The visual age scale allowed people to be flexible in answering questions. Pretesting 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 an entire age range. Whether the two methods would have elicited different responses is unknown. Additional study on the reliability and validity of different methods of obtaining age judgments is necessary.

This study follows Homans' (1950) description of normative inference, in which standards of behavior are inferred from what people say is typical (cf. Labovitz & Hagedorn, 1973). The disadvantage of normative inference is that it does not assess directly whether subjects perceive their judgments of typical behaviors to be standards. However, direct questions concerning behavioral standards assume that people are equally aware of what behaviors are typical and what behaviors are atypical. On the basis of the preliminary interviews and questionnaire pretesting, that assumption appeared unwarranted for age. People are much better at describing the actual typical age for an activity than they are at discussing what is atypical. The social norms around age seem deeply embedded within everyday life: when asked about atypical ages, people often treat the question as absurd.⁶ For that reason, respondents' age judgments of typical managers were used to define normative age groups.

Normative age groups. Age norms were defined earlier as widely shared beliefs about the standard or typical ages of individuals holding roles or statuses. The set of ages that defines the standard or typical ages for any role or status is its normative age group. There are two issues in defining normative age groups from a distribution of age judgments. One is deciding how to select the age boundaries. The other is deciding how much agreement there must be before judgments are said to be shared. This study followed Kluckhohn, who suggested that "the best conceptual model of the culture can only state correctly the central tendencies and ranges of variation" in a distribution (1951: 76).

The normative age group for each career level was defined as the age range circumscribing the central tendency in the distribution of typical age judgments. I selected age-group boundaries using the youngest and oldest ages that received at least 10 percent ($N = 39$) of the responses. Those age-group boundaries seem likely to be multiples of five because census reports in many countries show that people characteristically report ages that end in 0 and 5 (Shyrock, Siegel, & associates, 1980: 204). If that occurred for respondents' judgments, using means and standard deviations to define age-group boundaries might have failed to capture an important component of what managers judged to be typical.

Following Jacobsen and Van Der Voordt (1980), I considered managers' age judgments to be widely shared when the level of agreement delineated a *representative norm*, "the relative frequency of the modal category being so great that it represents the population's response for most intents and

⁶ I once asked a 45-year-old defense industry manager whether there were any standard ages within his company for middle-level managers. His reply was "Of course not. We promote the best people available." I then asked whether he would hire a 25-year-old individual in his middle-level job. This time he said, "Let's not be ridiculous." Although his response appeared reasonable to him, in some companies, for instance, start-up electronics firms, a 25-year-old middle manager would not be at all out of place. The point is that this manager was so unaware of his own age standards that he could not discuss a question concerning standard ages unless confronted with ages that grossly violated his expectations.

purposes" (1980: 473). For the Bennis Power Company, that level of agreement was reached when 66.6 percent of the respondents agreed on the normative age group for a career level.⁷

Demographic age groups. Demographic age groups were defined by the age range one standard deviation around the mean age of the population for each career level. I used the standard deviation to define demographic age group boundaries because it provides a generally accepted measure of central tendency.

Performance ratings. Managers' performance ratings for all managerial subordinates were obtained for the population of the company's managers who had received performance ratings the year the questionnaire was distributed ($N = 542$). All managers in levels 2 through 8 rate subordinate managers. Bennis's performance ratings range from unacceptable (0) to excellent (5). Most managers receive good (3) ratings ($N = 305$, 56.3%), suggesting this category can be interpreted as including competent but not outstanding individuals. I considered the managers whose ratings were above ($N = 161$, 29.7%) or below ($N = 76$, 14.0%) those of that group as the high and low performers at the company.

RESULTS

The top part of Table 1 shows the means, standard deviations, and ranges of age judgments for the eight career levels. All eight levels exhibited considerable variation in age judgments. An analysis reported elsewhere (Lawrence, 1985) has indicated that only a small portion of the variation in age judgments can be attributed to a respondent's age, organizational tenure, career level, or education.

Figure 2 shows the frequency distribution for level 1. The remaining seven distributions exhibit a similar pattern.⁸ Two interesting characteristics of the frequency distributions should be noted. First, as expected, respondents tended to specify ages that are multiples of five. On the average, 55 percent of the typical age judgments for each career level fell in that category. Thus, the managers studied tended to treat the interval age scale as an 11-step ordinal item and did not distinguish between ages less than five years apart. This results in peaks in the frequency distributions that have more to do with how people interpret questions about age than with the essential characteristics of the distribution.

When the distinction between ordinal and interval interpretations of the age scale are taken into account, the second salient characteristic of the

⁷ The 66.6 percent level of agreement was computed using Jacobsen and Van Der Voordt's guidelines for assessing widely shared social norms using modal frequencies. The following equation specifies the requisite level of agreement for a given study: $pk_{1rep} = \frac{1}{2}(1 + \frac{1}{K})$, where pk_{1rep} is the level of agreement required for a representative norm and K equals the number of response categories. In the firm studied, there are three response categories for each career level because an employee's age judgment can fall either within, ahead, or behind the range of normative ages. Thus, $pk_{1rep} = \frac{1}{2}(1 + \frac{1}{3}) = 66.6\%$.

⁸ Age judgment and actual age distributions for each level are available from the author.

TABLE 1
Perceived and Actual Ages for the Managerial Career
at the Company Studied

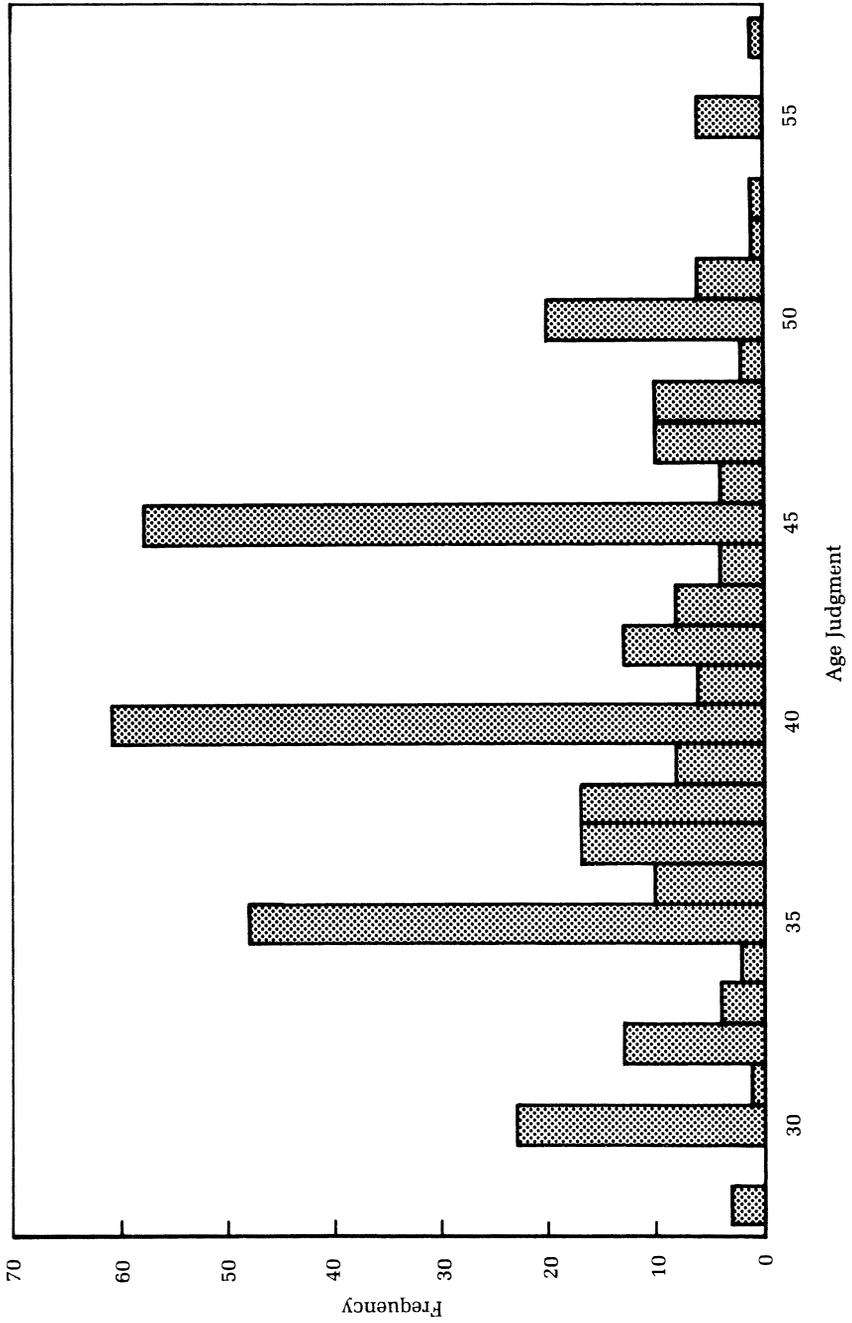
Career Level	Typical Age			Youngest Age			Oldest Age		
	Means	s.d.	Ranges	Means	s.d.	Ranges	Means	s.d.	Ranges
1. Supervisor	40.4	6.1	28-57	32.4	5.9	20-52	51.7	9.2	34-68
2. Senior supervisor	44.8	6.1	30-60	37.6	6.2	20-55	54.3	7.9	35-68
3. Division head	47.9	5.7	33-60	40.4	6.5	25-55	57.1	7.1	35-68
4. Assistant department head	49.5	5.4	35-61	42.1	5.8	28-56	57.6	6.2	39-68
5. Department head	50.7	4.8	35-62	43.2	6.1	30-61	59.0	5.3	42-69
6. Vice president	53.9	3.6	44-63	47.5	4.3	35-61	61.1	3.7	49-70
7. Senior vice president	56.4	3.2	45-65	51.0	3.7	40-61	62.2	3.0	49-70
8. President and CEO	60.5	2.5	50-75	56.9	3.8	45-64	63.9	2.2	55-74

Career Level	Medians		Modes		μ		σ		N
	Medians	Modes	μ	σ	μ	σ	Ranges		
1. Supervisor	48.0	47	47.2	8.9	47.2	8.9	25-66	287	
2. Senior supervisor	49.0	48	48.1	8.1	48.1	8.1	30-64	139	
3. Division head	50.0	57	49.6	9.3	49.6	9.3	28-65	96	
4. Assistant department head	52.5	57	49.8	9.4	49.8	9.4	31-62	24	
5. Department head	49.0	54	49.2	8.5	49.2	8.5	33-65	31	
6. Vice president	52.0	53	51.1	6.1	51.1	6.1	40-61	10	
7. Senior vice president	53.5	52	54.3	2.9	54.3	2.9	52-58	4	
8. President and CEO	61.5	61	61.5	0.7	61.5	0.7	61-62	2	

^a Results are for a group of 390 respondents.

^b Results are for a population of 593 managers.

FIGURE 2
Frequency Distribution for Typical Age Judgments, Career Level 1



distributions that emerged is that they are basically unimodal. For every career level, all ages that received more than 10 percent of the responses occurred at adjacent five-year intervals. Moreover, with few exceptions, the fraction of responses between those ages is higher than the fraction of responses between other five-year age intervals. Thus, the distributions are unimodal, both for the ages that are multiples of five and for those that are not. This pattern suggests that respondents agreed that a single age group represented what is typical for each level. An alternate finding might have been a bimodal or multimodal distribution, indicating that some people believed one age group was typical and others believed a different age group was typical. This result is important because it permits the specification of a single normative age group for each career level.

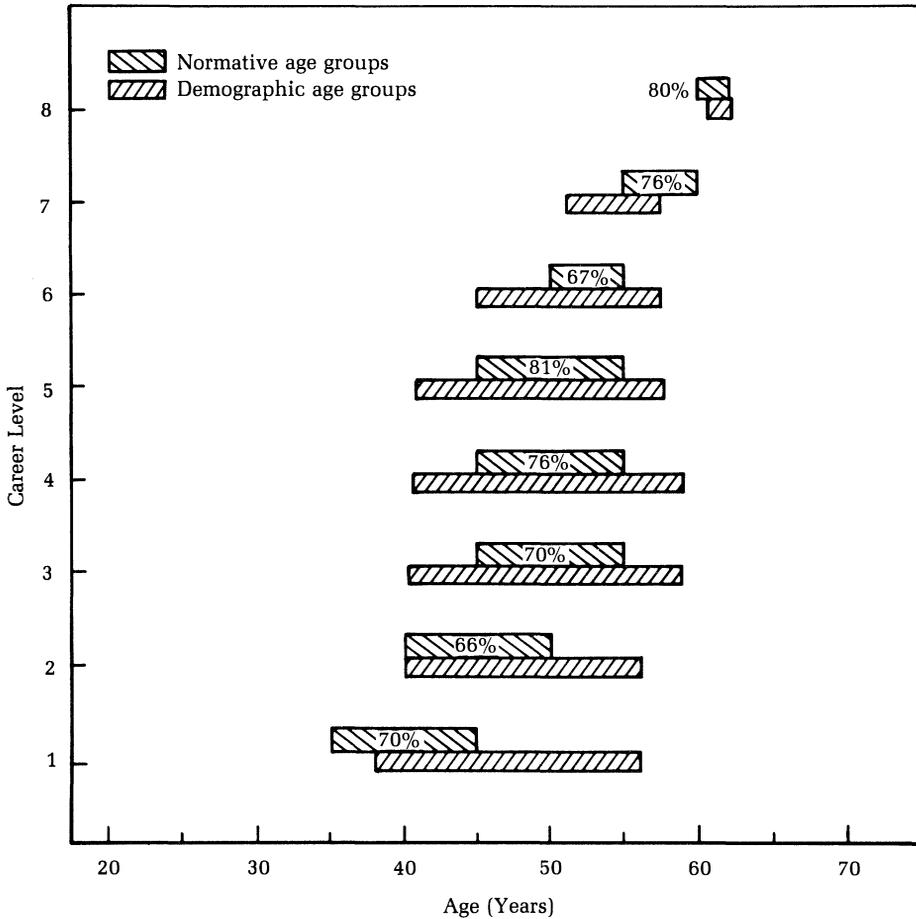
The lower part of Table 1 summarizes the actual age distributions for all career levels. The youngest manager in the company was 25 and the oldest manager was 66. The age range of managers was large in each of the first five levels but decreased dramatically in levels 6 through 8. The decrease reflected the increasing ages of the youngest managers in the higher career levels. Although the ages of managers in levels 1 through 3 were somewhat normally distributed, the age distributions of levels 4 through 8 were fairly flat.

Figure 3 shows the normative and demographic age groups defined for each of the eight career levels. The specification of age groups for level 1 provides an example of the definition process. The normative age group for level 1 is the age range defined by the youngest and oldest ages that received 10 percent of the responses. Figure 2 shows that responses on the ages 35, 40, and 45 exceeded 10 percent of the total responses (13%, 17%, and 16%). The ages between 35 and 40 accounted for 15 percent of the total responses, and the ages between 40 and 45 accounted for 9 percent. The next closest candidate for inclusion as a normative age group boundary is age 30. However, responses on this age and the ages between 30 and 35 occurred much less frequently. The fraction of responses on age 30 was 6 percent, and the fraction of responses between 30 and 35 was also 6 percent. Seventy percent of all respondents believed the typical age of level 1 managers to be between 35 and 45. Thus, I selected 35 and 45 as the normative age group boundaries for this career level.

On the average, 73 percent of all respondents agreed on the normative age groups for each career level (range = 66–81%). Thus, with the exception of level 2, which just misses the suggested 66.6 percent cutoff, the level of managers' agreement on age judgments suggests these normative age groups delineate representative norms (Jacobsen & Van Der Voordt, 1980).

The demographic age group for level 1 is defined by the age range one standard deviation around the mean age. The mean age for level 1 is 47.2, and the standard deviation is 8.9. Thus, 38.3 and 56.1 are the demographic age group boundaries for this career level.

FIGURE 3
Comparison of Normative and Demographic Age Groups^a



^a The numbers within the bars defining normative age groups indicate the fraction of total responses falling within the given age range.

The Existence of Age Grading

Hypothesis 1 states that normative age groups differ across career levels. Figure 3 shows the comparison of normative age groups across the eight career levels. Although several normative age groups overlap, there are four mutually disjoint age categories: 35–45, 45–55, 55–60, and 60–62. Typical managers in level 1, levels 3–5, level 7, and level 8 are seen as different in age from one another; thus, the managerial career appears to be age graded.

This aggregate analysis of judgments obscures individual response patterns; it is possible, given the large variation in responses for each level, that most individual respondents did not see age differences between career levels. To take an extreme example, suppose that the typical age judgments for level 1 are uniformly distributed between the ages of 20 and 25 and that those for level 2 are uniformly distributed between 21 and 26. It may be that all respondents saw a one-year difference between the typical ages in levels 1 and 2. But it could also be that 80 percent of the respondents saw no difference and 20 percent saw a six-year difference between the typical ages in those levels. To test this possibility, I used a multivariate repeated measures test (Morrison, 1976: 141–150). The null hypothesis was that, on the average, each respondent saw no age differences between the eight career levels.

The results did not support the null hypothesis ($F_{7,332} = 984.50$; $p < .001$). Individual respondents did not think the typical age for managers was the same in all eight levels. Given that result, I computed simultaneous confidence intervals for the differences between adjacent levels to determine which career levels differed. The results showed that respondents saw managers in all adjacent career levels as differing in age. Thus, the aggregated judgments defining normative age groups do not obscure individual judgments of no age differences between career levels. If anything, aggregated judgments obscure the extent to which individuals do age grade the managerial career.

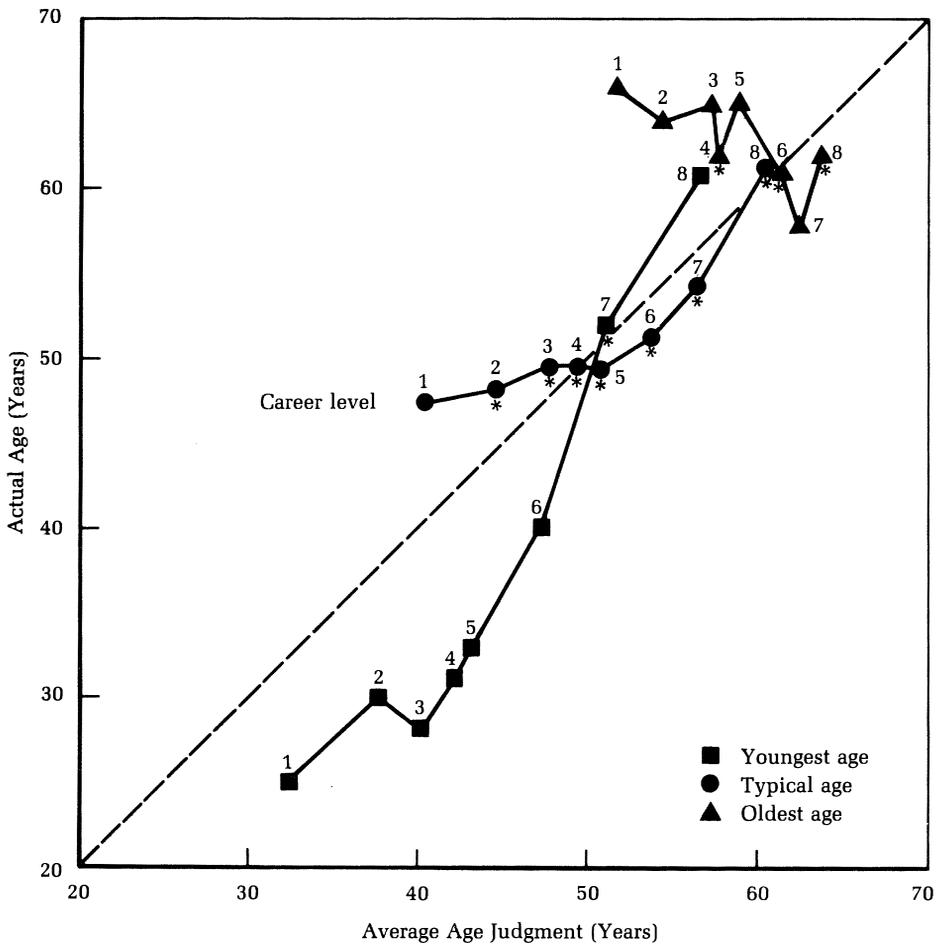
Comparison of Normative and Demographic Age Groups

Hypothesis 2 states that normative and demographic age groups for each career level are identical. Figure 3 shows the comparison of normative and demographic age groups for each career level. The groups overlap but are not identical. A comparison of the distributions underlying the two age groups corroborated the significance of their differences. If normative and demographic age groups are similar, typical age judgments should be randomly distributed around the median age for each level. Results of a binominal test (Snedecor & Cochran, 1980: 96–97) failed to support the similarity hypothesis at the .05 level for all eight levels. Respondents' judgments of age groups do not match demographic age categories; thus, managers appear to misperceive the actual distribution of age in their organization.

Although these results disconfirmed the equality assumption, normative and demographic age groups may still have been related. Thus, it was important to explore whether their differences were random or systematic. A comparison of the two sets of age groups suggested a systematic relationship. Normative and demographic age groups for each level overlap. In addition, with the exception of level 8, normative age groups constrain the range of typical ages further than the actual distribution indicates. Although normative age groups are defined by aggregated judgments, the results are consistent with the regression phenomenon observed in individual decision making. As discussed earlier, people tend to tighten boundaries when making judgments of uncertain distributions (Lichtenstein et al., 1982).

To confirm whether the regression observed at the aggregate level reflects a similar phenomenon at the individual level, average judgments for the typical as well as the youngest and oldest managers were compared with the actual ages for each level. Figure 4 shows this comparison. One set of points represents the actual youngest age compared to the average youngest age judgment, another set represents the actual oldest age compared to the average oldest age judgment, and a third set represents the actual average age

FIGURE 4
Comparison of Actual Ages with Age Judgments^a



^a For those levels marked underneath by an asterisk, the actual age falls within one standard deviation of the average age judgment.

compared to the average typical age judgment. When the average age judgment is accurate, points fall on the identity line. Because there is variation in judgments, a second measure of accuracy is whether the actual age is within the range of most age judgments. Career levels for which the actual age is within one standard deviation of the average judgment are indicated by an asterisk underneath the symbol.

The results of the comparison support the existence of a systematic regression in respondents' judgments at the individual level. As expected, on the average, respondents consistently overestimated the youngest age and underestimated the oldest age for each level. Judgments of average typical ages were reasonably accurate compared with judgments of the youngest and oldest ages. However, the regression observed for the extreme ages suggests that this phenomenon may explain the tightness of typical age judgment distributions that define normative age group boundaries.

The availability of information on which judgments are made may explain the relative accuracy of judgments about typical ages. People recall frequent events more easily than infrequent events (Tversky & Kahneman, 1973, 1974). In this organizational context, managers may make judgments on the basis of whom they see, and they see the typical manager more often than they see the youngest or the oldest manager. That explanation 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 high-level managers. People may make better judgments concerning them because they are highly visible and few in number.

The results presented here suggest that managers may employ decision heuristics when making judgments about a company's age distribution. Given that shared judgments define normative age groups, such an interpretation is not inconsistent with the explanation that age norms evolve from actual distributions. Although normative and demographic age groups are not identical in this organization, they appear related systematically through judgment processes.

The Relationship Between Age Groups and Performance Ratings

Since the results did not support Hypothesis 2, Hypotheses 3a–3c were examined for both normative and demographic age groups. Those hypotheses specify the expected relationships between age-group membership and performance ratings. Figure 3 shows the normative and demographic age groups defined for each career level in the organization. These age-group definitions were used to divide the population of the firm's managers who received performance ratings ($N = 542$) into *ahead-of-schedule*, *on-schedule*, and *behind-schedule* categories. For example, applying normative age groups, I assigned all level 1 managers younger than 35 years of age to the *ahead-of-schedule* category, as well as level 2 managers younger than 40, level 3

managers younger than 45, and so forth through the eight levels. The same procedure was used to divide the population using demographic age groups.⁹

The test of Hypothesis 3 is whether the proportion of managers receiving high performance ratings in each of the ahead-of-schedule, behind-schedule, and on-schedule categories differs from what is expected for the population. The proportion of managers receiving high performance ratings in the population is 29.7 percent, so the expected frequency for each category is 29.7 percent of the frequency of respondents in that category. Observed and expected frequencies were compared using a chi-square goodness-of-fit test.

Table 2 summarizes the results of those tests. For normative age groups, the results support Hypotheses 3a–3c. The numbers of managers receiving high performance ratings in both the ahead-of-schedule and behind-schedule categories are significantly different from what would be expected. The number of high performance ratings in the ahead-of-schedule category is significantly higher than expected and the number of high performance ratings in the behind-schedule category is significantly lower than expected. The number of managers receiving high performance ratings in the on-schedule category does not differ significantly from the number in the population.

The results for the demographic age groups are quite different. Although the results support Hypothesis 3c, they support neither Hypothesis 3a nor 3b. None of the on- or off-schedule categories discriminate the number of managers receiving high performance ratings from what is expected within the population at the .05 level.

Both normative and demographic age groups appear similarly related to managers' performance ratings. However, the relationship between age-group deviation and performance ratings is significant for normative age groups, whereas this relationship is not significant for demographic age groups. If researchers taking the demographic approach had examined age groupings in the Bennis Power Company using only these demographic specifications, they would have observed no significant relationship between managerial subordinates' age-group membership and performance ratings by supervisory managers. This finding supports the importance of studying both employees' judgments and actual age distributions in studies of socially generated age effects.

An important alternate explanation for these findings is that the probability of receiving a high performance rating is positively related with youth (Rosen & Jerdee, 1976a, 1977). Managers in the ahead-of-schedule category

⁹ Only managers in levels 2 through 8 gave performance ratings of managerial subordinates; therefore, before I examined the relationship between age groups and performance it was important to confirm that those managers' view of normative age groups was similar to that of the aggregate group of managers. The data show that it is. Normative age groups for managers in levels 2 through 8 are identical to the normative age groups for the aggregate group of managers. Further, the level of agreement on each career level for managers in levels 2 through 8 lies within four percentage points of the aggregate levels shown in Figure 3 (average difference = 1.8, range = 0–4). In all cases, the proportion of managers in levels 2 through 8 who agree on the normative age group exceeds the 66.6 percent cutoff.

TABLE 2
Frequencies of Managers Receiving Various
Performance Ratings

Schedule Categories ^a	Observed	Expected ^b	χ^{2c}
(a) Normative Age Groups			
Ahead-of-schedule			
High performance ratings	34	24.35	
Low-to-average performance ratings	48	57.65	
Total	82	82.00	5.44*
On-schedule			
High performance ratings	65	55.24	
Low-to-average performance ratings	121	130.76	
Total	186	186.00	2.45
Behind-schedule			
High performance ratings	62	81.38	
Low-to-average performance ratings	212	192.62	
Total	274	274.00	6.57*
(b) Demographic Age Groups			
Ahead-of-schedule			
High performance ratings	31	23.46	
Low-to-average performance ratings	48	55.54	
Total	79	79.00	3.44
On-schedule			
High performance ratings	113	114.05	
Low-to-average performance ratings	271	269.95	
Total	384	384.00	0.01
Behind-schedule			
High performance ratings	17	23.46	
Low-to-average performance ratings	62	55.54	
Total	79	79.00	3.44

^a The age-group definitions were used to divide the populations of managers who received performance ratings into the categories indicated.

^b The expected frequency equals $.297(N)$, where $.297$ is the proportion of managers receiving high performance ratings in the population and N is the number of respondents in the category.

^c $df = 1$.

* $p < .05$

may receive higher performance ratings because they are younger than other managers, and younger managers receive higher ratings, regardless of age-group membership.

To examine this possibility, the relationship between age and performance was studied. Although the correlation between these two variables is not significant ($r = -.04$, $p = .35$), further examination revealed they have a curvilinear relationship. The proportion of managers receiving high performance ratings is lowest among young (20–30) and old (63+) managers. It is

highest among managers between the ages of 31 and 40. After 40, the proportion of managers receiving high performance ratings declines somewhat but remains relatively stable through age 62. I used these characteristics of the performance distribution to divide managers into four age cohorts: 20–30, 31–40, 41–62, and over 62. If age explains performance ratings independently of age-group membership, there should be no difference between the proportion of high performance ratings in each on- and off-schedule category. The findings summarized in Table 3 show that is not the case.

In all instances where there is a comparison age cohort, ahead-of-schedule managers are more likely to receive high performance ratings than on-schedule managers, and on-schedule managers are more likely to receive high performance ratings than behind-schedule managers. For the normatively defined categories, 48 percent of the ahead-of-schedule managers in the top-performance 31–40 year-old age cohort received high performance ratings, whereas only 33 percent of the on-schedule managers in this cohort received high performance ratings. Similarly, 42 percent of the ahead-of-schedule managers in the moderate-performance 41–62 year-old age cohort received high performance ratings, whereas only 35 percent of the on-schedule managers and 24 percent of the behind-schedule managers in this age cohort did so. The same pattern of results emerged for the demographically defined categories. Age-group membership appears related to managers' performance ratings, regardless of the subordinate's age.

TABLE 3
Proportions of Managers Receiving High Performance
Ratings in Schedule Categories^a by Age Cohort

Schedule Categories	Age Cohorts ^b									
	20–30		31–40		41–62		≥63		Total	
	%	N	%	N	%	N	%	N	%	N
(a) Normative Age Groups										
Ahead-of-schedule	14	14	48	56	42	12			41	82
On-schedule			33	24	35	162			35	186
Behind-schedule					24	257	6	17	23	274
(b) Demographic Age Groups										
Ahead-of-schedule	14	14	45	65					39	79
On-schedule			40	15	29	369			29	384
Behind-schedule					26	62	6	17	22	79

^a The age-group definitions were used to divide the population of managers into the categories indicated.

^b The column headed % gives the proportion of managers receiving high performance ratings. The column headed N gives the total number of managers receiving performance ratings.

DISCUSSION AND IMPLICATIONS

The goal of this exploratory study was to examine an explanation for socially generated age effects. The results support the plausibility of that explanation—age distributions appear distinct from, but related to, age norms, and deviation from age norms is associated with performance ratings. Further, the relationship between managers' deviations from the typical ages of the age distribution for their positions and the performance ratings they receive is not significant, whereas the comparable relationship for age norms is. The direction of the two relationships, however, is similar. These findings are not inconsistent with the interpretation that age distributions and age norms are related systematically. Moreover, these findings are consistent with the interpretation that managers respond to shared beliefs about age rather than to actual ages.

Several limitations should be noted in interpreting the results. Bennis Power Company is only one organization, and we do not know how these age-related phenomena will generalize to other organizations. Preliminary interviews conducted before this research took place suggest that age judgments of career progress depend on organizational characteristics such as industry, size, age, and rate of growth. That dependence is not surprising, given that age distributions differ by occupation (Kaufman & Spilerman, 1982; Miles, 1935: 658–664; Smith, 1973). It seems likely that age grading differs in other organizations, even if the processes linking age and employee behavior remain the same. Moreover, if widely shared judgments depend on a stable organizational context such as the one studied here, it is possible that employees in organizations with high turnover or fluctuating career hierarchies do not develop such widely shared judgments and thus that age norms are either weak or nonexistent.

In addition, the data are cross-sectional. Although the explanation suggests the direction of the relationships between age distributions, age norms, and individual behavior, this research did not provide evidence on their causal order. It is not possible with cross-sectional data to state whether age-group deviation causes differences in managers' performance ratings or whether managers' performance ratings lead to changes in perceptions of typical ages and hence, age-group deviation. It is possible that both occur. The observed relationships may result from managerial decisions that become institutionalized over time and thus serve to create and reinforce the meaning of age norms. For instance, if a manager is promoted when he or she is young in terms of the current age norms for a career level, other managers in the organization may see the promotion as a signal of the promoted individual's ability (Forbes, 1987; Rosenbaum, 1988). Once defined as a high-performance employee, the manager may have an increased probability of future promotions at an early age. This process reinforces existing age norms and increases the likelihood of observing performance differences for ahead-of-schedule employees.

Further, although the exploratory findings showing a systematic relationship between age distributions and age judgments suggest decision heuris-

tics at work, other explanations for the association between age distributions and age judgments should be examined. For instance, it is well known that majority opinion influences the judgments of individuals, even when majority opinion is inaccurate (Asch, 1951). As a result, if a young employee associates with older managers who still think of the organization as it was in "the good old days," the young manager's age judgments may be influenced by the groups' perceptions. It is also possible that misperceptions occur because employees' age judgments do not adjust rapidly when an organization's age distribution changes. Related work on social comparison processes (e.g., Singer, E., 1981; Singer, J.E., 1980) suggests that misperceptions may occur because of the salience of career success to employees. For instance, an employee who cares a great deal about promotion may watch fast-track managers carefully; thus, the ages of fast-trackers may influence the employee's judgments.

Finally, the meaning of the relationship between age groups and performance remains in question. Managers appear to use their subordinates' age-group membership as an implicit evaluation criterion. Yet being off schedule may have little to do with performance. Highly respected managers may choose a slower performance route even when given the opportunity to move ahead (Bailyn, 1979). As a result, it is unknown whether the differences in performance ratings observed in this study indicate perceived or actual differences in performance. However, it seems likely that such evaluations, even if originally inaccurate, become accurate over time through a social form of self-fulfilling prophecy. The process through which age norms influence behavior remains an area for further investigation.

The findings do suggest that the "unexplored territory" (Elder, 1975: 176; Hogan, 1981: 13) connecting age distributions, age norms, and employee behavior is fertile ground, not only for elaborating an explanation for age effects, but also for understanding career systems within organizations. First, shared perceptions of typical ages may indicate employees' perceptions of potential mobility. For instance, respondents believed that only level 1 managers were typically younger than 40 and that only level 7 and 8 managers were typically older than 55. Those boundaries suggest that respondents believed almost all upward movement occurred between the two ages. Forty is the age at which people begin to move to level 2, and 55 is the make-or-break age for promotion to the highest levels, a move most managers never make. Thus, in an organization where employees often remain their entire working lives, about 45 years, managers see themselves as upwardly mobile during only 15 years. Longitudinal data are not available from this company, but these perceptions are consistent with findings from Rosenbaum's (1979a, 1979b, 1984) study of a large corporation, in which the period of high career mobility was limited to a rather short timespan.

Second, age grading may play a role in demographic theories of promotion probabilities. If managers base evaluation and promotion decisions on what they currently believe is typical for a particular level, such shared age judgments may provide the link between structural and individual explana-

tions of mobility. Stewman and Konda (1983), for example, examined demographically determined promotion probabilities in organizations. Their focus was structural, but they stated that promotions are conditional on managerial preferences. The results presented in this study suggest that such preferences may be guided by age-graded judgments of whether subordinates are ahead of, on, or behind schedule for their career level, because managers may use such judgments as signals of a subordinate's future potential.

Third, in addition to constructing a picture of what is typical in each level, employees may also use age to project the promotion pattern between levels, thus creating a cognitive representation of an entire career. The age judgments in this study suggest several characteristics of such a shared cognitive representation. Although it remains possible that managers selectively ignore deviants, managers at the company studied appear not to realize how early promotions are occurring and seem not to recognize the number of managers who remain in one position until retirement. These inaccuracies are particularly curious because it is no secret that most managers do not leave the company until they retire. That employees overlook the existence of long-plateaued older managers may explain or reflect an American fantasy that promotion opportunity continues forever (Rosenbaum, 1984).

Another characteristic is that the managers studied created larger differences between organizational statuses than exist in reality. Compared with actuality, typical age judgments systematically exaggerated the differences between the first five career levels. In typical age judgments, levels 1 and 5 are, on the average, 10 years apart. In actuality, levels 1 and 5 are, on the average, only two years apart. Managers appear to believe they are on an age-based career ladder when, in fact, it is unclear that such a ladder exists.

Certainly, research suggests that people appear aware of age-graded timetables (Bailyn & Lynch, 1983; Kanter, 1977; Lawrence, 1980; Martin & Strauss, 1956; Sofer, 1970). The unarticulated and probably unconscious use of such timetables in evaluation, in conjunction with the appearance of age-graded norms in virtually all social systems (Lawrence, 1987: 51), suggests that age norms may be basic assumptions (Schein, 1985) within organizational cultures. If age grading occurs and differs in other organizations, career plateaus and technological obsolescence may be organizationally specific manifestations of such norms. A 35-year-old middle manager may be plateaued in one company and on a fast track in another. Mergers may be complicated when firms have top management teams of widely differing ages. And employees who choose lateral transfers or career slowdowns at the wrong age may unknowingly risk their future chances for promotion. Such organizational issues have frequently been attributed to chronological aging, but position on an age-graded timetable may better explain them.

Finally, the results suggest that age distributions may play an important role in career systems. If, as suggested by this study, age norms evolve from actual age distributions, the changing age distribution in this country may signal subsequent changes in age norms. This raises the important question

of how responsive age norms are to changes in age distributions. Do employees tend to hang on to old judgments, or do they quickly perceive a changing social order? Predicting a socially generated age effect such as managerial promotion preferences thus requires knowledge of the stability of age judgments under conditions of a stable age distribution and of the dynamics that determine the time lag between a changing age distribution and subsequent changes in judgments. Moreover, if age norms do influence employee motivation and performance, understanding how such norms evolve will help promote the design of better organizational structures. Work groups selected for age diversity, for instance, may increase the range of ages considered acceptable by employees and thus increase the potential high-performance period.

Results from this study are consistent with the explanation that age distributions drive the development of age norms that in turn influence employee behavior. However, the lack of consensus on age norms suggests an addition to the theory. Some respondents thought that age norms differed from those agreed upon by most other respondents in the company, and it is interesting to speculate whether these deviant individuals experience age norms differently. Some managers may perceive but disagree with and ignore the norms, whereas others may be unaware of the norms in the first place. Assuming that some relationship exists between performance ratings and actual performance, such individual perceptions may be useful for explaining how behind-schedule managers maintain high performance in spite of the social pressures that define them as "over the hill." Thus, the effect of age norms on individuals may depend on individual differences as well as on normative and demographic age groupings. Understanding the separate effects of and the joint interaction between these three methods of matching age categories with roles and statuses helps in elaborating how people create, recreate, and maintain continuity at work by using age to index their expectations.

REFERENCES

- Abeles, R. P., Steel, L., & Wise, L. L. 1980. Patterns and implications of life-course organization: Studies from Project TALENT. In P. Baltes & O. G. Brim (Eds.), *Life-span development and behavior*, vol. 3: 307–337. New York: Academic Press.
- Asch, S. E. 1951. Effects of group pressure upon the modification and distortion of judgments. In H. Guetzkow (Ed.), *Groups, leadership, and men*: 177–190. Pittsburgh: Carnegie Press.
- Atchley, R. C. 1975. The life course, age grading, and age-linked demands for decision making. In N. Datan & L. H. Ginsberg (Eds.), *Life-span developmental psychology: Normative life crises*: 261–278. New York: Academic Press.
- Bagozzi, R. P. 1980. *Causal models in marketing*. New York: Wiley.
- Bailyn, L. 1979. Taking off for the top: How much acceleration for career success? *Management Review*, 68: 18–23.
- Bailyn, L., & Lynch, J. T. 1983. Engineering as a life-long career: Its meaning, its satisfactions, its difficulties. *Journal of Occupational Behaviour*, 4: 263–283.
- Cain, L. D., Jr. 1964. Life course and social structure. In R. E. Faris (Ed.), *Handbook of modern sociology*: 272–309. Chicago: Rand McNally & Co.

- Dalton, G. W., & Thompson, P. H. 1971. Accelerating obsolescence of older engineers. *Harvard Business Review*, 49(5): 57-67.
- Eisenstadt, S. N. 1956. *From generation to generation: Age groups and social structure*. London: Free Press of Glencoe.
- Elder, G. H., Jr. 1975. Age differentiation and the life course. *Annual Review of Sociology*, 1: 165-190.
- Elder, G. H., Jr., & Rockwell, R. C. 1976. Marital timing in women's life patterns. *Journal of Family History*, 1: 34-53.
- Faulkner, R. R. 1974. Coming of age in organizations: A comparative study of career contingencies and adult socialization. *Sociology of Work and Occupations*, 1: 131-173.
- Forbes, J. B. 1987. Early intraorganizational mobility: Patterns and influences. *Academy of Management Journal*, 30: 110-125.
- Gould, R. L. 1978. *Transformations: Growth and change in adult life*. New York: Simon & Schuster.
- Hogan, D. P. 1981. *Transitions and social change: The early lives of American men*. New York: Academic Press.
- Homans, G. C. 1950. *The human group*. New York: Harcourt, Brace & World.
- Jacobsen, C., & Van Der Voordt, T. J. M. 1980. Interpreting modal frequencies to measure social norms. *Sociological Methods and Research*, 8: 470-486.
- Kanter, R. M. 1977. *Men and women of the corporation*. New York: Basic Books.
- Kaufman, R. L., & Spilerman, S. 1982. The age structures of occupations and jobs. *American Journal of Sociology*, 87: 827-851.
- Kidder, T. 1981. *The soul of a new machine*. Boston: Little, Brown & Co.
- Gluckhohn, C. 1951. The concept of culture. In D. Lerner & H. D. Lasswell (Eds.), *The policy sciences*: 86-101. Palo Alto, Calif.: Stanford University.
- Labovitz, S., & Hagedorn, R. 1973. Measuring social norms. *Pacific Sociological Review*, 16: 283-303.
- Lawrence, B. S. 1980. The myth of the midlife crisis. *Sloan Management Review*, 21(3): 35-49.
- Lawrence, B. S. 1984. Age grading: The implicit organizational timetable. *Journal of Occupational Behaviour*, 5: 23-35.
- Lawrence, B. S. 1985. *Uncovering elements in organizational culture*. Working paper, Graduate School of Management, University of California, Los Angeles.
- Lawrence, B. S. 1987. An organizational theory of age effects. In S. Bacharach & N. DiTomaso (Eds.), *Research in the sociology of organizations*, vol. 5.: 37-71. Greenwich, Conn.: JAI Press.
- Levinson, D. J. 1978. *The seasons of a man's life*. New York: Alfred A. Knopf.
- Lichtenstein, S., Fischhoff, B., & Phillips, L. D. 1982. Calibration of probabilities: The state of the art to 1980. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases*: 306-334. Cambridge, U.K.: Cambridge University Press.
- Linton, R. 1936. *The study of man*. New York: D. Appleton-Century.
- Linton, R. 1940. A neglected aspect of social organization. *American Journal of Sociology*, 45: 870-886.
- Linton, R. 1942. Age and sex categories. *American Sociological Review*, 7: 589-603.
- Maccoby, M. 1977. *The gamesman*. New York: Simon & Schuster.

- Mannheim, K. 1928. The problem of generations. Reprinted 1952 in P. Kecskemeti (Ed. and Translator), *Essays on the sociology of knowledge*: 276–322. London: Routledge and Kegan Paul.
- Marini, M. M. 1984. Age and sequencing norms in the transition to adulthood. *Social Forces*, 63: 229–244.
- Martin, N. H., & Strauss, A. L. 1956. Patterns of mobility within industrial organizations. *Journal of Business*, 19: 101–110.
- Miles, W. R. 1935. Age and human society. In C. Murchison (Ed.), *A handbook of social psychology*: 596–682. New York: Russell & Russell.
- Morrison, D. F. 1976. *Multivariate statistical methods* (2nd ed.). New York: McGraw-Hill Book Co.
- Murdock, G. 1945. The common denominator of cultures. In R. Linton (Ed.), *The science of man in the world crisis*: 123–142. New York: Columbia University Press.
- Neugarten, B. L., & Danan, N. 1973. Sociological perspectives on the life cycle. In P. W. Baltes & K. W. Schaie (Eds.), *Life-span developmental psychology: Personality and socialization*: 53–69. New York: Academic Press.
- Neugarten, B. L., Moore, J. W., & Lowe, J. C. 1965. Age norms, age constraints, and adult socialization. *American Journal of Sociology*, 70: 710–717.
- Neugarten, B. L., & Petersen, W. A. 1957. A study of the American age-grade system. *Proceedings of the International Association of Gerontology, Fourth Congress*, 3: 497–502.
- Newcomb, T. M., Turner, R., & Converse, P. E. 1965. *Social psychology: The study of human interaction*. New York: Holt, Rinehart & Winston.
- Parsons, T. 1942. Age and sex in the social structure of the United States. *American Sociological Review*, 7: 604–616.
- Passuth, P. M., Maines, D. R., & Neugarten, B. L. 1984. *Age norms and age constraints 20 years later*. Unpublished manuscript, Andrus Gerontology Center, University of Southern California.
- Radcliffe-Brown, A. R. 1929. Age organisation terminology. *Man*, 13: 21.
- Riley, M. W. 1987. On the significance of age in sociology. *American Sociological Review*, 52: 1–14.
- Riley, M. W., Johnson, J., & Foner, A. (Eds.) 1972. *Ageing and society*, (vol. 3): *A sociology of age stratification*. New York: Russell Sage Foundation.
- Rosen, B., & Jerdee, T. H. 1976a. The influence of age stereotypes on managerial decisions. *Journal of Applied Psychology*, 61: 428–432.
- Rosen, B., & Jerdee, T. H. 1976b. The nature of job-related age stereotypes. *Journal of Applied Psychology*, 62: 180–183.
- Rosen, B., & Jerdee, T. H. 1977. Too old or not too old. *Harvard Business Review*, 55(6): 97–107.
- Rosenbaum, J. E. 1979a. Organizational career mobility: Promotion chances in a corporation during periods of growth and contraction. *American Journal of Sociology*, 85: 21–48.
- Rosenbaum, J. E. 1979b. Tournament mobility: Career patterns in a corporation. *Administrative Science Quarterly*, 24: 220–240.
- Rosenbaum, J. E. 1984. *Career mobility in a corporate hierarchy*. San Francisco: Academic Press.
- Rosenbaum, J. E. 1988. Organizational career systems and employee misperceptions. In M. B. Arthur, D. T. Hall, & B. S. Lawrence (Eds.), *The handbook of career theory*: forthcoming. Cambridge, U.K.: Cambridge University Press.

- Rosenberg, M. 1968. *The logic of survey analysis*. New York: Basic Books.
- Ryder, N. B. 1965. The cohort as a concept in the study of social change. *American Sociological Review*, 30: 843–861.
- Schein, E. H. 1985. *Organizational culture and leadership*. San Francisco: Jossey-Bass.
- Sherif, M. 1936. *The psychology of social norms*. New York: Harper & Brothers.
- Shyrock, H. S., Siegel, J. S., & associates. 1980. *The methods and materials of demography*. Washington, D.C.: U.S. Department of Commerce, Bureau of the Census.
- Simmel, C. 1950. *The sociology of Georg Simmel*. Translated by K. H. Wolff. Glencoe, Ill.: Free Press.
- Singer, E. 1981. Reference groups and social evaluations. In M. Rosenberg & R. Turner (Eds.), *Social psychology: Sociology perspectives*: 66–93. New York: Basic Books.
- Singer, J. E. 1980. Social comparison: The process of self-evaluation. In L. Festinger (Ed.), *Retrospections on social psychology*: 158–179. New York: Oxford University Press.
- Smith, J. M. 1973. Age and occupation: The determinants of male occupational age structures—hypothesis H and hypothesis A. *Journal of Gerontology*, 28: 484–490.
- Snedecor, G. W., & Cochran, W. G. 1980. *Statistical methods* (7th ed.). Ames, Iowa: Iowa State University Press.
- Sofer, C. 1970. *Men in mid-career: A study of British managers and technical specialists*. Cambridge, U.K.: Cambridge University Press.
- Stewman, S., & Konda, S. L. 1983. Careers and organizational labor markets: Demographic models of organizational behavior. *American Journal of Sociology*, 88: 637–685.
- Tversky, A., & Kahneman, D. 1973. Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5: 207–232.
- Tversky, A., & Kahneman, D. 1974. Judgment under uncertainty: Heuristics and biases. *Science*, 185: 1124–1131.
- Vaillant, G. E. 1977. *Adaptation to life*. Boston: Little, Brown & Co.
- Whyte, W. H., Jr. 1956. *The organization man*. New York: Simon & Schuster.

Barbara S. Lawrence earned her Ph.D. degree at the Massachusetts Institute of Technology. She is an assistant professor in the Anderson Graduate School of Management at the University of California, Los Angeles. Her current research interests include age effects in organizations, the science of social science, career theory, and human resource management.