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THE GENESIS OF TOP MANAGEMENT TEAM DIVERSITY: SELECTIVE TURNOVER AMONG TOP MANAGEMENT TEAMS IN DUTCH NEWSPAPER PUBLISHING, 1970–94

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We propose that executive team power strengthens a cycle of "homosocial reproduction" that is interrupted only when teams face such compelling needs for diversity as poor organizational performance, high corporate diversification, and tough market competition. Hypothesis tests in data from major Dutch newspaper publishers over 25 years did not support many of our benchmark expectations. Apparently, top management teams tend to close ranks when environmental complexity and pressure increase. Explanations and new research avenues are discussed.

In 1983, Jeffrey Pfeffer wrote his seminal article on organizational demographics. In this paper, Pfeffer argued that organization scientists focused too much on unobservable psychological states, such as perceptions and attitudes, in explaining organizational phenomena and did not take much notice of more basic, structural, antecedent factors, such as the objective demography of organizations. Organizational demography refers to the distribution of organization members along any demographic trait or any set of demographic traits (Haveman, 1995; Pfeffer, 1983). The purpose of Pfeffer's statement was to encourage the development of hypotheses concerning both the causes and consequences of variations in organizational demography. A year later, Donald Hambrick and Phyllis Mason (1984) made a similar plea for studying organizational demographics at the level of the dominant coalitions or upper echelons of organizations (that is, their top management teams). They argued that, as an organization is a reflection of its top managers, studying the consequences of differences in the composition of top management teams is a worthwhile endeavor. Both papers have been very influential in the organization sciences domain. Their importance resides in how they put the individual back into organization theory, which had become predominantly macro (Sørensen, 2000). On the innovative character of this approach, Carroll and Harrison commented the following: "Organizational demography is one of a few genuinely new and exciting areas of organizations research. It is also an area with potential to unify the increasingly disparate micro and macro ends of the field" (1998: 664).

Both papers inspired many scholars to research the proposed links empirically. When one reviews these empirical studies, at least two conclusions can be drawn. First, although scholars have examined many dimensions of organizational demography (for instance, the average and the spread of tenure, gender, ethnic background, and age in teams and organizations), the unevenness—or, the *heterogeneity*—in the distribution of length of ser-

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vice, or *tenure,* is the demographic variable of primary interest (Carroll & Harrison, 1998). Second, the overwhelming majority of studies have focused on the *consequences* of demography for organizational outcomes such as innovation, diversification, adaptiveness, and performance (for a review, see Williams and O'Reilly [1998]). We, however, agree with Lawrence (1997), who proposed that in order to fully understand the consequences of organizational demography it is essential to also probe the *antecedents* of demographic diversity, or the lack thereof (see also Haveman, 1995; Mittman, 1992). Pfeffer underscored this need to look at demographics in a dynamic way as follows: "Because organizational demography is determined by the past history of the social composition of net flows into it . . . understanding organizational demography requires understanding demographic composition at some initial point and the subsequent flows into and out of the organization" (1997: 87). In other words, to understand the origins and consequences of specific differences in the demographic distributions of organizations, it is essential to study their metabolisms—that is, the entry and exit of (characteristics of) individuals into and out of these social aggregates.

This metabolic perspective is important because it has the potential to offer new insights into the classical tension in the social sciences between the individual human being and the aggregate social system. Specifically, studying the demographic metabolism of social organizations may help to explain the dynamics of the aggregate entity as well. On the one hand, it is essential for scholars' understanding of social change because replacing outgoing members with different newcomers is one important way for formal organizations to adapt their courses of action (Haveman, 1995; Schneider, Smith, Taylor, & Fleenor, 1998). On the other hand, the same replacement process may rather be geared toward the stability of a social system and to the perpetuation rather than adaptation of its behavior. Such stability happens when organizations form demographic "clone" of themselves through strict reproduction of existing characteristics through hiring, firing, socialization, and promotion policies. In this case, outgoing members are replaced by relatively identical newcomers. It follows that demographic research, by linking individual behavior with system dynamics, helps to build bridges between different levels of analysis.

The specific object of our present research effort was to see how demographic metabolism causes top management teams to become either homogeneous or heterogeneous. For this purpose, we analyzed the characteristics of managers entering into and exiting from top management teams vis-à-vis those of incumbent managers. In so doing, this article reports the results from one of the few studies that we know of in which the dynamics of demographic heterogeneity were studied systematically with a simultaneous focus on its dual constituents: the characteristics of those who *enter* into and those who *exit* from a focal top management team (see Keck & Tushman [1993] for another example of such a study). We claim that, although top management teams tend to reproduce themselves in terms of demographic characteristics, a conflicting force simultaneously operates that might pull teams toward diversity. In this way, the current work is a first answer to Ruef, Aldrich, and Carter's (2003) plea for longitudinal studies of the evolution of management team composition. In their cross-sectional study of 816 U.S. entrepreneurial founding teams, Ruef and coauthors (2003) found strong support for the "homophily" hypothesis (McPherson, Smith-Lovin, & Cook, 2001), which states that new members are selected into teams on the basis of the similarity of their demographic characteristics, such as ethnicity and gender, to those of past and/or existing team members.

As a starting point, we used Schneider's (1987) attraction-selection-attrition (ASA) theory as the theoretical basis for our hypotheses. The ASA model is an evolutionary theory of group dynamics that nicely complements the general homophily argument by focusing on the micro processes of entry into and exit from teams. The ASA theory provides an important account of how top management teams, through so-called team-level cycles of attraction, selection, and attrition, generally gravitate toward homogeneity. However, rational-economic arguments suggested to us that countervailing forces at an organizational level might well undermine ASA cycles. Specifically, we theorized that the cycle of homosocial reproduction cannot be sustained when top management teams face a compelling need for diversity. We posited that such is the case when organizational performance is poor, corporate diversification is high, and market competition is tough. So, we focused on factors both inside and outside organizations to understand the demographic distribution of top management teams, as advocated by Keck and Tushman (1993), Lawrence (1997), and Ruef et al. (2003). Finally, we introduced an executive team's power as a variable that might moderate the need-for-diversity effect. We tested our hypotheses using data on the dynamics of the composition of the top executive management teams of the five largest newspaper publishers in The Netherlands over the period 1970–94.

In advance, it is useful to point to an important methodological problem that precludes studying selective entry into versus exit from a team in the same way. Specifically, although our executive management team data allowed us to observe the team from which an individual left, we could not observe the pool of candidates from which an entrant was chosen into a team. Therefore, with regard to entry, on the one hand, we could only hypothesize on the result of a selective entry process under different predefined circumstances, as an indirect indication of the nature of the underlying selection process. With regard to exit, on the other hand, we could hypothesize directly on selective exit as we did observe which individuals were "selected out" of teams and which were not. For these reasons, we specified separate hypotheses for selective entry and selective exit.

THEORETICAL BACKGROUND

Forces Pulling toward Homogeneity

Theoretical exercises on the dynamics of organizational demography have emphasized the tendency of a social aggregate to reproduce its own demographic composition. Pfeffer (1997: 99), for instance, observed that "demography has a tendency to perpetuate itself—to use Kanter's (1977) apt phrase, to exhibit 'homosocial reproduction.'" The attraction-selection-attrition model of Benjamin Schneider (1987) provides an interesting account of the dynamics of homosocial reproduction. The original model focuses on "soft" characteristics, such as personalities and attitudes. The ASA model outlines the forces operating to restrict organizational diversity in members' characteristics, producing so-called trait homogenization (Schaubroeck, Ganster, & Jones, 1998). That is, organizations move toward member homogeneity because individuals are attracted to, selected by, and stay with organizations that suit their personality characteristics (Schaubroeck et al., 1998). This homogenization tendency, which Barnard (1938) had already suggested, is in line with evidence from the vocational psychology, organizational choice, turnover, and human resource management literatures. Indeed, recent empirical findings support the ASA model's central proposition that organizations are relatively homogeneous with respect to the personalities of their members (Schaubroeck et al., 1998; Schneider et al., 1998). For instance, Schneider and his colleagues (1998) used the Myers-Briggs Type Indicator to assess the personality of almost 13,000 managers from 142 organizations. Their key finding was that a substantial part of personality variation can be explained by organizational membership. Unfortunately, the empirical research on the ASA model to date has not shed light on the exact causes of the observed homogeneity. Is it the psychological need to be similar to others with whom one works that drives the ASA process, or is it generated by situational pressures, or both (Lawrence, 1997)?

Important for the present study is that this stream of research suggests "that employers tend to replace organizational members with people who are similar to themselves" (Lawrence, 1997: 18), leading to homogeneity especially at the upper management level of organizations (Schneider et al., 1998). This view extends to include *demographic* similarity. Westphal and Zajac (1995) and Zajac and Westphal (1996) provided at least three plausible reasons for a tendency toward homogeneity. First, there is ample evidence that similarity on a salient dimension enhances interpersonal attraction. This is known as the similarity-attraction principle. Second, according to self-categorization theory, people derive higher self-esteem and strengthened self-identity from perceived group membership. That is, "Given that demographic similarity provides a salient basis for group membership, people may favor (e.g., prefer to hire) demographically similar individuals. Alternatively, people may seek to construct or maintain homogeneous groups in order to increase the salience of group membership, thus maintaining or enhancing their self-esteem and identity" (Westphal & Zajac, 1995: 61). Third, apart from these two social-psychological mechanisms, there are also sociopolitical reasons why top managers might prefer to work with demographically similar individuals. Hiring and promoting people who are similar to oneself on, for instance, functional background or strategic preferences helps to perpetuate and institutionalize managerial power. In addition, similarity facilitates communication within a team and diminishes the likelihood of conflict and power struggles (Pfeffer, 1983; Boone, van Olffen, & van Witteloostuijn, 1998). A final reason for recruiting like individuals may be to fulfill a psychological need for stability and to reduce behavioral uncertainty in a work environment. Hiring similar others enhances the perceived predictability of the newcomers' behavior and thus, the predictability of the working environment.

So the argument of the ASA model is that top executive management teams tend to selectively hire and fire to the effect that their own demographic characteristics are strengthened, thus promoting their social reproduction. This argument is similar to the one proposed in the context of the so-called homophily mechanism (McPherson et al., 2001), which has been studied for such features as ethnicity (Aldrich & Waldinger, 1990) and gender (Kalleberg, Knoke, Marsden, & Spaeth, 1996). Ruef and colleagues (2003) provided evidence that homophily dominated economic mechanisms favoring diversity in ethnicity, gender, and occupation in 816 founding teams of U.S. entrepreneurial ventures. As their study was cross-sectional, focusing on team formation, they could not observe the dynamics of team evolution over time. In our context of selective top manager turnover, we derived hypotheses on the top executive management team entry and exit process. For exit, we compared each and every team member's demographic similarity to the rest of his or her team and thus studied similarity's impact on the probability of exit. In other words, we could directly observe the phenomenon of interest. Concerning the exit process, this ASA argument suggests that individuals who do not fit a team tend to leave or "be relieved," as has consistently been shown in the research on turnover (Carroll & Harrison, 1998; Schneider et al., 1998). That is,

Hypothesis 1. The higher an individual executive's demographic dissimilarity to a top executive management team, the higher her or his likelihood of exit from the team.

We refrained from formulating Hypothesis 1's mirror image for entry, because we could not observe the pool of candidates from which entrants are selected. What we could do, however, was to study selective entry under different circumstances. Westphal and Zajac (1995) applied ideas similar to ours to board of directors selection, adding the role of power. They hypothesized that the extent to which incumbent CEOs can realize their preference for demographically similar new directors depends on the power of the CEOs vis-à-vis the boards. Westphal and Zajac tested several hypotheses on a sample of 413 *Fortune/Forbes* 500 companies from 1986 to 1991. Supporting their arguments, they found that: "(1) when incumbent CEOs are more powerful than their boards of directors, new directors are likely to be demographically similar to the firm's CEO; (2) when boards are more powerful than their CEOs, new directors resemble the existing board; and (3) greater demographic similarity between the CEO and the board is likely to result in more generous CEO compensation contracts" (Westphal & Zajac, 1995: 60).

These ideas can also be applied in the context of the present study, the selection of new executive managers into top management teams. Following ASA logic, we hypothesized that top management teams reproduce their own demographic characteristics. However, a first prerequisite of any type of reproduction is a top teams' power to reproduce—that is, to actually decide which candidates to hire. We therefore expected that the extent to which top executive management teams select demographically similar newcomers increases with their organizational power, which depends on their power vis-à-vis their boards of directors. Thus,

Hypothesis 2. The higher top executive management team power vis-à-vis board of directors power, the greater the demographic similarity of entrant to incumbent executives.

Similarly, a powerful team will seek to "facilitate" the exclusion of dissimilar members. As a result, team power should positively moderate the impact of demographic distance on the likelihood of team exit, which gives

Hypothesis 3. The higher top executive management team power vis-à-vis board of directors power, the higher the likelihood that a demographically dissimilar executive will exit a team.

Forces Pulling toward Heterogeneity

To date, to our knowledge, there is no direct statistical evidence concerning the consequences of homosocial reproduction for organizational effectiveness. However, Schneider and his coauthors stated the following:

> On the issue of organizational effectiveness, however, threads from the more qualitative results of extensive case studies presented earlier by Argyris (1958) and later by Schein (1992), combined with research in the groups literature (Guzzo and Shea, 1992; Herriot and Pemberton, 1995), create a fabric suggestive of the potential importance of the modal personality construct. In all of the citations, heterogeneity was found to yield increased adaptability and flexibility in dealing with difficult tasks involving demands for creativity and innovation. In other words, as predicted by Schneider (1987), it can be inferred that (a) organizations tend toward homogeneity of personality and (b) homogeneity of personality is not beneficial to long-term organizational effectiveness. (1998: 468)

Why is organizational or team heterogeneity potentially so important for organizational effectiveness? Small group research contains some indications. Many social and cognitive psychological studies have discussed the effects of group variety on group behavior and outcomes (Boone et al., 1998). According to the notion of requisite variety (Weick, 1979), within-team diversity must be matched with the complexity and nonroutineness of a decision environment for a team to perform well (Milliken & Martins, 1996). When a group faces a complex and nonroutine decision environment, its performance may benefit from having a wide range of viewpoints that it can discuss and evaluate critically to arrive at appropriate solutions. High team diversity is likely to facilitate the production of such a wide spectrum of perspectives. As people are the carriers of cognitive capacities and as there are limits to the cognitive complexity any single individual can handle (Cyert & March, 1963), each team member can provide only part of the diversity needed to solve a problem. Varying individual cognitive resources must therefore be pooled to form diverse teams that can solve complex problems. In this respect, demographic heterogeneity can be regarded as a "proxy for cognitive heterogeneity, representing innovativeness, problem-solving abilities, creativity, diversity of information sources and perspectives, openness to change and willingness to challenge and be challenged" (Finkelstein & Hambrick, 1996: 125). Empirical research indeed has revealed that in solving complex and nonroutine problems, groups are more effective when composed of members with a variety of skills, knowledge, abilities, and perspectives (Shaw, 1976). This advantage is particularly evident in innovative activity (Bantel & Jackson, 1989).

The research noted above suggests that in complex and dynamic environments there are compelling rational-economic reasons for organizations to interrupt the homogenization processes caused by ASA cycles. As Schaubroeck and his colleagues (1998) put it, the need for diversity and homogenization are in continuous conflict. We argue that as long as the process of internal team homogenization does not hamper favorable external environmental selection outcomes, homosocial reproduction is sustainable. We therefore expect that the interruption only occurs when the need for diversity is very compelling. In their study of top management team dynamics, and environmental and organizational context, Keck and Tushman (1993) reported evidence that executive turnover that increases top team heterogeneity is particularly prominent in turbulent circumstances. In their study of 104 U.S. cement producers in the 1900–86 period, they found that top management team entries and exits were positively associated with organizational reorientation and technological change, producing increased functional and tenure heterogeneity. In the current article, we contend that the need for team diversity is higher under any of the following three circumstances: low performance, high diversification, and tough competition.

First, concerning *organizational performance,* it is clear that the urge to try something new and to change the course of action increases when performance is low. This observation follows immediately from the literature on organizational decline and turnaround strategies (van Witteloostuijn, 1998) and from the organizational change and learning literatures at large (Greve, 2003). For example, Boeker and Goodstein indeed observed in a sample of 290 hospitals that "hospitals change the composition of their board to adapt to changing environmental contingencies but that the hospitals' performance moderates the rate of their response, with poorer performers being more willing to initiate changes in board composition than strong performers" (1991: 805). Similarly, as team diversity is assumed to be associated with willingness and openness to change (Finkelstein & Hambrick, 1996), we expect that poor performance, which triggers a need for change, will stimulate hiring more dissimilar managers and/or preventing dissimilar managers from leaving a team, partly because team reproduction is harder to sustain in the face of resistance from important organizational stakeholders if performance is low.

Second, relating to *diversification strategies,* the general idea is that complex strategies require a broader pool of managerial knowledge and capabilities than relatively simple strategies. This line of argument is reflected in the finding in small group research that compositional diversity particularly enhances team performance if groups face complex and nonroutine tasks (Jehn, Northcraft, & Neale, 1999; Pelled, Eisenhardt, & Xin, 1999). Therefore, we expect that companies that diversify away from their core businesses need to increase top executive management team diversity to successfully implement the diversification strategy, per the principle of requisite variety (Wiersema & Bantel, 1992).

Third, regarding *competitive intensity,* we expect that competition for scarce resources will increase a team's need for diversity. In this context, it is useful to refer to evolutionary biology, which describes several mechanisms that increase the genetic variation of a biological species. One such mechanism is "gene flow" (Ricklefs, 1979; Templeton, 2002). Gene flow sometimes occurs when new organisms enter a population by migration from another population. If they mate within the population, the genetic variation of the gene pool of the species is increased. As this outbreeding increases variation, it tends to increase the adaptive capacity and thus the survival chances of the species. This mechanism is especially important when the competitive pressure for resources is high. Analogously, we expect that top management teams tend to "outbreed" and increase their "genetic" variation (that is, their diversity) when competition is tough in order to preserve or increase the survival chances of their organizations. Researchers in the area of organizational learning have explored similar arguments, suggesting a positive correlation between intraorganizational ecological processes of variation and selection on the one hand and organizational learning performance on the other hand, particularly in turbulent environments (Aldrich, 1999; Burgelman, 1994; Herriot & Pemberton, 1995).

On the basis of this ASA-disruption logic, we can derive hypotheses on one main effect and three interaction effects with regard to top executive management team metabolism. For one, the direct effect of an increased need for diversity on demographic similarity is captured in the next hypothesis for the executive entry case. If entry were the result of a strictly rational-economic process, following the diversity requirements of the specified context, we would expect

Hypothesis 4. The higher the need for diversity owing to poor performance, high diversification, and tough competition, the smaller the demographic similarity of entrant to incumbent top executives.

We hypothesized in the previous section that teams have a "natural" tendency to reproduce themselves in terms of member characteristics, especially when they have the power to do so. From the rational-economic argument it follows, however, that this homosocial reproduction tendency will not be sustainable when external pressures for diversity mount. In other words, the power effect will then be counterbalanced by the rationality argument. With respect to the entry process, this counterbalancing implies that the selective entry of similar members into powerful teams will be blocked when organizations face a high need for diversity. We therefore expect that the need for diversity will moderate the impact of team power on entrant similarity. This argument results in a qualified version of Hypothesis 2:

Hypothesis 5. The higher top executive management team power vis-à-vis board of directors power, the greater the demographic similarity of entrant to incumbent executives. This effect will be less pronounced when the need for diversity is high owing to poor performance, high diversification, and tough competition.

Similarly, concerning the exit process, we expect that the ASA-driven expulsion of the dissimilar from a team will be interrupted on rational-economic grounds if the need for diversity becomes high. In other words, the need-for-diversity variables will moderate the impact of demographic distance on the exit rate. This argument results in a qualified version of Hypothesis 1:

Hypothesis 6. The higher an individual executive's demographic dissimilarity to a top executive management team, the higher her or his likelihood of exit from the team. This effect will be less pronounced when the need for diversity is high owing to poor performance, high diversification, and tough competition.

Hypothesis 3 suggests that powerful teams will seek to facilitate the exclusion of dissimilar members. Again, we expect the need for diversity to produce an external counterforce against this internal reinforcing effect of top executive management team power. This expectation implies the following three-way interaction:

Hypothesis 7. The higher top executive management team power vis-à-vis board of directors power, the higher the likelihood that a demographically dissimilar executive will exit a team. This effect will be less pronounced when the need for diversity is high owing to poor performance, high diversification, and tough competition.

METHODOLOGY

Data

The hypotheses were tested on data collected from the five largest independent newspaper publishers in The Netherlands: NDU/Reed-Elsevier, Perscombinatie, De Telegraaf, VNU, and Wegener. The window of observation covered the 25 years from 1970 through 1994. Data on the independent publisher NDU pertain to 1970–78, when it was taken over by Reed-Elsevier, effectively entering the Dutch newspaper market in 1979. The five companies existing after 1978 are referred to as the Big Five. This sampling frame results in data on 125 (5×25) year-team combinations. We collected both organization-level variables and information on the composition of the top executive management teams and boards of directors. The organization-level (financial) data came from the yearly annual accounts of the companies. The demographic information on members of the executive management teams and boards of directors was obtained from multiple sources, including the annual accounts, membership lists of the NDP (the nation's professional association of newspaper editors), editions of *Who Is Who in The Netherlands?*, and personnel archives of the publishing companies.

In the 1970–94 period, the Dutch newspaper and publishing industries went through a number of important changes that triggered a consolidation process (Boone, Carroll, & van Witteloostuijn, 2002; van Witteloostuijn, Boone, Hendriks, van Iterson, Olie, & van Well, 1998). The two key changes were caused by cultural and technological shifts in the publisher's broader environment, reflecting both a gradual decline in demand for newspapers and a major reshuffling of the market's niche structure. First, the 1960s, 1970s, and 1980s were characterized by the incremental collapse of the "pillarized" structure of Dutch society, in which various societal "pillars" had their own sociopolitical institutions, including political parties, labor unions, and daily newspapers. For example, the Catholic south of The Netherlands was served by the KVP (the Catholic People's Party), the KAB (the Catholic Labor Movement), and *de Volkskrant,* a national, daily Catholic newspaper. With "depillarization," these niche-specific institutions merged into larger, more generic entities (for instance, the broad Christian Democratic Party and the Christian Labor Union), or disappeared altogether (there is no Catholic national daily anymore). Second, the newspaper medium was confronted with increasing competition from alternative media, particularly television. In the 1960s and 1970s, the number of state-owned television channels grew from one to three, and in the 1980s and 1990s the number of commercial television channels exploded from none to more than ten.

By and large, newspaper publishers (at least, the surviving ones) responded in two ways. On the one hand, mergers and acquisitions increased exponentially. Concentration reduced the number of newspaper publishers from dozens to about ten. From 1950 to 1994, the number of independent newspaper publishers declined from 58 to 14. From this process, a dominant Big Five emerged: in 1968, their aggregated market share was approximately 50 percent, and this value increased to about 93 percent in 1995. The organizational form of the multinewspaper publisher transformed from being the exception in the 1960s to the rule in the 1990s. On the other hand, many publishers diversified into adjacent information industries, ranging from books and magazines to radio and television channels. For example, Wegener moved into such activities as special interest magazines, direct marketing services, music retailing, and film, music, radio, television, and video production.

Analyses

We estimated two types of models to test our hypotheses. First, we modeled the entry process by comparing the demographic characteristics of new executive managers with those of their incumbent counterparts. In this case, the dependent variable was a distance measure of the demographic characteristics of entrants vis-à-vis incumbents that was recorded each time an entry was observed (Westphal & Zajac, 1995). Second, we modeled the exit process at the individual manager level of analysis. This was possible because we could observe who did and who did not exit at each moment in time. We used event history or survival analysis to model the exit event as a function of the demographic distance of a focal manager from his or her incumbent colleagues.

The dependent variable in the event history framework was the instantaneous rate of individual exit from a top executive management team, which was defined as

$$r(t) = \lim_{dt \to 0} \frac{\Pr(exit\ t,t + dt \mid no\ exit\ by\ t)}{dt},$$

where r was the hazard rate and $\Pr(exit\ t,t + dt \mid no\ exit\ by\ t)$ was the probability of a manager experiencing exit between $t + dt,$ conditional on being at risk for the event at time t. Note that in the present case t represented a manager's tenure on a team. The specific rate models we estimated were piecewise constant rate exponential models of the general form

$$r(t) = \exp(a_l + \boldsymbol{A}\boldsymbol{a}),$$

where a_l was a constant coefficient associated with the lth tenure period, $\boldsymbol{A}$ was a row vector of covariates, and $\boldsymbol{a}$ was an associated vector of coefficients assumed not to vary across time periods (Blossfeld & Rohwer, 1995; Carroll & Hannan, 2000). The piecewise constant rate model was useful because then no specific assumptions were made about the age (in this case, tenure) dependence of the exit process. Exit rates were specified as "log-linear" functions of the covariates, so estimated failure rates were constrained to be positive. Because the covariates varied over time, we split team histories into yearly intervals and updated covariates at the beginning of each interval. Time-varying covariates imply repeated observations of the same subject. As a result, the assumption of independence of the observations was highly questionable, meaning that conventional estimation of the variance-covariance matrix of the coefficients (and, hence, the standard errors) was not appropriate. Therefore, we evaluated the significance of the estimated coefficients by means of robust standard errors based on the "Huber/White/sandwich" estimator of variance, which takes the clustering of observations on individuals into account. We used STATA (version 6.0) to estimate the vector of parameters by the method of maximum likelihood.

Variables

From board membership lists and additional data gathered on site, we could record all executive team entrances and exits. During the 25-year observation period, the top management teams of the Big Five publishing companies were populated by 66 different executives. The total number of manager-year observations was 458. The average size of a management team was 4.31 executives (s.d. = 1.40). A total of 46 new entrants and 45 exiting managers were recorded. After screening for missing (demographic) values, we had an effective data set for analysis of 40 entrants and 38 exiters. On the average, teams experienced mutation (that is, an exit or an entry) every 1.5 years. The total number of different board members in the same period was 122. The average board size (7.89, s.d. = 2.15) was almost double that of the average executive management team.

The overall demographic distance of entrants and exiters from incumbent team members was assessed by means of four demographic characteristics, one of which was continuous and three of which were categorical. The continuous demographic variable was the executives' *age*. As is conventional (e.g., Westphal & Zajac, 1995), demographic distance, defined as focal individual *i*'s dissimilarity to his or her team on the given variable, was the mean squared Euclidean distance from each incumbent team member *j,* calculated as:

$$\sqrt{\sum (X_i - X_j)^2/(n-1)}\,,$$

where X_i is the age of focal individual *i,* X_j is the age of incumbent *j* with *i* not equal to *j,* and *n* is the number of team members.

The three dichotomous categorical variables were career path, industry experience, and academic status. *Career path* referred to whether an individual had made a career within the sampled company (1) or was attracted from outside the organization (0). *Industry experience* related to more than three years previous experience within the publishing industry (1 = "yes" and 0 = "no"). Finally, *academic status* measured whether the individual possessed a university degree (1) or not (0). To calculate *i*'s similarity to the rest of her or his team on these three characteristics, we used Blau's index, here defined as the squared proportion of team members with the same background. To render this a measure of *dis*similarity as well, we subtracted this squared proportion from 1.

All four distance measures thus assessed an individual's dissimilarity to the rest of a team. These dissimilarities were calculated for all executive management team members, both migrants and incumbents. To obtain a single general proxy for how far an individual was from the rest of the team he or she was entering or leaving, we standardized each of the four distance measures and calculated their average. This measure, *demographic distance,* was the variable used in the analyses reported below. Note that we decided to use an overall distance measure for substantive reasons. Priem, Lyon, and Dess observed this: "Changing a top management's demographic profile typically involves replacing one or more members of the TMT, but such changes do not affect the group uniformly along every demographic dimension. . . . Thus, replacing one or more TMT members likely will not affect all demographic variables uniformly; a new member may increase tenure heterogeneity, decrease age heterogeneity, leave functional heterogeneity unchanged, and so on, within the TMT" (1999: 941). This statement implies that the distance of a manager from other team members can best be assessed by cumulating (uncorrelated) distances along several dimensions. In other words, for our purposes distance was best operationally defined as an additive measure (see also Schaubroeck & Lam, 2002).

According to the so-called strategic contingencies theory of intraorganizational power, members of or groups in an organization derive power from being able to deal with the critical issues that the organization faces (Hambrick, 1981; Hickson, Hinings, Lee, Schneck, & Pennings, 1971). This ability depends on the saliency and extent of the resources an individual or a group can contribute to tackle these contingencies. In a managerial context, it is clear that information and expertise are major sources of power, because both provide decision makers with the necessary resources for sound decision making. Powell (1990) noted that effective managerial functioning in publishing in particular requires a thorough understanding of the ins and outs of the business. As Powell argued, industry-specific, idiosyncratic knowledge is very important in any type of "relational market." So management teams embodying much organizational and industry know-how are likely to be relatively powerful in the publishing industry.

To assess the know-how of a manager in the present study, we used the proxies of *career path* and *industry experience* as defined above. Executive managers with more than three years of industry experience who had made careers inside their current organizations were likely to be the most knowledgeable. Following Westphal and Zajac (1995), we assumed that power basically derives from asymmetry in the information and knowledge of an executive management team and a board of directors. Therefore, to obtain a measure of relative *executive management team power,* we subtracted the proportion of board members originating from inside a company from the proportion of management team members originating from inside the company. We weighted these proportions with average top team and board tenure, respectively, as one can assume that the impact of information asymmetry increases when the average management team tenure is higher than average board tenure. The same procedure was followed with regard to industry experience, and we standardized and summed the two measures to obtain one proxy for the executive management teams' relative power.

Organizational performance was measured as yearly gross return on sales (ROS) and as the difference in ROS from year $t - 1$ to year t. In this way, we included the effect of both the absolute level of and the change in a firm's performance. To capture *firm diversification,* we calculated a Herfindahl index (that is, the sum of squared proportions) on the spread of firm turnover in ten different activities, particularly newspapers, journals, books, advertising circulars, professional journals, printing businesses, sales, databases, television, and scientific publications. Heavy reliance on a few activities (low diversification) would raise the Herfindahl index. By subtracting this index from 1, we obtained a positive measure of diversification.[1] For our final independent variable, firm-level *competitive intensity,* we subtracted each firm's yearly net turnover growth rate from those of its four Big Five competitors combined. The idea underlying this calculation was that crowding occurs, and competitive pressures are most severely felt, when a focal company's growth lags behind that of its major competitors.[2]

Finally, several control variables were used. Three dummy variables corrected for the aftermath of three major consolidation events: the acquisition of NDU by Elsevier in 1978, the acquisition of Audet by VNU in 1988, and the acquisition of Tijl by Wegener in 1988. *Firm size* was measured as total capital invested (that is, total assets). As we intended to explain shifts in executive management team heterogeneity resulting from entry into and exit from teams, we deemed it important to control for ex ante average *team heterogeneity*—heterogeneity in the year before an event took place (that is, $t - 1$). By doing so, we assured that the initial conditions with respect to team composition were comparable across teams. The team heterogeneity measure was an average index based on the standardized dispersion values of the same four demographic variables used to measure demographic distance: team standard deviation of age, and Herfindahl indexes of team industry experience, career path, and academic status. In the exit analyses, we controlled for an individual's *age* and *tenure* on a team. Finally, we also included a dummy variable to indicate whether the member was the *CEO* or not.

RESULTS

Table 1 reports the averages and standard deviations of the main variables per publisher for the entire 25-year period, as well as for five 5-year periods. Publishers are ordered by decreasing size.

Comparing the five 5-year periods reveals a remarkable stability over time. All publishers experienced a steady rise in total assets, and VNU remained the biggest, challenged only by NDU/Elsevier from the late 1970s onward. Long-run performance (ROS) figures among the Big Five were around 10 percent, with De Telegraaf occupying a sustainable leadership position. Only one publisher recorded a loss during a single year (Wegener, in 1982). The degree of diversification was generally rather high, being either maintained (Wegener and VNU) or developed (NDU/Elsevier and Telegraaf) over time. Only one publisher, Perscombinatie, stuck quite "close to its

[1] Note that our diversification measure does not weight for the relatedness of the ten activities. We tried to develop a weighting scheme on the basis of assessments by experts. However, both intra- and interrater reliabilities of the extent of relatedness of the different activities turned out to be extremely low. Therefore, we decided to use a simple Herfindahl index.

[2] For an alternative proxy, we computed a niche overlap measure, calculated as a weighted average of the per niche measure of competition in relative sales terms. We decided not to report the results for this competitive intensity measure, as it reveals a negative correlation with the diversification variable above the .9 level. In addition, it is likely that the relative growth variable used in the main text is much more clearly linked to a top management team's perception of competition than the fine-grained niche overlap one, as the former provides direct feedback about competitive positions in the marketplace in the form of an easy-to-understand summary statistic.

TABLE 1
Descriptive Statistics of the Big Five Dutch Publishers in Five-Year Periods[a]

Variable and Publisher	1970–74	1975–79	1980–84	1985–89	1990–94	Entire period: 1970–94
Firm size[b]						
VNU	457,442 (81,603)	547,022 (79,598)	650,410 (52,707)	715,534 (206,171)	1,133,761 (88,064)	700,834 (260,572)
NDU/Elsevier	146,171 (44,135)	265,678 (115,499)	509,671 (36,686)	605,791 (108,504)	1,141,845 (155,625)[d]	480,960 (326,591)
Telegraaf	56,368 (17,805)	131,256 (31,350)	240,404 (56,857)	436,066 (82,303)	671,775 (69,847)	307,174 (233,097)
Wegener	26,926 (6,894)	53,906 (17,907)	169,706 (39,536)	229,902 (43,892)	418,811 (96,623)	179,850 (151,047)
Perscombinatie	60,769 (7,143)	66,298 (3,467)	75,670 (5,493)	123,925 (14,746)	190,532 (35,336)	103,439 (52,487)
Performance						
VNU	.10 (.01)	.10 (.02)	.08 (.01)	.12 (.01)	.13 (.01)	.10 (.02)
NDU/Elsevier	.06 (.01)	.08 (.02)	.07 (.02)	.15 (.02)	.17 (.01)[d]	.10 (.05)
Telegraaf	.19 (.05)	.17 (.01)	.17 (.02)	.16 (.02)	.18 (.01)	.17 (.03)
Wegener	.12 (.02)	.08 (.02)	.05 (.04)	.08 (.03)	.12 (.01)	.09 (.04)
Perscombinatie	.08 (.01)	.05 (.02)	.03 (.03)	.09 (.01)	.11 (.01)	.07 (.03)
Change in performance						
VNU	−.01 (.01)[c]	.00 (.01)	.00 (.02)	.01 (.01)	.00 (.01)	.00 (.01)
NDU/Elsevier	.00 (.01)[c]	.00 (.03)	.01 (.02)	.01 (.02)	.01 (.01)[d]	.00 (.02)
Telegraaf	.01 (.06)[c]	−.01 (.01)	.00 (.03)	.01 (.01)	.00 (.01)	.00 (.03)
Wegener	−.01 (.03)[c]	.00 (.02)	−.01 (.07)	.01 (.04)	.00 (.01)	.00 (.04)
Perscombinatie	−.01 (.02)[c]	.00 (.02)	.00 (.04)	.00 (.01)	.00 (.01)	.00 (.02)
Diversification						
VNU	.67 (.01)	.67 (.01)	.73 (.03)	.80 (.03)	.82 (.03)	.74 (.07)
NDU/Elsevier	.48 (.01)	.56 (.14)	.80 (.01)	.74 (.04)	.68 (.02)[d]	.65 (.14)
Telegraaf	.20 (.07)	.43 (.05)	.50 (.00)	.50 (.00)	.52 (.02)	.43 (.13)
Wegener	.63 (.00)	.63 (.00)	.63 (.00)	.63 (.01)	.65 (.04)	.63 (.02)
Perscombinatie	.27 (.04)	.12 (.01)	.14 (.02)	.13 (.02)	.16 (.19)	.16 (.10)
Competitive intensity						
VNU	.09 (.09)[c]	.16 (.22)	−.01 (.02)	−.05 (.11)	.07 (.12)	.05 (.14)
NDU/Elsevier	−.07 (.12)[c]	−.31 (.67)	.01 (.02)	.03 (.12)	.00 (.10)	−.07 (.32)
Telegraaf	−.07 (.11)[c]	.02 (.21)	.01 (.07)	.04 (.04)	−.03 (.19)	.00 (.13)
Wegener	−.18 (.20)[c]	−.02 (.16)	−.06 (.21)	−.05 (.11)	−.11 (.21)	−.08 (.17)
Perscombinatie	.02 (.05)[c]	.04 (.19)	.03 (.04)	.04 (.07)	−.11 (.32)	.00 (.17)

[a] Standard deviations are in parentheses.
[b] Total assets are in thousands of Dutch guilders.
[c] Starting year (1970) lost in calculating changes.
[d] Excludes 1993 and 1994 (missing data).

knitting." As the yearly turnover growth figures varied strongly over time, so did the experienced gap with major competitors, labeled "competitive intensity" in the tables. Two publishers managed to be, on the average, on a par with the competition; two were ahead; and one (VNU) lagged behind. Apparently, VNU, although the largest, had difficulty maintaining a turnover growth rate comparable to its major competitors'. All four competitors of NDU/Elsevier experienced a maximum level of competitive intensity in 1979, the year of the NDU/Elsevier acquisition, as makes logical sense.

The 40 entrants had an average age of 48 years (s.d. = 6.7). Of these executives, 75 percent had industry experience, 60 percent held academic degrees, and 58 percent had been promoted from within their companies. The average age of the 38 exiters was 57 (s.d. = 6.6), of whom 84 percent had industry experience, 53 percent held academic degrees, and 79 percent had been promoted internally. Figure 1 depicts the pattern of entries and exits over our 25-year period, and Figure 2 depicts the entrants' and exiters' demographic distance from the teams.

As Figure 1 reveals, the evolution of team mutations does not seem to be associated with any period. Replacement is by far the most common feature of executive team turnover dynamics. Typically, an exiting member is replaced by an entrant in the year of exit or one year later. About 25 percent of the exiting team members were not replaced within two years, leading to a temporary reduction in the affected executive team's size. Of

FIGURE 1
Pattern of Top Team Member Entry and Exit

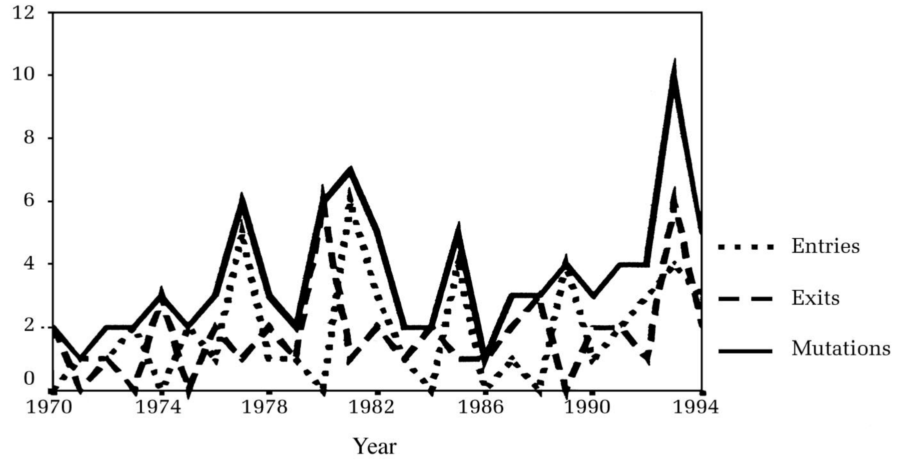
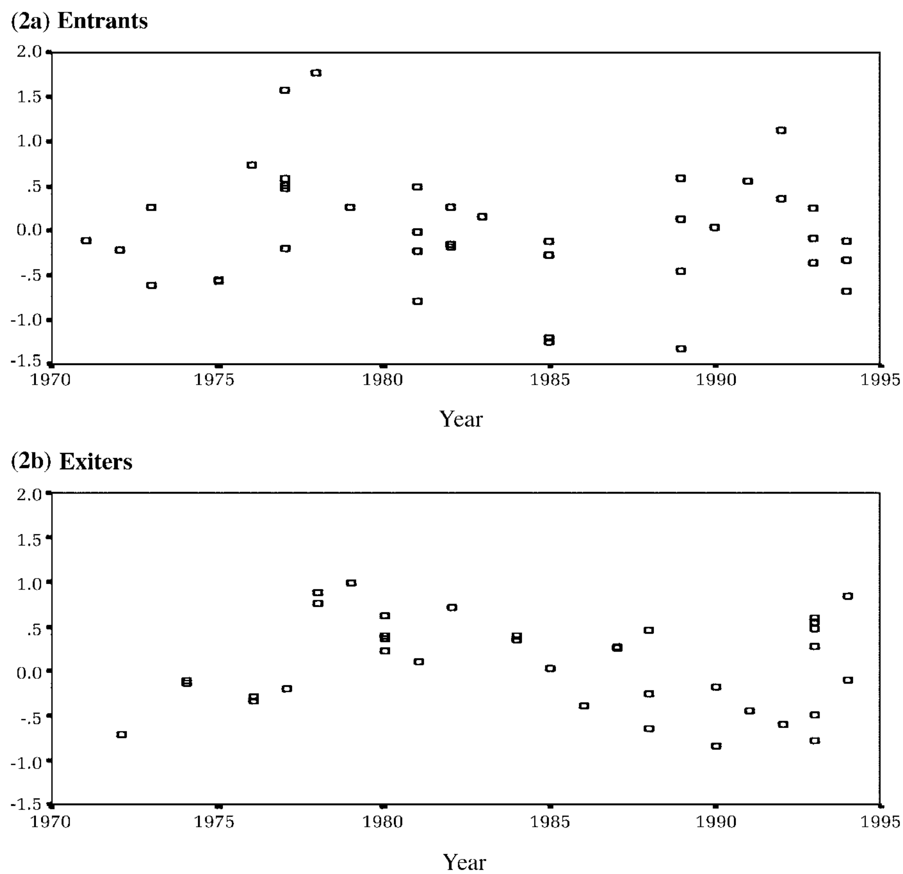


FIGURE 2
Distance from Team[a]



[a] For entrants, $n = 40$; for exiters, $n = 38$.

the entries, 37 percent were not preceded or followed by exit within a symmetric two-year window, producing (temporary) team growth. Figure 2's distance plots show no decreasing or increasing trend in entrants' and exiters' demographic distance from other team members over our 25-year period. That is, there was no systematic tendency over time to select more similar or more dissimilar

TABLE 2
Descriptive Statistics for Entering Top Management Team Members[a]

Variable	Mean	s.d.	Minimum	Maximum	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Demographic distance index	0.00	0.66	−1.34	1.77														
2. Age distance	8.84	5.05	1.00	23.35	.65*													
3. Career path distance	0.68	0.34	0.00	1.00	.63*	.17												
4. Industry experience distance	0.38	0.42	0.00	1.00	.57*	.20	.09											
5. Academic status distance	0.39	0.43	0.00	1.00	.52*	−.02	.28*	.08										
6. Team power	0.29	0.96	−3.89	2.19	−.09	.15	−.09	−.09	−.23									
Need for diversity																		
7. Performance	0.10	0.05	−0.03	0.20	.18	.18	−.08	.27*	.03	.10								
8. Change in performance	−0.00	0.02	−0.07	0.02	.15	.21	.03	.19	−.11	.37*	.61*							
9. Firm diversification	0.56	0.21	0.11	0.84	−.23	−.09	.05	−.19	−.35*	−.20	.28*	.38*						
10. Competitive intensity	−0.01	0.18	−0.69	0.34	−.01	.01	.11	−.04	−.10	.11	−.06	.17	.07					
Control variables																		
11. Firm size[b]	421,244.00	307,292.00	58,987.00	1,142,568.00	−.06	−.09	.10	.12	−.26	−.03	.46*	.37*	.72*	.14				
12. NDU/Elsevier acquisition	0.10	0.30	0.00	1.00	.01	−.11	.16	−.11	.11	−.11	−.01	.14	.33*	−.01	.22			
13. Audet acquisition	0.10	0.30	0.00	1.00	−.16	−.14	.07	.01	−.31*	.08	.21	.17	.39*	.23	.71*	−.11		
14. Tijl acquisition	0.10	0.30	0.00	1.00	−.13	−.05	.01	−.31*	.03	.09	.08	.14	.15	−.14	−.04	−.11	−.11	
15. Team heterogeneity	−0.002	0.50	−0.99	0.92	.20	−.06	−.15	.42*	.32*	.02	.10	.04	−.53*	−.08	−.16	−.00	−.33*	−.17

[a] $n = 40$.
[b] Total assets are in thousands of Dutch guilders.
* $p < .05$
One-tailed test.

top management team members. Again, a period effect appears to be absent.[3]

Below, we first deal with the entry analyses (Hypotheses 2, 4, and 5), and then with the exit ones (Hypotheses 1, 3, 6, and 7). Table 2 summarizes the remaining entry descriptive statistics for entries, and Table 3 shows the results from the entry analyses.

The dependent variable in Table 3 is the demographic distance of an entrant from the team entered.[4] Models 1 and 2 report "main effects," and interactions are added one by one in models 3 to 5. Hypothesis 2 predicts that the similarity of entrants to incumbent team members will be larger in the case of more powerful executive management teams. The sign of the team power variable is negative and significant in the analysis with change in performance, as expected (model 2 of Table 3), but it is negative and insignificant in the regression with absolute performance (model 1). Thus, Hypothesis 2 receives partial support.

As far as Hypothesis 4 is concerned, we expected performance to have a negative effect on entrants' demographic distance from incumbent top management team members, and we expected diversification profile and competitive intensity to produce a positive effect on entrants' distance. As it happens, however, we saw the exact opposite pattern of results with respect to performance change and firm diversification. Deteriorating firm performance seemed to *lower* the entrants' distance from incumbent team members; the coefficient of the performance change variable is significant ($p < .01$) in model 2 of Table 3. A significant, negative effect was found for firm diversification (model 1, $p < .05$; model 2, $p < .001$), indicating that more diversified companies hired more similar entrants. Competitive intensity had an insignificant effect on entrant distance. Overall, we observed a tendency for the executive teams of poorly performing and highly diversified organizations to select "likes," or new team members similar to themselves, so Hypothesis 4 must be rejected.

Finally, Hypothesis 5 predicts an interaction between team power and need for diversity. Here, given the main effect results, we only report the analyses with the change in performance variable.[5] The significance levels of the cross-product terms in models 3–5 in Table 3 indicate that a significant interaction ($p < .05$) emerges only for team power and competitive intensity. This interaction indicates that the negative effect of team power on entrant dissimilarity increases with competitive intensity: The more intense the competition, the more likely powerful teams are to hire likes. Thus, although competitive intensity is assumed to increase the need for diversity, it in fact *strengthens* the negative effect team power has on entrant demographic distance. This finding runs counter to Hypothesis 5, which is therefore also rejected.

To analyze the exit process, we compared exiting team members with the individuals in the executive management teams they left behind (the incumbents) year by year. We thus tried to predict 38 exits in the context of 323 nonexits (incumbents' failure to leave teams), thus examining 361 observations. Table 4 gives the descriptive statistics related to the variables used in the exit analyses reported below, and Table 5 provides the results of estimating the piecewise constant-rate models predicting the hazard of exit.

We split the team tenure of the managers by trial and error into four durations to describe the tenure dependence of the exit rate. The durations were zero to three, three to five, five to ten, and more than ten years. These choices were based on careful observation of the distribution of team exits relative to tenure and on model fit comparisons with models using other tenure durations. Finer splits tended to substantially reduce the goodness-of-fit statistics of the models. Each model shows that the impact of tenure on exit follows an inverted U-shape (Table 5). Apparently, the exit rate first increases and is highest for managers with tenure between three and five years, and then gradually decreases again with increasing tenure. This pattern suggests an extended honeymoon period in the first part of top executive managers' tenure. Note that the hazard of exit is lowest in the first three years of tenure, reflecting a kind of probation period for newcomers. As common sense would suggest, all models show a strong, positive effect of age: the older a manager gets, the higher the likelihood of her or his leaving a team, a relationship partly driven by forced retirement. As far as orga-

[3] This suggests that, apparently, top manager selection was not influenced by shifts in fashion, opinion, or regulation as to the desirability or legitimacy of particular top team features.

[4] For a robustness check, we ran separate analyses for all four distance measures individually, for both entries and exits. By and large, the results are similar to those for the aggregated distance measure. Therefore, we decided to report the latter only. Detailed results are available upon request from the first author.

[5] Specifically, in the models with interaction effects (3 to 5 in Table 3) we decided to include change in profitability in the regressions and not absolute profitability, as the latter's main effect appeared to be insignificant (see model 1 of Table 3).

TABLE 3
Results of OLS Regression Analysis of Entrants' Demographic Distance from Incumbent Team Members[a]

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	0.63	1.68***	1.54**	1.46**	1.57**
	(0.43)	(0.47)	(0.49)	(0.52)	(0.46)
Firm size	1.42 E-06	2.11 E-06**	2.04 E-06**	2.12 E-06**	1.90 E-06**
	(8.84 E-07)	(7.76 E-07)	(7.79 E-07)	(7.77 E-07)	(7.60 E-07)
Audet acquisition[b]	−0.99	−1.24*	−1.17*	−1.25*	−0.95*
	(0.61)	(0.55)	(0.56)	(0.55)	(0.56)
Team heterogeneity	−0.36	−0.71*	−0.56	−0.73*	−0.54*
	(0.32)	(0.32)	(0.35)	(0.32)	(0.32)
Team power	−0.15	−0.34**	−0.22	−0.04	−0.34**
	(0.12)	(0.12)	(0.17)	(0.33)	(0.12)
Performance	3.09				
	(2.30)				
Change in performance		22.14**	23.63**	22.46**	21.81**
		(7.15)	(7.29)	(7.15)	(6.92)
Firm diversification	−2.50*	−4.19***	−3.99***	−3.84**	−3.84**
	(1.10)	(1.13)	(1.15)	(1.19)	(1.11)
Competitive intensity	0.31	−0.01	−0.12	−0.04	−0.27
	(0.58)	(0.53)	(0.54)	(0.53)	(0.53)
Team power × change in performance			3.82		
			(3.73)		
Team power × firm diversification				−0.53	
				(0.53)	
Team power × competitive intensity					−1.42*
					(0.80)
F	1.34	2.71*	2.50*	2.49*	2.93**
R^2	.23	.37	.39	.39	.43
Adjusted R^2	.06	.23	.24	.23	.28

[a] Standard errors are in parentheses. $n = 40$.
[b] The coefficient estimates of the two other consolidation events were insignificant. Given the low number of observations, we therefore dropped these two dummy variables from the analyses reported here.
* $p < .05$
** $p < .01$
*** $p < .001$
One-tailed tests.

nizational characteristics are concerned, Table 5 reveals a systematic, positive impact of organizational size and a strong, negative effect of profitability on the hazard rate.[6] Executive turnover appears to be higher in large organizations. Interestingly, it decreases when publishers are performing well. Apparently, poor organizational performance boosts executive exit, either voluntary or involuntarily.

Hypothesis 1 predicts a higher hazard of exit for those members showing more distance from the executive management teams of which they are members. The positive significance of the demographic distance variable (with $p < .01$ in models 1 and 2 of Table 5) clearly supports this hypothesis. This finding is consistent with previous research in the field (Carroll & Harrison, 1998). Contrary to Hypothesis 3, however, the distance effect does *not* seem to depend upon (that is, is not moderated by) a team's organizational power base (model 3 of Table 5), as the coefficient estimate is insignificant.[7] Hypothesis 6 predicts a rational diminution

[6] Interestingly, it follows from comparing the results in Tables 3 and 5 that the entry selection process seems to be driven more by within-firm changes in performance, whereas absolute, market-level profitability is more important in the exit process. Maybe this is because top management teams have less control over the exit process than over the entry process. That is, exit events include both voluntary and involuntary departure from firms. It is not unlikely that executives pay more attention to market-level, between-firm performance differences when considering switching from one organization to another.

[7] In Table 5's exit analyses, we only include absolute profitability in the models with interaction variables (see columns 3 to 6), because, in the exit case (as opposed to the entry case; see note 5), the main effect of change in profitability is not significant (see model 2 of Table 5).

TABLE 4
Descriptive Statistics for Exiting Top Management Team Members[a]

Variable	Mean	s.d.	Minimum	Maximum	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Individual exit	0.11	0.31	0.00	1.00																		
2. Demographic distance index	−0.01	0.57	−1.20	1.57	.08																	
3. Age distance	8.92	3.69	1.00	21.32	.07	.45*																
4. Career path distance	0.66	0.32	0.00	1.00	.04	.73*	.14*															
5. Industry experience distance	0.35	0.40	0.00	1.00	.02	.59*	.02	.30*														
6. Academic status distance	0.43	0.42	0.00	1.00	.04	.47*	−.14*	.19*	−.01													
7. Team power	0.12	0.70	−3.90	1.46	−.00	−.22*	.11*	.03	−.32*	−.30*												
Need for diversity																						
8. Performance	0.11	0.05	−0.03	0.25	−.06	.04	−.00	−.14*	.06	.17*	.04											
9. Change in performance	0.00	0.02	−0.07	0.10	.03	−.08	−.18*	.02	−.02	−.01	.03	.24*										
10. Firm diversification	0.57	0.21	0.06	0.85	−.03	−.45*	−.06	−.19*	−.26*	−.50*	.08	.06	.00									
11. Competitive intensity	−0.01	0.22	−1.49	0.55	.02	.06	−.10*	.11*	.22*	−.10*	.10*	.04	.18*	−.10*								
Control variables																						
12. Firm size[b]	454.0	305.0	44.00	1,271.00	.03	−.23*	−.16*	−.00	−.06	−.29*	.15*	.27*	.02	.72*	.01							
13. NDU/Elsevier acquisition	0.17	0.38	0.00	1.00	−.03	−.05	−.16*	.08	−.35*	.31*	−.21*	.06	.05	.39*	−.22*	.31*						
14. Audet acquisition	0.07	0.26	0.00	1.00	.04	−.35*	−.17*	−.16*	−.18*	−.28*	.32*	.08	.02	.34*	.06	.57*	−.13*					
15. Tijl acquisition	0.07	0.25	0.00	1.00	.09*	−.15*	−.01	.02	−.24*	−.11*	.10*	.02	.12*	.09*	−.13*	−.07	−.12*	−.08				
16. CEO	0.28	0.45	0.00	1.00	−.03	.05	.03	.02	.02	.05	.02	.01	.05	−.13*	−.00	−.10	−.05	−.01	.01			
17. Team heterogeneity	0.13	0.50	−0.99	1.35	.03	.83*	.30*	.54*	.53*	.47*	−.27*	.02	−.11*	−.42*	−.09	−.24*	.02	−.42*	−.17*	−.00		
18. Team tenure	8.48	5.57	1.00	26.00	.03	.00	−.05	.03	.03	.00	.15*	.19*	.04	−.01	.08	.18*	−.03	.15*	−.11*	.28*	−.00	
19. Age of manager	52.81	6.53	37.00	66.00	.20*	−.13*	−.13*	−.12*	−.15*	.10*	−.04	.19*	.06	.07	−.01	.12*	.25*	.01	−.04	.29*	−.05	.39*

[a] $n = 361$.
[b] Total assets, in millions of Dutch guilders.
* $p < .05$
One-tailed test.

TABLE 5
Results of Exponential Hazard Models of Exits from Top Management Teams[a]

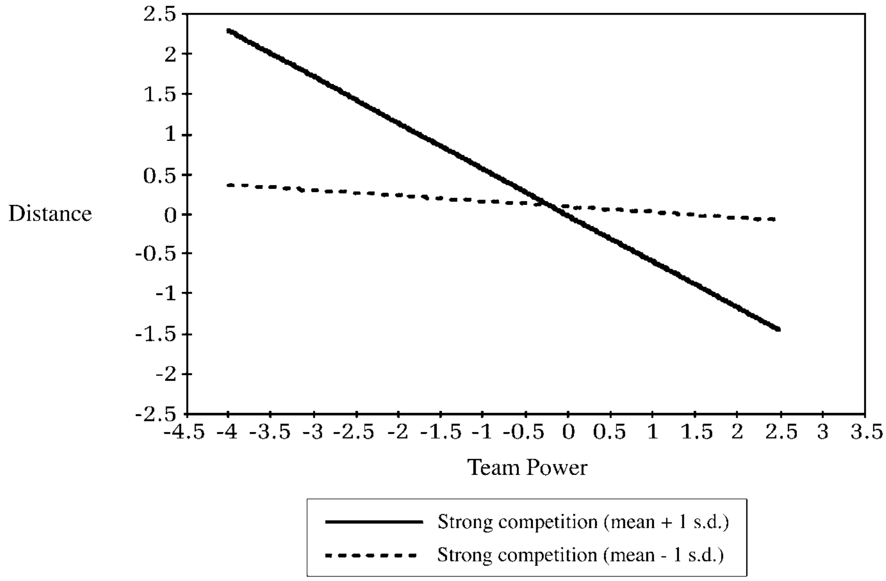
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Team tenure, 0–3 years	−9.82***	−10.06***	−9.75***	−9.53***	−8.58***	−9.81***
	(2.06)	(1.94)	(2.03)	(1.99)	(2.32)	(2.06)
Team tenure, 3–5 years	−8.77***	−9.19***	−8.67***	−8.45***	−7.42***	−8.77***
	(1.99)	(1.93)	(1.97)	(1.94)	(2.22)	(2.00)
Team tenure, 5–10 years	−9.05***	−9.60***	−8.93***	−8.65***	−7.58***	−9.05***
	(2.01)	(1.94)	(1.99)	(1.97)	(2.29)	(2.02)
Team tenure, >10 years	−9.49***	−10.08***	−9.41***	−9.23***	−8.02***	−9.49***
	(2.10)	(2.03)	(2.08)	(2.06)	(2.33)	(2.10)
Age of manager	0.15***	0.15***	0.15***	0.15***	0.15***	0.15***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
CEO	−0.85**	−0.75*	−0.82*	−0.84*	−0.91**	−0.85*
	(0.36)	(0.35)	(0.36)	(0.37)	(0.33)	(0.36)
Firm size	1.20 E-06	3.17 E-07	1.15 E-06	1.41 E-06	1.58 E-06	1.17 E-06
	(9.22 E-07)	(8.86 E-07)	(9.43 E-07)	(9.21 E-07)	(1.01 E-06)	(9.46 E-07)
NDU/Elsevier acquisition	−0.66	−0.57	−0.64	−0.46	−0.39	−0.65
	(0.54)	(0.61)	(0.54)	(0.55)	(0.57)	(0.54)
Audet acquisition	0.71	0.97	0.56	0.95	1.55*	0.69
	(0.70)	(0.78)	(0.71)	(0.69)	(0.81)	(0.71)
Tijl acquisition	1.44**	1.26**	1.41**	1.60***	1.70***	1.47***
	(0.47)	(0.46)	(0.46)	(0.47)	(0.47)	(0.46)
Team heterogeneity	−0.56	−0.76	−0.62	−0.33	−0.37	−0.56
	(0.56)	(0.62)	(0.57)	(0.57)	(0.61)	(0.57)
Demographic distance	1.39**	1.48**	1.45**	0.35	−0.87	1.39**
	(0.52)	(0.52)	(0.51)	(0.86)	(1.23)	(0.52)
Team power	−0.22	−0.16	−0.21	−0.09	−0.18	−0.22
	(0.22)	(0.26)	(0.26)	(0.22)	(0.23)	(0.22)
Performance	−9.99***		−10.37***	−13.40***	−13.79***	−9.90***
	(2.59)		(2.77)	(3.75)	(3.65)	(2.63)
Change in performance		−0.19				
		(9.05)				
Firm diversification	−1.04	−0.94	−1.01	−1.50	−3.04*	−1.02
	(1.22)	(1.25)	(1.24)	(1.25)	(1.78)	(1.22)
Competitive intensity	0.27	0.36	0.35	0.28	0.31	0.40
	(0.76)	(0.75)	(0.75)	(0.72)	(0.79)	(0.83)
Demographic distance × team power			−0.37			
			(0.30)			
Demographic distance × performance				9.03		
				(5.73)		
Demographic distance × firm diversification					3.83*	
					(1.93)	
Demographic distance × competitive intensity						−0.53
						(2.05)
Likelihood-ratio chi-square	410.18***	329.36***	373.58***	340.37***	437.99***	417.38***

[a] Number of managers is 53; number of exits is 38; and number of spells is 361. Standard errors are in parentheses. Significance levels are based on robust standard errors (based on the Huber/White/sandwich estimator of variance) to take into account that the observations within individuals cannot be assumed to be independent.

* $p < .05$
** $p < .01$
*** $p < .001$
One-tailed tests.

of a team's self-reproduction rate when need for diversity is high. However, only one of the three interaction terms is significant (models 4 to 6 in Table 5). The positively significant result for the distance by diversification interaction (with $p <$ .05) runs against Hypothesis 6's prediction. Apparently, top management teams remove dissimilar members in the face of high firm diversification. Thus, the likelihood that dissimilar members will leave a team is not lower if the need for diversity is high. Taken together, these findings led us to reject Hypothesis 6. Finally, we estimated models with three-way interaction effects (Hypothesis 7). As none of these produced significant findings, we do

FIGURE 3
Interactive Effect of Team Power and Competitive Intensity on Entrant Distance from a Team



not report the results here. Clearly, Hypothesis 7 had to be rejected as well.

DISCUSSION

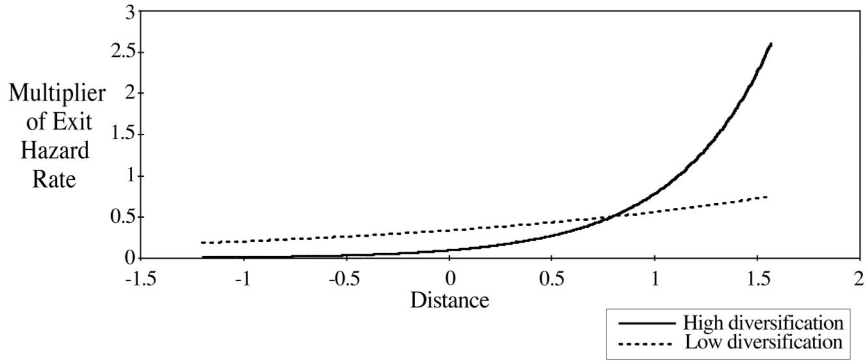
In the present research, we set out to study whether or not executive management teams reproduce their own demographic characteristics through selective hiring and firing. We expected this process to operate provided that (1) the executive teams had enough power vis-à-vis boards of directors to choose new team members and (2) no compelling organizational circumstances rendered it more rational to disrupt this reproduction, forcing the team to hire more *dis*similar members. To explore these issues, we analyzed the entry and exit of individual executives into and from the top management teams of the five biggest Dutch newspaper publishers over 25 years. Several interesting relationships were found, although many of our hypotheses based on rational-economic theory were not supported. In fact, entry and exit into and out of top executive management teams seemed to follow quite another logic, at least in this sample.

Concerning entry, we found a significant tendency for poor performance and high diversification to cause executive teams to select likes, which is exactly the opposite of our prediction. In addition, although more powerful teams do select likes, their tendency to do so is even stronger when competitive intensity increases. Concerning exit, we found that poor performance increases the overall likelihood of executive exit, with dissimilar managers tending to leave first. Interestingly, the likelihood of dissimilar managers' leaving appears to be greater when firm diversification is high, which was not as expected. Figures 3 and 4 depict the interaction effect plots.

Figure 3 shows that entrant distance from a team decreases with executive team power vis-à-vis a board, particularly if competitive intensity is high. In a similar vein, Figure 4 reveals that the multiplier of the exit hazard rate increases with team member distance from a team, particularly if firm diversification is high. Taking these findings together, we conclude that team reproduction and homogenization do indeed occur, especially when organizations face conditions that, at first glance, theoretically require more team diversity. Apparently, top executive management teams tend to close ranks when environmental complexity and pressure increase. Why would teams want to close ranks? At least two explanations can be offered.

A first explanation has a behavioral flavor, suggesting that closing ranks might be a "threat-rigidity" response (Staw, Sandelands, & Dutton, 1981). If this is the case, we need to recast our conceptualization of the rational drivers of need for diversity in terms of circumstances threatening to an executive management *team,* rather than to their organization. That is, low profitability, high competitive pressure, and increased environmental diversity (diversification) might not only increase an executive team's need for diversity, but may at the same time threaten the very survival of the team. All this may cause a team to close ranks by hiring comfort-

FIGURE 4
Interactive Effect of Demographic Distance and Firm Diversification on the Hazard of Exit



ing similar others and dropping dissimilar managers, and thus diminishing uncertainty. Note that this explanation is consistent with research on intergroup conflict, which has shown that people are more likely to cooperate in a social dilemma if it is embedded in the context of intergroup conflict (for a review, see Bornstein and Ben-Yossef [1994]). Our findings suggest, mutatis mutandis, that external (that is, intergroup) competitive pressure not only induces within-group cooperation, but also the closing of ranks. If this explanation holds true, then executive management team metabolism is driven more by behavioral processes at the team level than by rational-economic factors at the organizational level, a formulation that opens up interesting paths for future investigations. For instance, it may be worthwhile to look at what happens to team composition in the face of very disturbing stimuli, such as performance declines and hostile merger bids. Does closing ranks occur there as well and, if so, does it have distinct consequences for the (flexibility of a) team's behavioral repertoire and the outcomes of the performance declines and hostile bids?

A second explanation departs from the central assumption of our model that rational-economic countervailing imperatives are likely to push teams toward increasing their diversity. For instance, we invoked the principle of requisite variety to underpin the benefits of diversity in certain circumstances. It is, however, possible that this assumption leads to underestimation of "process losses" resulting from team heterogeneity. Indeed, there is some evidence that team-level homogeneity rather than heterogeneity may relate positively to performance. As many social-psychological team composition studies have shown, team heterogeneity is associated with so-called process losses in the form of hampered communication and increased conflict. These losses are in turn likely to harm team cohesion and performance (Williams & O'Reilly, 1998). This finding has been replicated in the context of top management teams (e.g., Carpenter, 2002; Carpenter, Sanders, & Gregersen, 2001; Michel & Hambrick, 1992). An argument is that team heterogeneity increases decision-making time and reduces decision-making efficiency, changes that could be particularly harmful in the face of high corporate diversification, poor organizational performance, and tough market competition. In addition, high diversification, poor performance, and tough competition are situations of uncertainty. In the face of uncertainty, a team's performance might benefit from cohesiveness. Network research has shown that in highly uncertain situations, individuals are drawn to those they trust (Mizruchi & Brewster Stearns, 2002), and individuals are more likely to trust others who are similar to themselves (Ibarra, 1992, 1995; Powell, 1990). In a similar vein, much organizational ecology research emphasizes the beneficial performance effect of organizational inertia (Baron, Burton, & Hannan, 1996; Hannan & Freeman, 1984; van Witteloostuijn et al., 2003), which is likely to be positively associated with top team homogeneity.

So, maybe the closing of ranks when performance is low and complexity is high (given high diversification) is not so much irrationally counterproductive, but is rather an appropriate executive team attempt to master the environment of a firm. Closing ranks might increase the likelihood of effective implementation of, for instance, turnaround strategies in the face of low performance and elaborating synergies in the case of high diversification. To check the plausibility of this explanation, we performed an analysis of the impact of average team heterogeneity on the return on sales of our publisher companies. If, indeed, we had overestimated the benefits of executive management team diversity, the relationship between heterogeneity and performance should be negative or at least nonpositive. The team heterogeneity measure is the same as the corresponding control variable used in the analyses presented above. Table 6 reports these results.[8]

The fixed-effects regression estimate clearly reveals a significant, negative effect of team heterogeneity at time $t - 1$ on return on sales at time t ($p < .001$). Thus, diversity does seem to hamper performance, at least in the short run, in the publishing industry in The Netherlands. Closing ranks could therefore be interpreted as an economically rational, though not necessarily a conscious, move in the present setting. Apparently, in this industry the metabolism of executive management teams fits with external selection pressures: replacing unlike team members with like team members (team homogenization) on the one hand and firm profitability on the other hand. Future research could investigate to what extent this is the case in other industries, too, in order to find out in what circumstances the selection logic at the team level is dysfunctional or functional at the organizational level.

[8] Note that we added two additional variables to the model in Table 6 in order to control for the potential disruptive effect of executive change (Amburgey, Kelly, & Barnett, 1993; Barnett & Carroll, 1995): a dummy indicating *CEO turnover* and a variable measuring the *number of team mutations* in a given year.

TABLE 6
Fixed-Effects Estimates of Return on Sales[a]

Variable	
Constant	0.16***
	(0.02)
Team heterogeneity	−0.03***
	(0.01)
CEO turnover	−0.02
	(0.02)
Number of exits and entries	0.00
	(0.00)
NDU/Elsevier acquisition	0.07***
	(0.02)
Audet acquisition	0.01
	(0.02)
Tijl acquisition	0.03*
	(0.02)
Firm size	7.36 E-08***
	(1.88 E-08)
Team power	−0.00
	(0.03)
Firm diversification	−0.17***
	(0.04)
Competitive intensity	0.01
	(0.01)
F	6.81***
R^2	.43

[a] $n = 104$. Independent variables were lagged one period except for the consolidation dummies. Standard errors are in parentheses. A fixed-effects regression analysis with the four demographic distance measures separately included produced similar results (available upon request from the first author).

* $p < .05$
*** $p < .001$

Apart from the extensions mentioned above, the limitations of the current study suggest several other potential avenues for future study. First, one might have a closer look at the potentially important role of the CEO (or the chairperson, in the board case) of a management team to find out *whose* character is being reproduced: that of the "average team member" (as in our study) or that of the CEO? Personal power is likely to play a role in this process, too, as the characteristics of a CEO are more likely to be reproduced when she or he has more power vis-à-vis the rest of the team. We checked for this effect by running our entry and exit analyses with measures of the demographic distance between a firm's CEO and its entrants and exiters. The results (available upon request from the first author) are substantially weaker than those for the team-level measures used above. An explanation may be the consensus-type culture that dominates Dutch society, known as the *polder* model. In this culture, a CEO (and even the country's prime minister!) is traditionally regarded as a primus inter pares whose aim is to guide decision-making processes toward consensus at the executive team level. It would be interesting, though, to compare CEO and team distance effects in different countries and industries. In a similar vein, future work could also focus on the relative importance of the demographic characteristics of board members with respect to the homosocial reproduction of top management teams. Although directors are probably less directly involved in this process, it might be interesting to investigate whether they are indeed more prone to support new executive candidates who share their own demographic characteristics.

Second, one could also explore the extent to which trial-and-error learning influences how team composition changes over time. For example, a team might consider changing its recruitment strategy depending on the organizational performance impact of specific selection decisions made in the past. Such a change would imply action by some kind of performance-feedback learning mechanism (Greve, 2003). One such mechanism involves learning to use turnover as a way to adapt team composition in response to organizational performance feedback. Specifically, one could hypothesize that a poorly (strongly) performing publisher will replace an exiting team member with an executive entrant who is dissimilar from (similar to) the exiter. Conversely, poor performance will provide incentives to a team to "facilitate" the exit of the managers who are most dissimilar from a new entrant. In other words, if learning occurs, in bad times the managers entering an executive team will be different from the departing managers they replace, and managers who are dissimilar from the new entrant will be subsequently pushed out of the team. In good times, however, departing executives will be replaced by "clones," and new entrants will not put extra pressure on executives who are different from these entrants. To explore this idea, we performed two additional analyses. First, we used the entrants' demographic distance from the last previous exiter as the dependent variable in the entrant OLS regression (similar to Table 3). Second, in the exit hazard model (similar to Table 5), we included two additional independent variables: a manager's distance from the last previous entrant, and the interaction of this variable with organizational performance. None of the relevant performance feedback coefficient estimates proved to be significant (results are available upon request from the first author). Hence, in our sample, there seems to be no evidence that recruitment is calibrated with performance-dependent replacement of earlier turnover. Note, however, that the number of replacement events in our sample is very low (36), and that the time lag between replacement events is often quite substantial. Therefore, future research should focus on these learning issues in more detail and in different settings.

A third area open to future investigations focuses on the proper characteristics to study. Until now, the emphasis in the study of executive teams has been on demographic characteristics. Note, however, that these are only surrogate measures of the real underlying constructs of interest, such as personalities and beliefs. It is self-evident that comparable reproduction studies using individual personality or value measures along the lines set out by Schneider and coauthors (1998) would add enormously to understanding of team metabolic processes. After all, proving that personality differences between organizations exist is one (important) thing, but showing the (metabolic) processes by which they arise is another matter. As it seems fair to assume that the make-up of a management team provides an image of the organization it manages as a whole, studies of management team turnover could shed light on such processes. But still, larger-scale investigations into the demographic (or value) metabolism of higher-order social aggregates (like organizations) would offer the true "proof of the pudding" for ASA theory. It would involve painstaking retrospective analyses of personnel records, which is often a problem because of limited data accessibility or even data unavailability. The growth of automated personnel management systems may, however, make such studies feasible in the near future.

Fourth, as mentioned above, in the current study we could not observe the sorting and selection of top management team entrants directly, but only the result thereof. It makes sense, therefore, to look explicitly at the nature of executive selection by referral to the pool of possible candidates in future research. Note that past research in the executive succession domain has examined the similarities between executives and their successors (e.g., Zajac & Westphal, 1996). However, the attention to selection pools has been limited to date. Studies on heirs apparent (Canella & Shen, 2001) as well as of other inside directors (Zhang & Rajagopolan, 2003)—that is, selection pool members—are clear steps in this direction that deserve extensive follow-up. Of course, in-depth research of this type requires access to data on selection pools that may be hard to obtain. In this context, detailed comparative case study research may be attainable in the future, as is Ruef and colleagues' (2003) quantitative methodology of generating the demographic distribution of all possible teams.

Finally, keeping in mind the 1998 study by Schneider and his colleagues, it is not inconceivable that industry differences in the extent, operation, and outcome of selective turnover processes exist as well. In other words, as we already touched upon above, the findings of this study could be sample specific. In this respect, we note that executive management team turnover in the Dutch publishing industry has been low over the past 25 years, resulting in relatively stable teams. It might therefore be interesting to focus on industries with more intensive executive team turnover in future work. In professional industries such as accounting, for instance, the reproduction of core values might be (even) more prominent and important to effectiveness than it is in manufacturing companies. In fact, professionalization processes ("normative isomorphism"; see DiMaggio and Powell [1983]) can be seen as the gradual shaping of a values blueprint that serves as a selective screening device later on. Thus, not only the shaping and perpetuation of certain values, but also the comparative study of their content between industries seems a promising area for research. Whatever the future research settings, we do, however, think that more emphasis should be given to the drawbacks of executive team diversity with respect to effective strategy implementation, at least as far as the short-run performance consequences are concerned. Related to this is the need for future research to include indicators of long-run performance (such as growth, survival, and innovation), as well as short-term profitability measures such as those the present study used. Long-term results are essential to unraveling the complicated relationship between team diversity and organizational effectiveness that exists in the longer run.

CONCLUSION

In this study, we developed and tested a longitudinal model explaining diversity within top executive management teams from the perspective of selective turnover. We drew on two theoretical perspectives to describe the pull toward team homogenization (low diversity) and the push toward team heterogenization (high diversity). Schneider's attraction-selection-attrition (ASA) model was used to explain management teams' natural tendency to "hire likes and fire unlikes" (to reproduce homosocially), provided the teams have the power to do so. Rational-economic theory, however, suggests firm-specific countervailing imperatives pulling executive teams toward heterogeneity as a means for them to cope with environmental requirements. We propose that the cycle of homosocial reproduction only gets interrupted when teams face a compelling need for diversity, particularly when organizational performance is poor, corporate diversification is high, and market competition is tough, but that the reproduction cycle is maintained if a top executive management team is powerful vis-à-vis the board of directors of its firm.

We tested our hypotheses in a population of top executive teams of the Big Five Dutch publishers over a 25-year period. Interestingly, results did not support many of our benchmark expectations. Relating to entry, we found that poor performance and high diversification caused teams to select likes. Moreover, although more powerful teams did tend to select likes, this tendency was stronger when competitive intensity increased. Concerning exit, we found that poor performance increased the overall likelihood of executive exit and that dissimilar managers tended to leave first. Interestingly, the likelihood of dissimilar managers' leaving a firm appeared to be greater when firm diversification was high. We conclude that homosocial reproduction does indeed occur, particularly when organizations face conditions that at first glance appear to require growth in executive team diversity. Apparently, top management teams tend to close ranks when environmental complexity and pressure increase.

The explanations and post hoc analyses we have discussed point to new research avenues. In this concluding section, we want to emphasize two of them. In Dutch publishing, top management team *homogeneity* rather than heterogeneity appears to be positively related to organizational performance measured as short-term profitability. As a result, in our setting, homosocial reproduction does not appear to be dysfunctional, at least so far as short-term firm profitability is concerned. This may not be the case, though, in industries with features that emphasize the need for creativity and innovation, as the latter are known to be stimulated by group heterogeneity; further, this may not be the case when long-run organizational performance is measured. Future research in different industries and with different performance measures might help to clarify matters, particularly by shedding more light on whether and how top management teams eventually learn to select strategies that fit environmental contingencies. The same goes for another finding that may be specific to our context: that the demographic features of a top management team as a whole are reproduced, and not those of a CEO. Our explanation for this result refers to the particular institutional context of Dutch society, which highly values consensus and modesty. By linking our top team story with insights from institutional theory, and by performing empirical research in widely different institutional settings, scholars may deepen their understanding of selective turnover and organizational performance.

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