

**MONASH UNIVERSITY
FACULTY OF BUSINESS AND ECONOMICS**

**GOING UP?: ARE TRAITS AND INFORMAL
SOCIAL PROCESSES IMPORTANT TO
ADVANCING UPWARDS IN MANAGEMENT?**

Phyllis Tharenou

*Working Paper 59/98
September 1998*

ABSTRACT

The aim of this study was to assess how managerial traits and interpersonal support help explain advancement in management up to upper manager, taking into account performance-based factors and formal promotion opportunities. Beyond human capital and promotion opportunities, managerial aspirations and gender similarity added to the explanation of entry into lower management -- where they were most important -- and to advancing to middle manager, and gender similarity added to the explanation of advancing to upper manager.

GOING UP?: ARE TRAITS AND INFORMAL SOCIAL PROCESSES IMPORTANT TO ADVANCING UPWARDS IN MANAGEMENT?

Understanding how advancement arises in management has aroused substantial empirical interest (see Tharenou's, 1997a, review). Despite organization downsizing, delayering and mergers, the proportion of managers in the workforce has increased in recent years compared to subordinates, for example in the U.S. (Gordon, 1996) and Australia (Australian Bureau of Statistics, 1996a). In Australia, the country of this study, management is the fastest growing occupation (Department of Employment, Education, Training and Youth Affairs, 1997). Despite their apparent importance, managers' and executives' performance often appears to be poor (Forbes & Piercy, 1991; Hogan, Curphy, & Hogan, 1994; Levinson, 1994; Sessa & Campbell, 1997), and women worldwide remain underrepresented in management worsening as management levels increase (International Labour Office, 1997). Moreover, the methods for advancement in contemporary times appear to have changed. For example, restructuring has meant that managers use external rather than only internal career paths for employment opportunities (Gordon, 1996; Stroh & Reilly, 1995). For several reasons, then, understanding managerial advancement remains of interest.

Recently, a small proportion of the studies explaining managerial advancement have been longitudinal examinations of stages of advancement (see Tharenou's, 1997a, review). Retrospective studies of the careers of CEOs and top executives have indicated that advancement to the top arises in a series of stages, that specific and often different developmental experiences are needed to advance from one stage to the next, and that early advancement is critical for later advancement (Forbes & Piercy, 1991; Mainiero, 1994; Piercy & Forbes, 1991). Prospective studies have explained the advancement of managers from early career through to mid-career (Hanson Frieze, Olson, & Cain Good, 1990; Murrell, Olson, & Hanson Frieze, 1995; Schneer & Reitman, 1994, 1995, 1997). These studies have indicated that advancement in mid-career may be influenced by similar and by different factors than in early career, especially for women, for example, in terms of lack of interpersonal support and employment gaps. Other studies based on longitudinal assessments have also shown that different factors are important to advance to different levels (Hurley & Sonnenfeld, 1998). Hence, advancing to different levels is likely associated, at least in part, with different factors.

Although it appears needed to explain managerial advancement using longitudinal examinations of the impact of factors at the different stages or transitions, longitudinal studies are few (see Tharenou's, 1997a, review), and fewer still explain how advancement arises to different levels. Hence, this study attempts to address a problem with prior research by assessing the factors linked to advancing to increasingly higher levels in the hierarchy: (a) entry to lower management (i.e., first-line supervisor, lower level manager); (b) advancing to middle manager (the level who supervise first-line supervisors and lower managers); and (c) advancing to upper manager (the level just below executive to whom most middle managers report). The three levels have been identified as those preceding the executive level (Saari, Johnson, McLaughlin, & Zimmerle, 1988), which was not of interest in this study.

Except for gender, in the longitudinal studies of stages of managerial advancement (Forbes & Piercy, 1991; Hanson Frieze et al., 1990; Hurley & Sonnenfeld, 1998; Mainiero, 1994; Murrell et al., 1995; Schneer & Reitman, 1994, 1995, 1997), advancement has been chiefly explained by factors that can be classed as either human capital or opportunity. The factors most measured have been human capital: age, education, work tenure, employment gaps, mobility, and training and development. Also measured has been opportunity: the nature of work assignments (e.g., early first supervisor experiences, high visibility projects, cross-functional assignments, broadening work assignments) and their location (e.g., high power career track departments, corporate office, functional area). Reviews of the empirical evidence support the notion that managerial advancement is explained by human capital, consistently, but only partly so (Tharenou, 1997a), and by opportunity from the nature of work experience and location, but again only partly so (Forbes & Wertheim, 1995).

If these performance- and opportunity- based factors only partly explain advancement in management, what else matters? Traits and social processes appear relevant. Some scholars have argued that credentials are only important to advance into lower management, and that networks are most important to advance to high levels (Adler & Izraeli, 1994). Others have shown that social and political skills gain advancement to high management levels more than does performance (Luthans, 1988). Others have shown that a high drive to advance is related to managerial promotions (Feldman & Weitz, 1991; Judge, Cable, Boudreau, & Bretz, 1995), especially early in one's career (Howard & Bray, 1988). The present study attempts to overcome a problem with past studies of stages of advancement by assessing if traits (e.g., aspirations) and social processes (support, similarity) are related to advancing to increasingly higher levels in the managerial hierarchy (entry into management, advancing to middle manager, and advancing to upper manager), varying in their importance by level.

THEORY, EMPIRICAL EVIDENCE, AND HYPOTHESES

Managerial Traits and Advancing in the Hierarchy

Traits have had weak links to managerial advancement except when directly related, for example, through drive for advancement or fit to the nature of the role (see Tharenou's, 1997a, review). Hence, managerial aspirations (reflecting drive) and masculinity (reflecting fit) were chosen for this study. It is likely that managerial aspirations and masculinity most predict advancement in early career, because individuals implement their self-concepts when choosing occupations and making choices in early career (Super, 1957). Choosing managerial occupations and seeking entry into management allows individuals high in managerial aspirations and masculine/instrumental orientations to implement their self-concepts.

In the most comprehensive longitudinal study of the impact of traits on advancing in managerial level, Howard and Bray (1988) found ambition and advancement motives to be most important of an exhaustive set of traits, and most important in early career. McClelland (1985) has shown that motives drive and direct an individual's behavior toward gratifying his/her goals, and to focusing on cues that will help reach these goals. If an individual aspires to management, s/he is likely to seek a managerial occupation and managerial advancement in early career, as well as to focus on getting the development and support needed to advance. Although ambition has been found related to advancement at high levels, its links were not compared at different levels (Judge et al., 1995; Ritchie, 1994). Howard and Bray (1988) found that managers decreased their high entry-level ambition and aspirations by the eight year to low levels, most aspiring only to be middle managers. Ambition and advancement motivation on entry and in the eight year, more than at 20 years, predicted managerial level.

In a different vein, masculinity - an instrumental, task orientation focused on getting the job done or problem solved (Bem, 1981) - is perceived to "fit" the managerial role. As shown through meta-analysis, masculinity is one of the few traits consistently fitting the perceptions of leaders by others (Lord, De Vader, & Alliger, 1986). Self-assessments of masculinity, though not of androgyny or femininity, have been positively related to the managerial level of lower and middle managers (Chusmir & Koberg, 1991; Fagenson, 1990). Overall, managerial aspirations and masculinity are proposed to be most related to initial advancement in management, retaining links to advance up to mid levels, but to decrease to little effect for advancing to upper levels.

Hypothesis 1: Those who advance in management compared to not advance will be higher in managerial aspirations and masculinity, most for entry to management, retaining importance to advance to middle manager, but decreasing to little effect to advance to upper manager.

Interpersonal Support and Advancing in the Hierarchy

Interpersonal support from mentors and peers and superiors has been shown to influence advancement in management (Ragins & Sundstrom, 1989). Although particular kinds of interpersonal support (similarity, networks, politics) are thought to be especially important to advance to middle and upper manager levels

(e.g., Ferris, Buckley, & Allen, 1992), support is also argued to help advancement in early career, especially through mentors.

According to career tournament theory (Rosenbaum, 1984), winning early career tournaments is needed to advance, with mentors needed to sponsor individuals in early tournaments when competition is high. Kram (1983) showed how mentors help protégés learn the ropes and develop competence when facing new tasks in early career, as well as sponsor them. Indeed, mentor career support has been consistently related to managerial promotions in early career (Dreher & Ash, 1990; Kirchmeyer, 1995; Turban & Dougherty, 1994; Whitely & Coetsier, 1993; Whitely, Dougherty, & Dreher, 1991). Some studies, using bosses rather than mentors, have shown career support to be related to middle managers' promotion (Scandura, 1992; Scandura & Schriesheim, 1994), but no studies have tested the impact of mentors across stages. The major impact of mentors in later career studies may in fact have been from early career. Based on the theoretical arguments for the functions of mentors, mentor support is posed to have its major links early, on initial advancement.

Hypothesis 2: Those who advance in management compared to not advance will have more mentor career support for initial advancement (i.e., entry to management) rather than advancement to higher levels.

Gender differences may emerge in the impact of interpersonal factors as advancement to higher management levels is sought. Another form of career support is encouragement from colleagues and supervisors. Those at higher managerial levels reported more career encouragement, women more so than men (Tharenou, 1995; Tharenou & Conroy, 1994), and career encouragement led more for women than men to the training and development that increased managerial advancement (Tharenou et al., 1994). Women may need career encouragement more than men to advance in management because they have more barriers, barriers shown to worsen from early to mid-career when trying to advance to high levels (Schneer & Reitman, 1994, 1995). However, the link of career encouragement to advancement has not been compared at different levels. Women executives retrospectively reported, more than men, that they needed interpersonal support at all stages of their careers to advance, and not just later (Schor, 1997). Hence, across level tests are needed.

Hypothesis 3: Those who advance in management compared to not advance will have more career encouragement, more for women than men, especially for advancing to higher than lower levels.

Interpersonal support also arises from similarity to the managerial hierarchy. Kanter (1977) argued that managers choose people socially similar to themselves to advance. Because most managers are men, they tend to sponsor other men, resulting in homosocial reproduction. In a like vein, similarity-attraction theory proposes that individuals are attracted to and prefer those similar to themselves (Byrne, 1971), partly because communication and development of trust are easier (Baron & Pfeffer, 1994). The strongest gender differences in advancement from similarity should be at higher than lower levels, because the proportions of men are greater. Moreover, the roles are more uncertain than at lower levels, a condition argued to increase similarity-attraction effects (Baron & Pfeffer, 1994; Kanter, 1977). Women's dissimilarity to male managerial hierarchies is thus likely to be a greater barrier to their advancing to higher than to lower levels. In support, studies of chiefly middle managers through to CEOs have shown that the less 'male' the managerial hierarchy, the greater was women's advancement in management (Konrad & Pfeffer, 1991; Pfeffer, Davis-Blake, & Julius, 1995; Tharenou, 1995; Tharenou & Conroy, 1994). Although Baron and Pfeffer (1994) pointed out that similarity should increase advancement to high levels, they also argued that social cohesion and interdependent work are important at low management levels. This would reduce women's selection for lower management, as well as higher levels, through their dissimilarity. Comparisons across levels are thus needed to test these arguments.

Hypothesis 4: Men who advance in management compared to not advance will be in proportionately more male hierarchies and women will be in proportionately less male hierarchies, especially for advancing to higher than lower levels.

In summary, these theoretical arguments suggest that individuals' drive for, and fit to the role, and their career support and gender similarity to the hierarchy help explain the process of managerial advancement. This study makes a rare contribution by broadening the range of factors assessed in longitudinal studies of stages of managerial advancement to include relevant traits and social support and similarity, whilst taking into account merit- or performance-based factors (human capital) and opportunity (promotion opportunities). The study is unique in examining the link of traits and social processes to advancing to increasingly higher levels in the managerial hierarchy. In the study, advancing is contrasted to staying at the same level or to reducing in level at the transitions of entry to management, advancing to middle manager, and advancing to upper manager. Previous studies have also explained advancement by contrasting advancers to those who plateaued (e.g., Hurley & Sonnenfeld, 1998) or derailed (e.g., Sessa & Campbell, 1997; Van Velsor & Leslie, 1995) in order to isolate the differentiating factors. The studies have been retrospective, mostly of upper managers and executives, and at one level. This study is prospective, of respondents at lower management levels, thus helping overcome the problem that studies have included only those surviving to middle and higher management levels. The comparison groups are labeled stayers or reducers as they may have changed status after being surveyed. The comparison with reducers should provide the clearest sharpest contrast of critical factors at each transition.

METHOD

Data Collection and Respondents

The respondents were fulltime employees below executive levels from the Australian Public Service and comparable private sector companies, mostly in finance, property and business services (e.g., banks). Because only about 25% of Australian managers are women (Australian Bureau of Statistics, 1996b), a stratified sampling procedure was used where possible through computerized personnel records to select men and women by their level. In the Australian Public Service and the major banks, the percentage of managers remained the same or slightly increased at the four major management levels (lower, middle and upper managers; executives) from 1987 to 1996, thus keeping the major levels intact (Affirmative Action Agency [AAA], 1989-1996; Department of Finance, 1995-1996). Hence, advancement could occur in a managerial hierarchy.

Surveys were mailed initially to 10,820 employees. The survey data were collected three times, a year apart, in prepaid envelopes, although only the first and third data collections were used. On the first mail-out, the respondents (who were anonymous to the researcher) were asked to supply their names and addresses to participate in a longitudinal study. The Time 1 return rate was 52%, including 2614 women and 3013 men (5627). Of these, 83% or 4670 volunteered for the longitudinal study. Of the 4670, 323 persons were lost to the Time 2 mailing through incorrect addresses, or ineligibility through having left employment permanently (e.g., retirement, death) or other reasons (e.g., now unemployed, motherhood, maternity leave, became owner managers of small businesses, went part-time). The Time 2 response, from the 4347 able or eligible to participate, was 79%, providing 1593 women and 1841 men (3434). On the third mail-out, 123 respondents were also lost for similar reasons to Time 2. The overall response rate at Time 3 was 87%, totalling 2966. Owner managers ($n = 67$) were removed, because they may not be able to advance, reducing the Time 3 sample to 1399 women and 1431 men (2830).

Chi-square tests (results available from the author) of the Time 1 data showed that Time 3 nonrespondents differed from respondents by being younger and less educated; having worked fewer years and in larger than smaller organizations; being single rather than married and childless rather than parents; and by having lower managerial levels, and occupational types (i.e., more clerks; fewer managers and administrators, professionals, paraprofessionals). Brett and Stroh (1997) also found that their nonrespondents were younger, less likely to have children, and had lower workforce and company tenure than respondents. How advancement is affected by the nonresponse is not known. Nonrespondents may be less likely to advance than respondents because of some factors (lower education, occupation type) but more because of others (younger, larger organizations), perhaps overall not affecting the results.

TABLE 1

Changes in Managerial Level Two Years Later from Time 1 to Time 3

Time 1 Managerial Level	Time 3 Managerial Level								Total
	1	2	3	4	5	6	7	8	
1. Nonsupervisors/nonmanagers	<u>701</u> 64.4	202 18.5	97 8.9	72 6.6	8 0.7	4 0.4	3 0.3	2 0.2	1089 100%
2. First-line supervisor	125 21.9	<u>251</u> 43.9	126 22.0	65 11.4	3 0.5		1 0.2	1 0.2	572 100%
3. Lower level manager	56 14.4	32 8.2	<u>158</u> 40.5	130 33.3	7 1.8	4 1.0	1 0.3	2 0.5	390 100%
4. Middle manager	38 7.2	8 1.5	34 6.5	<u>350</u> 66.5	90 17.1	1 0.2	4 0.8	1 0.2	526 100%
5. Upper manager	4 2.2			37 20.7	<u>113</u> 63.1	20 11.2	4 2.2	1 0.6	179 100%
6. Executive	2 5.0	1 2.5	1 2.5	4 10.0	5 12.5	<u>17</u> 42.5	5 12.5	5 12.5	40 100%
7. Divisional head			1 8.3			3 25.0	<u>8</u> 66.7		12 100%
8. Chief executive officer	1 4.5			2 9.1	1 4.5	1 4.5		<u>17</u> 77.3	22 100%
Total	927	494	417	660	227	50	26	29	2830
	32.8%	17.5%	14.7%	23.3%	8.0%	1.8%	0.9%	1.0%	100.0%

Note. Underlined numbers indicate the stayers, those respondents who stayed at the same managerial level. Those who advanced are in the triangle above the diagonal. Those in the triangle below the diagonal reduced in managerial level.

Changes in managerial level. On each data collection, the respondents rated their managerial level on eight categories from subordinate to chief executive, as shown in Table 1. Only the Times 1 and 3 data collections were used, because by Time 3 sufficient numbers of persons had advanced to the next major level to analyse. The measures of managerial level at the Times 1 and 3 data collections were used to form the groups of advancers versus nonadvancers. Table 1 provides the changes in managerial level from Time 1 to Time 3. Overall, 57.01% of respondents stayed at the same level, 30.35% advanced in level, and 12.64% reduced in level. The interest of this study was in explaining advancement up to upper manager (i.e., the major level below executive level) by predicting advancing through successively higher transitions. Some respondents at Time 1 were thus excluded because they did not meet the requirements of the study. They were all of the executives (Times 1 and 3), and most of the people who advanced more than one major level, such as subordinates who advanced to middle manager or beyond, totalling 399 people.

The interest of the study was in predicting entry to management, advancing to middle manager, and advancing to upper manager. Except for the first transition, advancers could be compared not only to stayers but also to reducers. Reducers were chosen who reduced more than one major level, providing large enough sizes for analysis.

The transitions were derived from the changes in level shown in Table 1. As shown, subordinates could enter lower management by advancing to first-line supervisor (202) or, less so, to lower manager directly (97). The latter two levels were thus combined to form the first transition of entry to lower management. Entry to management was thus predicted from those Time 1 subordinates who advanced to first-line supervisor or lower manager by Time 3 (299: 202 + 97) versus those who stayed subordinates by Time 3 (701).

As shown (Table 1), both supervisors (65) and lower managers (130) advanced to middle manager. Hence, they were combined for that transition. Advancing to middle manager was thus predicted from those Time 1 first-line supervisors or lower managers who advanced to middle manager (195: 65 + 130) versus those who stayed supervisors or lower managers (409: 251 + 158), or versus those who reduced to subordinates (181: 125 + 56).

Middle managers were the major group who advanced to upper manager. Advancing to upper manager was thus predicted from those middle managers who advanced to upper manager (90) versus those who stayed middle managers (350), or separately versus those who reduced in level (80: 38 + 8 + 34).

An additional transition was also examined for advancing to lower manager. As shown in Table 1, advancing to lower manager could also arise from being a first-line supervisor (126). Australian women managers form about half of first-line supervisors in finance and the public sector, but a low proportion of lower level managers (15 to 25%; AAA, 1989-1996; Still, 1993). Hence, that transition may have been especially important to women's advancement, and was examined separately. Advancing to lower manager from first-line supervisor was predicted from those Time 1 supervisors who advanced to lower manager (126) versus those who stayed supervisors by Time 3 (251), or versus those who reduced to subordinate level (125). The 251 stayers and the 125 reducers were also included in those comparison groups for advancing to middle manager. The numbers in each of the four transition for testing Hypotheses 1 to 4 are given in Table 2, including of men and women.

TABLE 2

Number of Respondents in Each Transition

Transition	Nonadvancers			Advancers			All		
	Total	Women	Men	Total	Women	Men	Total	Women	Men
Stayers vs Advancers									
Subordinate entry to management	701	391	310	299	160	139	1000	551	449
Supervisor advancing to lower manager	251	128	123	126	55	71	377	183	194
Advancing to middle manager	409	182	227	195	81	114	604	263	341
Advancing to upper manager	350	162	188	90	40	50	440	202	238
Reducers vs Advancers									
Supervisor advancing to lower manager	125	68	57	126	55	71	251	123	128
Advancing to middle manager	181	97	84	195	81	114	376	178	198
Advancing to upper manager	80	45	35	90	40	50	170	85	85

The final sample. The final sample (Table 1) thus comprised 1000 subordinates, 567 first-line supervisors, 344 lower managers, and 520 middle managers at Time 1 ($n = 2431$; 1158 women, 1273 men). Most (94%) were from 20 to 49 years old: 60% of subordinates were from 20 to 34; 64% of supervisors from 25 to 39, and 68% of lower managers and 65% of middle managers from 30 to 44 years of age. Of respondents, 94% were employed fulltime from fewer than 5 years to 25 to 30 years. Subordinates were mostly in early career: 53% were employed fewer than 10 years fulltime, and 30% for 10 to 20 years. Supervisors were mostly in early to mid career: 54% were employed from 5 to 15 years, and 26% for 15 to 25 years. Lower managers and middle managers were mostly in middle career to early late-career: 47% and 45% respectively were employed from 10 to 20 years, and 25% and 29% employed 20 to 30 years. Two-thirds of respondents were married (56% subordinates up to 75% of lower and middle managers) and 60% childless (two thirds of subordinates down to 50% of lower and middle managers). Respondents were mostly high school graduates (30%) or undergraduate degree holders (30%), were public servants (60%) or worked in the finance, property, and business service industry (30%), and were spread evenly across organizations of fewer than 1,000 employees, of 1000 to 8000 employees, and more than 8,000 employees. Subordinates and supervisors were mostly professionals (36%, 39%, respectively), paraprofessionals (20%, 22%), and clerks (39%, 37%). Lower and middle managers were mostly managers and administrators (39%, 57%) or professionals (35%, 32%).

Measures

Managerial level. Managerial level was the 8-category item (Table 1), consistent with the levels found in Australian organizations and with other measures (e.g., Forbes & Piercy, 1991; Melamed, 1996). Differentiating "middle management" into lower, middle and upper managers reflected the levels used in the organizations and other studies (Saari et al., 1988). In order to allow respondents to accurately classify themselves and to enable consistency across organizations, an organization's job grades were inserted next to the corresponding response categories on the item. Managerial promotions were not used to measure increases in level as promotions may not provide major changes in management level, and women's managerial promotions have resulted in less change in level than men's (Cox & Harquail, 1991; Lewis, 1992). The managerial level item showed convergent and divergent validity. For the total Time 1 sample (5627), it was more highly correlated with directly-relevant advancement constructs also asked in the survey (salary .63; years of supervision .63; number of subordinates .58; number of managerial promotions .56; position type -.53) than less directly-relevant ones (age .37; fulltime years in workforce .39; time to current position .15; number of organization levels -.11; organizational size -.14).

An assessment was made of the validity of the advancing/not advancing classification. Differences were tested between advancers and either stayers or reducers for all transitions on measures that should have been different at Time 3 if advancers had advanced in management level (convergent validity) compared to those that could be spuriously related to advancement, but should not have changed between advancers and nonadvancers at Time 3 (divergent validity). The former were salary, promotions, numbers of subordinates, years supervising others, position type (coded by occupation type), and time without promotion. The latter were the number of organizational levels and size, and respondent age, years fulltime employment, time to position, company tenure, and employer changes. Table 3 gives the *t*-test results. Overall, advancers were higher than nonadvancers at Time 3 on the items on which they should have increased, and similar on those that should not have changed.

Traits. Masculinity was the average of the 10, 7-point items of the short form of the Bem (1981) Sex-Role Inventory. The scale has shown good reliability (.84 to .87) and satisfactory validity (Lenney, 1991). Managerial aspirations were the average of the 13, 5-point items measuring the extent to which respondents desire and intend to advance to a (higher) managerial level (Tharenou & Terry, 1998). The measure was distinct from enacted aspirations using exploratory factor analysis on one sample and confirmatory factor analysis on another, was reliable ($\alpha = .94, .95$; test-retest $r = .77$), and demonstrated convergent and divergent validity concurrently and longitudinally (Tharenou & Terry, 1998).

TABLE 3

Results of t-tests of Changes in Convergent and Divergent Measures for Advancers Versus Stayers or Reducers

	Means		t	Means		t	Means		t	Means		t
Advancers vs Stayers												
	Sub→Sub	Sub→Sup&LM		Sup→Sup	Sup→LM		Sup&LM→Sup&LM	Sup&LM→MM		MM→MM	MM→UM	
Convergent measures												
Position	3.11	2.79	3.06 **	2.98	2.03	5.63 ***	2.56	1.70	7.27 ***	1.62	1.19	4.68 ***
Salary	3.48	3.61	-2.10 *	3.60	4.35	-6.71 ***	3.89	4.74	-8.64 ***	5.10	6.23	-5.59 ***
Promotions	2.66	2.85	-2.87 **	3.16	3.37	-1.77	3.35	3.72	-4.01 ***	3.80	4.32	-4.94 ***
Years supervision	1.99	2.67	-9.35 ***	3.57	3.50	0.65	3.71	3.93	-2.42 *	4.40	4.58	-2.11 *
Number direct subordinates	1.06	2.16	-24.72 ***	2.45	2.31	1.45	2.42	2.51	-0.87	2.12	3.36	-3.67 ***
Number accountable staff	1.05	1.68	-19.65 ***	1.87	1.83	0.76	1.90	2.08	-2.40 *	2.09	2.53	-3.06 **
Time without promotion	2.65	2.09	7.11 ***	2.61	2.12	4.25 ***	2.69	2.28	4.14 ***	2.91	2.31	4.66 ***
Divergent measures												
Organization levels	5.86	5.79	0.78	6.06	5.95	0.71	6.10	6.10	0.05	5.98	5.89	0.55
Organization size	3.03	3.21	-1.42	3.58	3.65	0.74	3.51	3.45	0.39	2.89	3.13	-1.10
Age	4.74	4.27	3.68 **	4.93	4.61	1.70	5.09	5.06	0.21	5.90	6.18	-1.49
Fulltime years	3.37	2.92	3.72 ***	3.74	3.42	1.86	3.93	3.91	0.17	4.66	4.93	-1.42
Organization years	2.18	1.84	4.11 ***	2.73	2.46	1.87	2.92	2.64	1.87	3.01	3.16	-0.63
Changed employer	1.07	1.08	-0.54	1.03	1.07	-1.42	1.04	1.07	-1.70	1.05	1.06	-0.22
Time to position	2.82	2.99	-1.89	3.50	3.61	-0.78	3.56	3.39	1.34	3.34	3.40	-0.28
Advancers vs Reducers												
				Sup→Sub	Sup→LM		Sup&LM→Sub	Sup&LM→MM		MM→LM,Sup,&Sub	MM→UM	
Convergent measures												
Position				3.30	2.03	6.99 ***	3.12	1.70	10.75 ***	2.44	1.19	6.14 ***
Salary				3.55	4.35	-6.34 ***	3.72	4.74	-8.90 ***	4.23	6.23	-8.76 ***
Promotions				2.92	3.37	-3.13 **	3.04	3.72	-5.91 ***	3.63	4.32	-4.40 ***
Years supervision				2.67	3.50	-5.75 ***	2.93	3.93	-8.17 ***	3.89	4.58	-5.18 ***
Number direct subordinates				1.16	2.31	-11.18 ***	1.11	2.51	-14.54 ***	1.91	3.36	-6.33 ***
Number accountable staff				1.02	1.83	-21.23 ***	1.02	2.08	-14.79 ***	1.67	2.53	-5.10 ***
Time without promotion				2.12	2.72	4.51 ***	2.73	2.28	3.86 ***	2.65	2.31	2.06 *
Divergent measures												
Organization levels				5.77	5.95	-0.90	5.77	6.10	-2.07 *	6.02	5.89	0.51
Organization size				3.09	3.65	2.38 *	3.05	3.45	-2.07 *	2.82	3.13	-1.01
Age				4.76	4.61	0.67	4.99	5.06	-0.41	5.48	6.18	-2.56 *
Fulltime years				3.53	3.42	0.51	3.76	3.91	-0.81	4.05	4.93	-3.36 ***
Organization years				2.30	2.46	0.89	2.33	2.64	-1.84	2.31	3.16	-3.03 **
Changed employer				1.09	1.07	0.68	1.11	1.07	1.18	1.12	1.06	1.32
Time to position				2.92	3.81	-3.82 ***	2.96	3.39	-2.80 **	2.97	3.40	-1.75

Note. Sub = subordinate; Sup = first-line supervisor; LM = lower manager; MM = middle manager; UM = upper manager.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Career support. Mentor support was measured as career support consistent with the theoretical arguments for Hypothesis 2. It was the average of the 9, 7-point items that emerged as the first factor from analysis of Ragins and McFarlin's (1990) scale with the Time 1 sample (5627). The factor was the extent the mentor provided sponsoring, coaching, and challenging work (the other factor was psychosocial support). Career encouragement was the average of 3, 7-point items (Tharenou et al., 1994) measuring the extent employees reported receiving encouragement from colleagues and more senior organization staff for career development and promotion. The scale has demonstrated reliability in other samples ($\alpha = .77$ to $.80$, Tharenou, 1997b; Tharenou et al., 1994). In factor analysis of another sample, it emerged as a distinct factor from training and development and challenging work (measures also used here), and was related to other measures of interpersonal support (Tharenou et al., 1994).

Male managerial hierarchy. Male managerial hierarchy was based on 3, 5-point items assessing the extent to which the managerial hierarchy of an organization consisted of men (Tharenou & Conroy, 1994; Tharenou et al., 1994). In the present study, the alpha coefficient was low. Hence, to assess its unidimensionality, the items were factor analysed with other organizational hierarchy items using the total Time 1 sample (5627). A male managerial hierarchy factor clearly emerged. The first two items were from the original measure: "proportion of men and women in the managerial hierarchy", "years worked closely with a woman manager". The third item loading was the employment sector (1, public; 2, private), not the original item "proportion of men and women coworkers in the immediate work environment". The factor was still clearly interpretable as male managerial hierarchy. Hence, the scores (z -scores because of the varied response options) of the three items loading on the factor were averaged to yield the score for male managerial hierarchy.

Human capital. Age, organizational tenure, and education were 11-, 8-, and 10-point items respectively. Training and development was the average of 6, 7-point items measuring participation in courses and on-the-job assignments (Tharenou & Conroy, 1994). The scale has emerged as a distinct factor, been reliable ($\alpha = .79, .81$; test-retest $r = .85$), and shown convergent and divergent validity in different samples (Tharenou, 1997b; Tharenou & Conroy, 1994; Tharenou et al., 1994). Challenging work assignments in the first 3 months on the present job and since were the average of 2, 7-point items ($\alpha = .77$; Tharenou & Conroy, 1994). In factor analysis of the Time 1 sample (5627), training and development, challenging work, and career encouragement were distinct factors, supporting construct validity.

Promotion opportunity. The number of managerial promotions over one's career was a single item from 1, none to 6, 9 or more. Promotion opportunities were also measured by primary versus secondary job markets because the former offers more promotion through skill acquisition and career paths than the latter (Markham, Harlan, & Hackett, 1987). Job markets are usually measured by occupation type (Markham et al., 1987). Occupation type was the average of the codes assigned to respondents' occupations and positions using the Australian Standard Classification of Occupations (Department of Employment and Industrial Relations, 1987), from 1, managers and administrators to 8, laborers and unskilled workers.

Control variables. Organizational size, marital status, number of dependent children, and full-/part-time employment status were measured to control for their effects.

Method of Analysis

The aim of the study was to test theoretical propositions with respect to the links of traits and interpersonal support variables to advancing versus not advancing at increasingly higher transitions in the managerial hierarchy. Suitable methods of analysis included Predictive Discriminant Analysis (PDA), Logistic Regression, and Descriptive Discriminant Analysis (DDA). Predictive Discriminant Analysis was not chosen because its aim is to predict group membership and to classify individuals when the group status is unknown (Duarte Silva & Stam, 1995; Huberty & Lowman, 1995). Descriptive Discriminant Analysis is recommended for testing theoretical predictions for group differences (Bray, Maxwell, & Cole, 1995; Duarte Silva & Stam, 1995; Huberty & Lowman, 1997). The aim of DDA is to examine how differences in the groups can be described in terms of composites of the predictor variables, and to test scores theoretically

expected to differ across groups (Huberty & Lowman, 1997). Hence, DDA fitted the aims of the study. DDA involves two major steps: multivariate analysis of variance (MANOVA) followed by canonical discriminant analysis (DA) (Duarte Silva & Stam, 1995; Huberty & Lowman, 1997). In the first step, the predictor variables become the dependent variables in MANOVA and the group/criterion variable becomes the independent variable (Duarte Silva & Stam, 1995). MANOVA assesses whether the grouping variable is related to the dependent variables (actually the predictors). In this study, they were the 2-year earlier measures of traits and social processes, as well as human capital and promotion opportunities to take them into account. Switching around the criterion and predictor variables to become independent variables/factors and 'dependent' variables does not make a difference mathematically (Tabachnick & Fidell, 1989).

Any significant effects in MANOVA, however, do not reveal which variables should be combined and in what manner to discriminate among the groups (Duarte Silva & Stam, 1995). Canonical DA is used to identify the unique linear combination of the variables, known as canonical discriminant functions, that separates the groups (Bray et al., 1995; Duarte Silva & Stam, 1995). Standardized canonical coefficients (standardized discriminant weights, SDWs) allow the relative and unique importance of the variables to the discriminant function to be examined, and are analogous to beta weights in multiple regression (Bray et al., 1995). In DDA, the group means for each variable (adjusted in the present study by the covariates) along the significant dimensions are used to interpret the group differences (Bray et al., 1995).

Logistic regression was not used because its aims are to predict group membership and classify individuals (Wright, 1995), and because MANOVA (whose conditions were met) provides more useful parameters, including effect sizes. Unlike logistic regression, which can only enter interactions between each predictor variable and gender individually, MANOVA provided a parsimonious multivariate test of whether gender interacted overall with advancing versus not advancing within each transition. If there was no overall multivariate interaction at each transition, then main effects for Advancement could be interpreted. If there was, then the univariate interaction tests could be followed up for each variable with gender. Logistic regression cannot test an overall multivariate interaction at each transition. It should be noted that MANOVA, DA, and logistic regression give very similar solutions (Tabachnick & Fidell, 1989; Wright, 1995). In order to check, the analyses were also done with hierarchical logistic regression (including the two interactions for career encouragement and male hierarchy). Similar results emerged with minor differences in the solutions.¹

To conduct the MANOVAs, the control variables (organization size, marital status, dependent children, employment status) were used as covariates to match up the sample on these characteristics. The covariates were related to managerial level (Table 4). Two-way interactions were performed between Advancement (versus stayed, or reduced) and Gender for each transition. If there were significant multivariate interactions at each transition, the main effects for advancement were tested for men and women separately and the SDWs derived. Because the interactions may be difficult to detect, especially for the opposite signs for men and women for male managerial hierarchy, the analyses for the main effects of Advancement were also run for men and women separately when testing Hypotheses 3 (career encouragement) and 4 (male hierarchies) even if no interaction was found.

If there were only significant multivariate main effects at a transition, they were followed with univariate *F*-tests to test for differences between the advanced and not advanced groups on each dependent variable separately and by the SDWs to test relative importance. MANOVA provides stepdown analysis. This allows

¹ The only differences were that the hierarchical logistic regressions, unlike the MANOVAs, showed that: (a) gender and aspirations did not interact to predict advancing to lower manager by supervisors, thus supporting Hypothesis 1; (b) gender and male hierarchy interacted to predict advancing to lower manager by supervisors versus staying, further supporting Hypothesis 4; (c) gender and career encouragement interacted to predict advancing to upper manager versus staying, opposite in direction to Hypothesis 3; and (d) education predicted advancing to upper manager versus staying. Generally, significance levels were lower than for MANOVA.

sequential ordering of variables, taking out the effect of each variable one at a time prior to the next, and thus identifying the unique link of a variable to advancement (Tabachnick & Fidell, 1989; Weinfurt, 1995). The human capital and promotion opportunity variables were entered followed by the traits and then the interpersonal support variables to assess their unique links. The traits were thought more stable and enduring than the interpersonal support variables so they were entered before them. The order of the traits and interpersonal support was also reversed, providing the same results (available from the author). For the univariate F -tests, the significance level was adjusted for Type 1 error. There were 12 dependent variables, resulting in a significance level of $p < .004$.

RESULTS

Table 4 provides the correlation matrix and alpha coefficients for the variables. There were no problems with multicollinearity or reliability. MANOVA and DA are suitable for analysis of unequal group sizes (Tabachnick & Fidell, 1989) as arose in the comparison with stayers, but need to be robust to failures of normality. Evaluation of assumptions of linearity, normality, and homogeneity of variance-covariance matrices in general revealed no problems for the analyses. Pairwise deletion was used for missing data.

Link of Advancing/Not Advancing to Traits and Interpersonal Support

Table 5 provides the results for the multivariate effects for each transition for the main effects of Advancement (Factor A) and Gender (B) and their interaction. As shown, for 2 of the 7 tests, both with reducers, significant interactions arose between Advancement and Gender. Inspection of the univariate F -tests for the interactions showed they were only for 2 of the 12 dependent variables: managerial aspirations (once) and male managerial hierarchy (twice). Hence, the results for the interactions are presented when Hypotheses 1 and 4 are presented. Because the interactions were so limited, the results for the main effects of the factor Advancement are given. As shown in Table 5, the multivariate F -tests for Advancement were significant, explaining from a low 6% (entry to management) and 8% (advancing to upper manager versus staying) of the variance to a moderate 33% (advancing to upper manager versus reducing). In the DAs, only one discriminant function arose to separate advancers from nonadvancers at each transition. The results for the univariate F -tests, the effect sizes, the stepdown F -tests, the SDWs for the single discriminant functions, and the means of the dependent variables for each transition are given in Tables 6 to 9.

Hypothesis 1: Managerial Traits

Hypothesis 1 proposed that those who advance in management compared to not advance will be higher in managerial aspirations and masculinity, most for entry to management, retaining importance to advance to middle manager, but decreasing to little effect to advance to upper manager. The univariate F -tests and SDWs were first examined, followed by the stepdown F -tests to assess independent links by the traits. As noted (Table 5), there was a significant interaction between Advancement and Gender for managerial aspirations when supervisors advanced to lower manager versus reduced. However, the interaction was not significant at $p < .004$, univariate $F(1, 239) = 8.00$, $p = .005$, stepdown $F(1, 232) = 3.14$, $p < .10$. Hence, the interaction effect was not interpreted.

TABLE 4

Correlations and Alpha Coefficients for All Variables for the Time 1 Sample

Variables	Mean	SD	Correlations																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Employment status	1.07	0.32	-																		
2. Organization size	3.17	1.71	-.01	-																	
3. Education	4.70	2.32	-.00	-.17	-																
4. Age	4.63	1.78	.02	-.10	-.06	-															
5. Company tenure	2.21	1.47	-.06	.16	-.27	.44	-														
6. Mentor support	4.27	1.78	-.05	.04	-.04	-.16	-.08	(85)													
7. Occupation type	2.92	1.51	.10	.16	-.29	-.15	-.07	-.04	(93)												
8. Masculinity	4.80	0.91	-.07	.05	-.05	-.00	-.03	.12	-.08	(88)											
9. Aspirations	3.60	0.92	-.19	.11	.08	-.23	-.15	.17	-.04	.39	(95)										
10. Training	3.92	1.52	-.06	-.08	.09	.32	.18	.09	-.43	.15	.03	(79)									
11. Challenging work	4.35	2.01	-.08	-.02	.08	-.00	.08	.18	-.26	.13	.06	.34	(72)								
12. Spouse	1.34	0.47	-.10	.00	.05	-.27	-.15	.03	.13	-.04	.06	-.17	-.09	-							
13. Number children	1.82	1.13	.16	.02	-.07	.33	-.22	-.05	-.11	-.02	-.06	.18	.05	-.38	-						
14. Gender	1.50	0.50	-.20	.09	-.05	.11	.25	-.06	-.08	-.00	.13	.08	.07	-.08	.19	-					
15. Promotions	2.16	1.03	-.05	.07	-.11	.38	.34	.06	-.28	.18	.06	.49	.19	-.22	.24	.17	-				
16. Encouragement	3.32	1.74	-.08	.10	-.08	-.07	.00	.31	-.06	.12	.07	.27	.32	.01	-.02	-.02	.08	(79)			
17. Male hierarchy ^a	-.19	.76	.02	.19	-.13	-.15	.10	.07	.20	.07	.14	-.33	-.04	-.04	.05	.10	.03	-.19	(74)		
18. Managerial level Time 1	2.16	1.18	-.10	-.04	.07	.26	.26	.09	-.47	.20	.12	.52	.27	-.18	.18	.08	.55	.08	-.01	-	
19. Managerial level Time 3	2.42	1.29	-.01	-.00	.08	.21	.21	.10	-.39	.22	.15	.44	.26	-.18	.17	.07	.48	.05	.09	.76	-

Note. Decimal points have been omitted from correlations. Correlations greater than .04 are significant at $p < .05$, at .05 are significant at $p < .01$, and at .07 are significant at $p < .001$. Alpha coefficients are in the diagonal. Dashes indicate where alphas could not be calculated. $n = 2431$.

^aMale hierarchy is a z-score.

TABLE 5

**Multivariate Results of MANOVAs for Factors of Advancement
(Advancers Versus Stayers or Reducers) and Gender on Dependent Variables**

Factors	Main Effects			
	Multivariate F	df	p	Effect Size
Stayers vs Advancers				
Subordinate entry to management ^a (A)	5.12	12,950	.000	.061
Gender (B)	3.45	12,950	.000	.042
AXB	1.15	12,950	.319	.014
Supervisor advancing to lower manager ^b (A)	4.25	12,351	.000	.127
Gender (B)	4.01	12,351	.000	.121
AXB	1.03	12,351	.417	.034
Advancing to middle manager ^c (A)	8.43	12,576	.000	.149
Gender (B)	6.12	12,576	.000	.113
AXB	1.35	12,576	.184	.027
Advancing to upper manager ^d (A)	3.05	12,414	.000	.081
Gender (B)	6.62	12,414	.000	.161
AXB	0.44	12,414	.948	.013
Reducers vs Advancers				
Supervisor advancing to lower manager ^e (A)	3.51	12,228	.000	.156
Gender (B)	2.31	12,228	.003	.108
AXB	2.12	12,228	.016	.101
Advancing to middle manager ^f (A)	8.06	12,352	.000	.215
Gender (B)	3.15	12,352	.000	.097
AXB	1.95	12,352	.028	.062
Advancing to upper manager ^g (A)	6.18	12,149	.000	.332
Gender (B)	2.01	12,149	.027	.139
AXB	1.72	12,149	.069	.211

^a Subordinates who remained subordinates ($n=674$) versus subordinates who advanced to first-line supervisor or lower manager ($n=295$). Women=527, Men=442.

^b First-line supervisors who remained first-line supervisors ($n=247$) versus first-line supervisors who advanced to lower manager ($n=123$). Women=181, Men=189.

^c First-line supervisors or lower managers who remained first-line supervisors or lower managers ($n=402$) versus first-line supervisors and lower managers who advanced to middle manager ($n=193$). Women=260, Men=335.

^d Middle managers who remained middle managers ($n=343$) versus middle managers who advanced to upper managers ($n=90$). Women=195, Men=238.

^e First-line supervisors who reduced to subordinates ($n=124$) versus first-line supervisors who advanced to lower manager ($n=123$). Women=120, Men=127.

^f First-line supervisors and lower managers who reduced to subordinates ($n=178$) versus first-line supervisors and lower managers who advanced to middle manager ($n=193$). Women=173, Men=198.

^g Middle managers who reduced in level (to subordinates, first-line supervisors, lower managers) ($n=78$) versus middle managers who advanced to upper manager ($n=90$). Women=82, Men=86.

TABLE 6

Subordinate Entry to Management: Univariate E-tests and SDWs for Main Effect of Advancement (Advancers Versus Stayers)

Dependent Variables: 2-Year Earlier Measures	Univariate		Eta	Function I		Stepdown	Adjusted Means	
	F ^a	p		SDW	E		Sub→Sub	Sub→Sup & LM
Age	9.93	.002	.010	.15	9.93	.002	4.32	3.90
Company tenure	11.93	.001	.012	.27	5.71	.017	1.89	1.62
Education	1.39	.238	.001	.24	4.04	.045	4.77	4.58
Training & development	0.76	.384	.001	-.23	4.41	.036	3.16	3.25
Challenging work	3.48	.062	.004	-.04	1.93	.165	3.69	3.95
Occupation type	0.11	.741	.000	.05	0.20	.652	3.48	3.51
Managerial promotions	0.94	.333	.001	-.18	2.29	.131	1.55	1.61
Managerial aspirations	20.74	.000	.021	-.36	11.41	.001	3.41	3.70
Masculinity	14.40	.000	.015	-.19	3.12	.078	4.53	4.78
Mentor support	13.18	.000	.014	-.15	3.66	.056	3.98	4.44
Career encouragement	9.30	.002	.010	-.30	1.57	.211	3.01	3.37
Male managerial hierarchy	14.21	.000	.015	-.52	11.83	.001	-.12	.09

Note. Sub = subordinate; Sup = first-line supervisor; LM = lower manager; SDW = standardized discriminant weights. Means adjusted by covariates.

^adf=1,961. α =674 (advancers); α =295 (stayers).

TABLE 7

Supervisor Advancing to Lower Manager: Univariate E-tests and SDWs for Main Effect of Advancement

Dependent Variables: 2-Year Earlier Measures	Univariate E ^a	p	Eta	Function I SDW	Stepdown E	p	Adjusted Means	
							Sup→Sup	Sup→LM
Stayers versus advancers								
Age	6.42	.012	.017	-.33	6.42	.012	4.55	4.09
Company tenure	1.77	.184	.005	-.11	0.20	.657	2.29	2.11
Education	5.76	.017	.016	.04	4.08	.044	3.95	4.56
Training & development	2.40	.122	.007	.35	4.09	.044	3.67	3.88
Challenging work	2.57	.110	.007	.21	0.68	.411	4.38	4.72
Occupation type	7.21	.008	.020	-.56	4.44	.036	3.52	3.10
Managerial promotions	0.81	.369	.002	-.16	0.44	.509	2.20	2.14
Managerial aspirations	22.61	.000	.059	.73	20.67	.000	3.49	3.96
Masculinity	0.40	.528	.001	-.14	0.99	.321	4.89	4.95
Mentor support	0.03	.871	.000	-.15	1.11	.292	4.33	4.37
Career encouragement	0.05	.825	.000	-.17	1.63	.202	3.60	3.56
Male managerial hierarchy	1.84	.176	.005	.38	4.34	.038	.10	.23
							Sup→Sub	Sup→LM
Reducers versus advancers								
Age	3.06	.082	.013	-.17	3.06	.082	4.45	4.10
Company tenure	1.43	.233	.006	.01	0.39	.534	2.29	2.10
Education	1.98	.160	.008	-.03	1.44	.232	4.11	4.50
Training & development	11.23	.001	.045	.41	12.34	.001	3.36	3.91
Challenging work	8.59	.004	.035	.10	2.70	.102	3.91	4.69
Occupation type	10.40	.001	.042	-.42	4.53	.034	3.63	3.07
Managerial promotions	0.81	.369	.003	.05	0.07	.796	2.06	2.14
Managerial aspirations	7.46	.007	.030	.27	5.40	.021	3.64	3.93
Masculinity	10.41	.001	.042	.44	3.88	.050	4.56	4.94
Mentor support	0.24	.628	.001	.02	0.03	.856	4.22	4.34
Career encouragement	1.10	.296	.005	-.07	1.14	.287	3.30	3.54
Male managerial hierarchy	0.70	.404	.003	.55	5.24	.023	.09	.16

Note. Sub = subordinate; Sup = first-line supervisor; LM = lower manager; SDW = standardized discriminant weights. Means adjusted by covariates.

^aFor stayers versus advancers, $df=1,362$; for stayers versus reducers, $df=1,293$. $n=247$ (advancers); $n=123$ (stayers); $n=124$ (reducers).

TABLE 8

Advancing to Middle Manager: Univariate E-tests and SDWs for Main Effect of Advancement

Dependent Variables: 2-Year Earlier Measures	Univariate E ^a	p	Eta	Function I SDW	Stepdown E	p	Adjusted Means	
							Sup & LM→Sup & LM	Sup & LM→MM
Stayers versus advancers								
Age	0.81	.369	.001	-.18	0.81	.369	4.69	4.57
Company tenure	2.03	.155	.003	.00	1.34	.248	2.47	2.29
Education	19.62	.000	.032	.43	17.51	.000	4.18	5.05
Training & development	17.57	.000	.029	.35	17.39	.000	3.93	4.54
Challenging work	2.75	.098	.005	.03	0.08	.778	4.53	4.83
Occupation type	29.44	.000	.048	-.38	13.82	.000	3.07	2.37
Managerial promotions	20.27	.000	.033	.49	22.97	.000	2.32	2.65
Managerial aspirations	20.20	.000	.033	.36	15.44	.000	3.52	3.87
Masculinity	8.61	.003	.014	.20	2.92	.088	4.85	5.06
Mentor support	1.17	.280	.002	-.02	0.28	.595	4.32	4.48
Career encouragement	0.84	.358	.001	-.17	2.49	.115	3.51	3.37
Male managerial hierarchy	0.08	.784	.000	.09	0.44	.508	.08	.06
Reducers versus advancers								
							Sup & LM→Sub	Sup & LM→MM
Age	0.18	.671	.001	-.20	0.18	.671	4.63	4.57
Company tenure	0.00	.961	.000	.07	0.01	.918	2.29	2.28
Education	9.25	.003	.025	.29	10.09	.002	4.32	5.06
Training & development	22.01	.000	.057	.29	21.27	.000	3.77	4.42
Challenging work	8.93	.003	.024	.14	2.52	.113	4.17	4.78
Occupation type	32.22	.000	.082	-.44	16.02	.000	3.23	2.23
Managerial promotions	29.46	.000	.075	.52	24.66	.000	2.16	2.84
Managerial aspirations	10.85	.001	.029	.18	6.72	.010	3.58	3.87
Masculinity	18.35	.000	.048	.27	4.95	.027	4.66	5.08
Mentor support	1.87	.173	.005	.07	0.27	.602	4.21	4.46
Career encouragement	0.31	.578	.001	-.04	0.32	.574	3.27	3.37
Male managerial hierarchy	0.59	.443	.002	.19	1.91	.168	-.03	.08

Note. Sub = subordinate; Sup = first-line supervisor; LM = lower manager; MM = middle manager; SDW = standardized discriminant weights. Means adjusted by covariates.

^aFor stayers versus advancers, $df=1,587$; for reducers versus advancers, $df=1,363$. $n=193$ (advancers); $n=402$ (stayers); $n=178$ (reducers).

TABLE 9

Advancing to Upper Manager: Univariate E-tests and SDWs for Main Effect of Advancement

Dependent Variables: 2-Year Earlier Measures	Univariate E ^a	p	Eta	Function I SDW	Stepdown E	p	Adjusted Means	
							MM→MM	MM→UM
Stayers versus advancers								
Age	2.13	.145	.005	-.37	2.13	.145	5.46	5.72
Company tenure	0.03	.868	.000	.24	0.92	.337	2.77	2.73
Education	0.29	.590	.001	-.21	0.10	.751	5.21	5.36
Training & development	0.00	.962	.000	.03	0.01	.903	5.27	5.26
Challenging work	10.21	.002	.023	-.61	11.89	.001	5.10	5.72
Occupation type	0.04	.833	.000	-.06	0.01	.907	1.73	1.71
Managerial promotions	6.38	.012	.015	-.30	6.79	.009	2.95	3.26
Managerial aspirations	4.08	.044	.010	-.19	3.71	.055	3.70	3.91
Masculinity	5.49	.020	.013	-.21	1.66	.199	5.05	5.28
Mentor support	0.08	.781	.000	.04	0.01	.918	4.54	4.59
Career encouragement	0.42	.518	.001	-.09	0.01	.903	3.43	3.56
Male managerial hierarchy	10.43	.001	.024	-.57	8.58	.004	-1.10	.19
Reducers versus advancers								
							MM→LM, Sup & Sub	MM→UM
Age	3.65	.058	.022	.15	3.65	.058	5.12	5.64
Company tenure	1.30	.257	.008	.20	0.09	.759	2.41	2.68
Education	4.21	.042	.026	.41	5.15	.025	4.72	5.46
Training & development	1.46	.228	.009	.22	1.17	.281	5.00	5.24
Challenging work	18.84	.000	.105	.77	19.63	.000	4.49	5.72
Occupation type	0.47	.495	.003	.03	0.00	.963	1.84	1.73
Managerial promotions	4.83	.029	.029	.22	5.03	.026	2.84	3.21
Managerial aspirations	4.20	.042	.026	.23	5.16	.024	3.64	3.91
Masculinity	6.21	.014	.037	.12	1.82	.179	4.94	5.28
Mentor support	0.57	.452	.004	.08	0.04	.839	4.41	4.60
Career encouragement	1.25	.266	.008	-.42	8.96	.003	3.91	3.58
Male managerial hierarchy	16.23	.000	.092	.55	13.56	.000	-.33	.37

Note. Sub = subordinate; Sup = first-line supervisor; LM = lower manager; MM = middle manager; UM = upper manager; SDW = standardized discriminant weights. Means adjusted by covariates.

^aFor stayers versus advancers, $df=1,425$; for stayers versus reducers $df=1,160$. $n=90$ (advancers); $n=343$ (stayers); $n=78$ (reducers).

Inspection of the remaining main effects for Advancement supported Hypothesis 1. The univariate F -tests and the means showed that, 2 years earlier, advancers reported higher managerial aspirations and masculinity than stayers or reducers for entry to management (Table 6), advancing to lower manager from supervisor level (Table 7), and advancing to middle manager (Table 8), but not for advancing to upper manager (Table 9). The traits thus predicted entry to management up to advancing to middle manager. The stepdown F -tests were, however, significant for aspirations but not masculinity, and for the comparisons with stayers, not reducers. Removing the links of human capital and promotion opportunities, those who advanced were higher in managerial aspirations 2 years earlier than those who stayed at the same level, when predicting entry to management (Table 6), advancing to lower manager from supervisor level (Table 7), and advancing to middle manager (Table 8). The order of entry of aspirations and masculinity in the stepdown analyses was also reversed to check the stability of effects. Aspirations remained the most important trait.² The SDWs also indicated that, overall, aspirations were more related than masculinity to advancement (Tables 6 to 8).

Overall, supporting Hypothesis 1, aspirations added independent explanation beyond human capital and promotion opportunities to advancing in the hierarchy up to middle manager level. Moreover, the SDWS showed aspirations were relatively important compared to other variables, especially for explaining entry to management (second highest after male hierarchy) and advancing to lower manager from supervisor versus staying (highest).

Hypothesis 2: Mentor Support

Hypothesis 2 proposed that those who advanced in management compared to not advance would have more mentor career support for initial advancement (i.e., entry to management) rather than advancing to higher levels. In support of Hypothesis 2, mentor support reported 2 years earlier was higher for advancers than stayers or reducers at entry to management (Table 6), but not for advancing to lower manager from supervisor level (Table 7), or to middle manager (Table 8), or upper manager (Table 9). However, not supporting Hypothesis 2, the stepdown F -tests were not significant for entry to management. Hence, mentor support did not provide independent explanation beyond human capital, promotion opportunities, and traits. Mentor support was thus linked to entry to management through higher priority variables that were significant (aspirations, age). When the interpersonal support variables were entered before the traits (results available from author), mentor support did not yield a stepdown effect significant at $p < .004$ but at $p < .05$. Hence, aspirations did not appear to be the reason mentor support was related to entry. This infers that age, the other significant higher priority variable, may have been the reason. This effect may be interpreted as mentor support predicting entry to management through those younger than older entering management. The SDW also showed that mentor support was of little relative importance.

Hypothesis 3: Career Encouragement

Hypothesis 3 posed that those who advance in management compared to not advance will have more career encouragement, more for women than men, especially for advancing to higher than lower levels. Hypothesis 3 was not supported. Opposite to Hypothesis 3, the univariate F s showed that career encouragement was related to subordinate entry to management (Table 6), but not advancing to lower manager by supervisors (Table 7), or to middle manager (Table 8), nor to upper manager (Table 9). Although there was no significant interaction between career encouragement and gender for entry to management, inspection of the results for men and women showed the effect on advancement was only for women, univariate $F(1, 521) = 12.12$, $p < .001$. Women subordinates who advanced into management reported more encouragement 2 years earlier than those who stayed subordinates (Means = 3.44, 2.90). Career encouragement did not add

² With the order reversed (results available from the author), aspirations remained significant, and masculinity became significant for entry to management ($p < .003$), and advancing to middle manager versus staying ($p < .004$) or reducing ($p < .003$). It appears that the explanation masculinity shared with advancing was likely accounted for through its overlapping variance with aspirations (see Tabachnick & Fidell, 1989).

explanation beyond human capital, promotion opportunities, and traits, stepdown $F(1, 510) = 3.54, p < .10$, even when the traits and interpersonal support variables were reversed in order of entry. As for mentor support, career encouragement may predict entry to management through age. To advance to upper manager versus reduce, as shown in Table 9, career encouragement was significant for the stepdown F -test but not the univariate F -test. Hence, the effect was not interpreted.³

Hypothesis 4: Male Managerial Hierarchy

Hypothesis 4 proposed that men who advance in management compared to not advance will be in proportionately more male hierarchies and women in proportionately less male hierarchies, especially for advancing to higher than lower levels. Hypothesis 4 was partially supported for gender effects, but not for greater effects at higher than lower levels. For two of the analyses comparing advancers to reducers, there were significant interaction effects between Gender and Advancement, as previously noted (Table 5). The interaction for supervisors advancing to lower manager versus reducing was significant but not at $p < .004$, univariate $F(1, 239) = 8.05, p = .005$, stepdown $F(1, 228) = 9.36, p < .05$. It was interpreted because the interaction may be difficult to detect when opposite signs are posed. Supporting Hypothesis 4, the higher Means for male Advancers ($z = .47$) than Reducers ($z = .10$) indicated that male supervisors advanced to lower manager in managerial hierarchies more male 2 years earlier. The Means for female Advancers ($z = -.10$) and Reducers ($z = .09$) indicated that female supervisors advanced to lower manager in managerial hierarchies less male 2 years earlier. The SDWs for the combined sample showed that male hierarchy was the most related variable to supervisors advancing to lower manager rather than reducing, but for men and women separately the effect was only most important for men (SDWs available from the author upon request).

The other significant interaction was for predicting advancing to middle manager versus reducing, univariate $F(1, 363) = 10.33, p < .001$, stepdown $F(1, 352) = 9.36, p = .002$. Supporting Hypothesis 4, men were more likely to advance to middle manager than reduce when in managerial hierarchies more male 2 years earlier (Means: Advancers $z = .27$, Reducers $z = -.00$), and women in managerial hierarchies less proportionately male 2 years earlier (Means: Advancers $z = -.23$, Reducers $z = -.01$). However, male hierarchy was not relatively important for the total sample, or by gender separately (SDWs available from the author upon request).

When the MANOVAs were performed separately for men and women, for men only, Advancement was significantly related to male hierarchy. Male managerial hierarchies 2 years earlier predicted men's (a) entry to management, univariate $F(1, 436) = 14.10, p < .000$, stepdown $F(1, 425) = 6.32, p < .01$ [Means: Advancers $z = .10$, Stayers $z = -.21$]; and (b) advancing to upper manager versus reducing, univariate $F(1, 81) = 16.77, p < .000$, stepdown $F(1, 70) = 15.19, p < .000$ [Means: Advancers $z = .54$, Stayers $z = -.33$]. There was a trend for male managerial hierarchies to predict advancing to upper manager versus staying, univariate $F(1, 232) = 6.55, p < .01$, stepdown $F(1, 221) = 6.66, p < .01$ [Means: Advancers $z = .52$, Stayers $z = -.15$]. Overall, supporting Hypothesis 4, male managerial hierarchies added unique explanation to men advancing, beyond human capital, promotion opportunities, trait, and career support. In addition, the SDWs for men (available from the author upon request) showed that male hierarchies were the most related variable to entry to management and advancing to upper manager versus staying (the latter equal with challenging work), and second most related to advancing to upper manager versus reducing.

Overall, Hypothesis 4 was partially supported, more for men than women. Male hierarchies predicted men's advancement, and negatively but less consistently predicted women's advancement. They had unique effects beyond human capital, promotion opportunities, traits, and career support. However, contradicting Hypothesis 4, male managerial hierarchies predicted entering management as much as advancing to higher levels.

³ Tabachnick and Fidell (1989) pointed out that interpreting such an effect is difficult. When the MANOVAs were run for men and women separately, the link was only for men, $F(1, 81) = 4.33, p < .05$, but not at $p < .004$.

DISCUSSION

This study makes a rare contribution by being the first to assess how managerial traits and interpersonal support prospectively explain actual advancement to increasingly higher levels in the managerial hierarchy, beyond human capital and promotion opportunities. Advancing in management has been argued to be influenced by individuals' aspirations and by informal social processes -- factors not directly related to individual talent or formal organizational processes and needs (Feldman & Weitz, 1991; Ferris et al., 1992; Luthans, 1988; Ragins & Sundstrom, 1989; Tharenou, 1997a). Surprisingly, there have been no direct tests using longitudinal designs to assess if this is the case. In support, the results suggest that advancing in management is explained not only by differences in human capital and promotion opportunities, but also particularly by differences in aspirations and by homosocial reproduction processes. The links vary according to the level to which advancing is occurring, with often different factors related to advancing to different levels, as found (Forbes & Piercy, 1991; Hurley & Sonnenfeld, 1998; Mainiero, 1994; Schneer & Reitman, 1995).

Certain key variables explain the process of advancement for this sample. Individuals with high aspirations for management gain entry to management and advance up to middle manager, supporting the impact of motives (McClelland, 1985) and self-concept implementation (Super, 1957) on early career choices. Moreover, the process of advancement is different for men and women. The men of this sample are more likely to advance to all the levels examined when the managerial hierarchy earlier is most male in proportion, whereas the women are likely to advance to lower and middle manager when the managerial hierarchy earlier is less male. Hence, similarity through gender is related to advancing in management, supporting theories of homosocial reproduction (Kanter, 1977) and similarity-attraction (Baron & Pfeffer, 1984). Overall, drive and gender similarity appear related to managerial advancement from entry through to upper manager, in addition to what individuals know and can do (human capital) and to their being in the right place at the right time (opportunities).

Traits and Interpersonal Support and Advancing in Management

Except for advancing to middle manager, traits and gender similarity are usually most related of the variables examined to advancing in management for this sample -- traits up to middle management, and male managerial hierarchies to all levels, but especially helping men to advance to lower manager and advance to upper manager.

The pattern of results for aspirations with respect to advancing to different levels confirms those of Howard and Bray (1988). For the individuals of this sample to enter management and advance to middle manager, they needed to be ambitious and retain that ambition. Their aspirations drove and directed their behavior toward attaining advancement in management. Aspirations may have also increased their advancement through increasing the training or support needed. Future research needs to examine these indirect links. By middle management, the similar levels of aspirations of managers (Table 8) reduced any further link aspirations may have had to their advancement. A masculine, instrumental gender role also helps advance to middle manager, enabling a fit with the nature of the role (Lord et al., 1986). However, aspirations are more consistently linked than masculinity to advancement in this sample, perhaps because they are directly linked to the behavior of advancement.

Although these traits did not predict advancing to upper manager, other traits are likely predictive, as found for achievement motivation and work involvement (Howard & Bray, 1988) and adaptability (Ritchie, 1994; Van Velsor & Leslie, 1995). Hence, future research is needed with other traits to explain advancing to upper manager.

In regard to interpersonal support, managerial advancement is explained in this sample by homosocial reproduction rather than career support, across all transitions and not just early. This is the first study to compare the links of interpersonal support (and several types) for advancement across levels, allowing arguments (e.g., Baron & Pfeffer, 1994) about differences in the links by level to be tested.

In this study, the subordinates who advance into management reported more coaching and provision of challenging work by mentors and sponsorship for promotion 2 years earlier, supporting career tournament theory. Sponsors help protégés win early tournaments (Rosenbaum, 1990). In addition, the women subordinates in this sample with more career encouragement than others advance more. Women may especially need career encouragement when their male counterparts are gaining the benefits of similarity to male managerial hierarchies. However, the links of career support reduce when other variables, especially age, are controlled. The stepdown results for mentor support therefore disagree with prior studies of early career managers. Prior studies have measured promotion not managerial level, and promotions may not translate into the major changes in managerial level measured in this study. Also, most studies were cross-sectional, did not measure actual advancement, nor include age (Dreher & Ash, 1990; Turban & Dougherty, 1994; Whitely & Coetsier, 1993; Whitely, Dougherty, & Dreher, 1991). The present results indicate that mentor career support and career encouragement may be linked to advancement in this sample through age. The finding that younger than older subordinates advance into management is supported by past evidence (Forbes & Piercy, 1991; Nicholson, 1993). Supporting career tournament theory, if subordinates do not win early, they may not win at all, perhaps because they have been knocked out of the tournament, or because being passed over signals lack of ability.

By contrast to career support approaches, homosocial reproduction (Kanter, 1977) and similarity-attraction theories (Baron & Pfeffer, 1994) gain support for explaining advancing to all levels. Men in managerial hierarchies more proportionately male have more likelihood of advancing than men in less male managerial hierarchies, whereas women in hierarchies less proportionately male have more likelihood of advancing than women in more male managerial hierarchies. Hence, men's similarity to decision-makers seems to lead to their being sponsored for advancement rather than women. In the present study, male managerial hierarchies are of similar or greater importance to traits, human capital, and promotion opportunities, especially at entry to management, advancing to lower manager from supervisor level, and advancing to upper manager, and are uniquely linked to advancement beyond those factors. Hence, gender similarity counts. However, the measure of male hierarchy was self-report, reducing its accuracy, but did allow the proportion of men in the immediate managerial hierarchy in particular locations and departments to be assessed.

It was expected that gender similarity to the managerial hierarchy would help advancing to higher than lower levels. The positive links for men, however, are at all levels and the negative links for women are on advancing to lower and middle management. Baron and Pfeffer (1994) may be right that similarity to male hierarchies is related to advancing to lower as well as higher levels in management. They suggested that social cohesion and interdependent work are important at all levels. Indeed, male managerial hierarchies appear to create a "glass floor" for women. The male subordinates and supervisors of this study have more chance of advancing into lower management when in more male managerial hierarchies. By contrast, the female supervisors of this study have more chance of advancing to lower management in managerial hierarchies less male in proportion. This may help explain why the many Australian women first-line supervisors do not translate to similar proportions of lower level managers (Still, 1993). For the women of this sample to advance to middle manager, again they need to be in less male managerial hierarchies, which is not the proportions in these industries (AAA, 1989-1996; Department of Finance, 1995-1996), whereas men are more likely to do so in more male hierarchies. The positive link of male hierarchies for men to advance to upper manager continues to increase men's overrepresentation at high levels. The results thus suggest why women decrease in representation the higher the management level, through the continued dissimilarity at all levels building layer upon layer from early levels.

The oppositely signed links of male hierarchies to men's and women's advancement are found in this sample when contrasting advancers to reducers, not stayers. This may be because reducers provide the sharpest contrast to advancers, but other explanations are also likely. Decision-makers may choose to reduce women in level more than men in male-dominated managerial hierarchies because of similarity-attraction processes.

It must also be noted that there are alternative interpretations for the male hierarchy effects, especially gender-role stereotypes – the automatic ascription of “masculine” traits to men and “feminine” traits to women. Because the managerial role is male-typed in attributes, decision makers may select and advance men rather than women (Heilman, 1997), and do so more in male-dominated hierarchies where women in management roles most violate gender role expectations (Eagly, Karau, & Makhijani, 1995; Eagly, Makhijani, & Klosky, 1992). Moreover, the private/public sector loads on the male managerial hierarchy factor. It may be that less specified selection practices, as found in the private than public sector, are associated with male hierarchies. These practices lead to more bias from gender stereotypes in favor of men than where there is more specified, structured decision-making (Heilman, 1997).

In this study, social processes may not have been more related to advancing to higher than lower levels because the most relevant factors were not examined. Networks (Burt, 1992) and the politics associated with promotion (Ruderman & Ohlott, 1994; Ruderman, Ohlott, & Kram, 1995) were found to influence advancing to higher levels, more helpfully for men. Hence, future research needs to test the links across levels of networks and politics.

Why do Supervisors and Managers Reduce in Level?

This study provides a rare prospective prediction of reducing versus advancing. Prior studies concluded that upper managers and executives derail mostly because of poor managerial and personal skills (Van Velsor & Leslie, 1995). The present results (Tables 7 to 9) indicate that reducing, as opposed to advancing, is as much linked to fewer opportunities (e.g., job markets) and to social processes (i.e., homosocial reproduction) as to individual skills and knowledge (i.e., human capital). This difference in results may be due to prior studies using retrospective reports by others, increasing the likelihood of internal attributions to the derailed. Or they may be because the respondents of this study are not permanently derailed, or because employees lower in managerial level derail for different reasons than executives, and times of restructuring result in derailment not just from individual reasons.

Summary of the Process of Advancing in Management for This Sample

For this sample, there appears to be a process of managerial advancement. However, the results have limited generalizability. They can only apply to respondents who remained in the study over time. Some dropped out because they were no longer employed at all or were not fulltime, or because of child-rearing, and for other unknown reasons. The advancement implications for those who withdrew cannot be inferred. In addition, the sample was mostly public servants and finance, property and business service employees, and thus not representative. The public service in particular has highly specified selection and promotion practices. Moreover, non-self-report measures may have given different results.

Overall, traits and interpersonal support help advance into management. Aspirations for management help subordinates advance into management through drive. Career support helps, including encouragement for women, but may operate only at younger ages. Younger than older subordinates enter management, suggesting that winning tournaments early helps. Men subordinates gain advancement into management through their similarity to the male managerial hierarchy. However, human capital/credentials do not appear to help entry to management (Table 7). This may be because subordinates have insufficient human capital to translate into the productivity needed to advance into management, or that productivity has not been sufficiently increased with this amount of tenure. Promotion opportunities also do not help subordinates advance into management. Subordinates have not had the managerial promotions to signal who to advance. They are also not in jobs in the highest occupation type (managerial and administrative), and thus not in the occupation in the primary job market which provides the most opportunity for skill acquisition and promotion paths.

To advance to middle manager, traits and similarity remain relatively important. In particular, lower managers need to continue to aspire to higher managerial roles to advance. Men continue to advance through similarity in male hierarchies, whereas the glass floor begins to operate for women, reducing their advancement beyond supervisor and lower manager from dissimilarity. The factors most important to

advance into middle management are, however, performance- and opportunity-based (Tables 7, 8). Human capital investments now provide returns, in mid-career. The results support the lagged effects on productivity from human capital with tenure, and are consistent with the concave age-earning profiles found (Becker, 1993). Supervisors' and lower managers' earlier investments in their education and training and development pay off with their increased work tenure. Promotion opportunities are now also realised (Tables 7, 8). Those supervisors and lower managers in primary job markets (i.e., managerial and administrative jobs) rather than secondary markets (e.g., clerical jobs) have the opportunities to gain the skills and career paths needed to advance later to middle manager (Markham et al., 1987). Those with a history of managerial promotions signal ability and career velocity, and are advanced to middle manager by decision makers, supporting career tournament theory (Rosenbaum, 1990).

The trait, human capital, and job market influences on advancing wane beyond middle manager in this sample. Middle managers with the potential for further advancement are similar in aspirations (Howard & Bray, 1988) reducing their effects. Returns on human capital of education and training and development have been found to lessen in late career (Becker, 1993), similar to the effects found in studies of stages of advancement (Forbes & Piercy, 1991). Managers are now all in primary job markets (i.e., managerial and administrative occupations) thus resulting in similar opportunities from occupation type. To advance to upper manager, men's similarity to the managerial hierarchy remains relevant. Most related is the earlier opportunity of broadening challenging work experiences, which now provides returns. Such experiences have been found to be critical to advancing to high management levels (Forbes & Piercy, 1991; Mainiero, 1994).

Further Limitations, Future Research, and Practical Implications

This study has several further limitations. Although its design has several strong features for explanation by being prospective, measuring actual advancement, and comparing across transitions, cause-effect explanations cannot be inferred. Hence, the study requires replication. Although the organizations in this sample retained their major management levels and proportions of managers, the study was conducted in times of restructuring and this may have affected managerial advancement. Within-firm factors were not taken into account. Moreover, the public service and finance industries are argued to have better opportunities for women's managerial advancement than others (International Labour Organization, 1997), and thus gender differences may have been fewer. Moreover, little of managerial advancement was explained at some transitions, especially entry to management. Perhaps this contrast is the least stark, and thus least likely to be explained. However, other variables need to be examined in future research. A myriad of other variables are related to advancing in management (e.g., job moves). Classifying the respondents into advancers, stayers, and reducers also loses information, and finer differentiation is required. The classification would have changed with a longer time lag and more transitions, and individuals may have been promoted shortly after the survey distribution. Future research needs to follow the same respondents through more than one transition in order to capture the process of advancement.

The results suggest that nonperformance-based or nonmeritorious factors in terms of aspirations and homosocial reproduction help individuals gain management jobs and rise up the hierarchy. This may not result in the most effective managers being advanced, or in equity in terms of women advancing in management. Organizations need to intervene to increase advancement on merit and equity and reduce advancement from ambition and homosocial reproduction. Implementing policies to remove the impact of homosocial reproduction for advancing into lower management, and onto middle and upper management is desirable. Targeted affirmative action programs need to continue. Targeted EEO and AA programs have increased women's managerial advancement, especially entry to management (Tharenou's, 1997a review). Job-relevant criteria (e.g., performance) should be used for advancement, using structured, objective selection and promotion practices. Meritorious women should be hired for managerial positions not previously or little held by women, which should lead to an increase in the proportion of women in management, as found (Pfeffer et al., 1995).

REFERENCES

- Adler, N.J., & Izraeli, D.N. 1994. Where in the world are the women executives. Business Quarterly, 159(1): 89-94.
- Affirmative Action Agency. 1989-1996. Affirmative Action Agency: Annual Reports. Canberra: Australian Government Publishing Service.
- Australian Bureau of Statistics. 1996a. 1978-95 Labour force Australia. (Cat. No. 6204.0). Canberra: Australian Government Publishing Service.
- Australian Bureau of Statistics. 1996b. Labour force Australia. (Cat. No. 6203.0). Canberra: Australian Government Publishing Service.
- Baron, J.N., & Pfeffer, J. 1994. The social psychology of organizations and inequality. Social Psychology Quarterly, 57: 190-209.
- Becker, G.S. 1993. Human capital. Chicago: University of Chicago Press.
- Bem, S.L. 1981. Bem Sex-Role Inventory. New York: Consulting Psychologists Press.
- Bray, J.H., Maxwell, S.E., & Cole, D. 1995. Multivariate statistics in family psychology research. Journal of Family Psychology, 9: 144-160.
- Brett, J.M., & Stroh, L.K. 1997. Jumping ship: Who benefits from an external labor market strategy? Journal of Applied Psychology, 82: 331-341.
- Burt, R.S. 1992. Structural holes. Cambridge, MA: Harvard University Press.
- Byrne, D. 1971. The attraction paradigm. New York: Academic Press.
- Chusmir, L.H., & Koberg, C.S. 1991. Relationship between self-confidence and sex-role identity among managerial women and men. Journal of Social Psychology, 131: 781-790.
- Cox, T.H., & Harquail, C.V. 1991. Career paths and career success in the early career stages of male and female MBAs. Journal of Vocational Behavior, 39: 54-75.
- Department of Employment, Education, Training and Youth Affairs. 1997. DEETYA job prospects: Futures 6. Canberra: DEETYA Analysis and Evaluation Division.
- Department of Employment and Industrial Relations. 1987. Australian standard classification of occupations. Canberra: Australian Government Publishing Service.
- Department of Finance. 1995-1996. Australian Public Service statistical bulletin 1995-1996. Canberra: Commonwealth Government Publishing Service.
- Dreher, G.F., & Ash, R.A. 1990. A comparative study of mentoring among men and women in managerial positions. Journal of Applied Psychology, 75: 539-546.
- Duarte Silva, A.P., & Stam, A. 1995. Discriminant analysis. In L.G. Grimm & P.R. Yarnold (Eds.), Reading and understanding multivariate statistics: 277-318. Washington, DC: American Psychological Association.
- Eagly, A.H., Karau, S.J., & Makhijani, M.G. 1995. Gender and the effectiveness of leaders: A meta-analysis. Psychological Bulletin, 117: 125-145.

- Eagly, A.H., Makhijani, M.G., & Klonsky, B.G. 1992. Gender and the evaluation of leaders: A meta-analysis. Psychological Bulletin, 111: 3-22.
- Fagenson, E.A. 1990. Perceived masculine and feminine attributes as a function of sex and level in the organizational hierarchy. Journal of Applied Psychology, 75: 204-211.
- Feldman, D.C., & Weitz, B.A. 1991. From the invisible hand to the gladhand. Human Resource Management, 30: 237-257.
- Ferris, G.R., Buckley, M.R., & Allen, G.M. 1992. Promotion systems in organizations. Human Resource Planning, 15: 47-68.
- Forbes, J.B., & Piercy, J.E. 1991. Corporate mobility and paths to the top. NY: Quorum Books.
- Forbes, J.B., & Wertheim, S.E. 1995. Promotion, succession, and career systems. In R. Ferris, S.D. Rosen, & D.T. Barnum (Eds.), Handbook of human resource management: 494-510. Cambridge, MA: Blackwell Business.
- Gordon, D.M. 1996. Fat and mean. New York: The Free Press.
- Hanson Frieze, I., Olson, J.E., & Cain Good, D. 1990. Perceived and actual discrimination in salaries of male and female managers. Journal of Applied Social Psychology, 20: 46-67.
- Heilman, M.E. 1997. Sex discrimination and the affirmative action remedy: The role of sex stereotypes. Journal of Business Ethics, 16: 877-889.
- Hogan, R., Curphy, G.J., & Hogan, J. 1994. What do we know about leadership? American Psychologist, 49: 493-504.
- Howard, A., & Bray, D.W. 1988. Managerial lives in transition. NY: Guilford Press.
- Huberty, C.J., & Lowman, L.L. 1997. Discriminant analysis via statistical packages. Educational and Psychological Measurement, 57: 759-784.
- Hurley, A.E., & Sonnenfeld, J. 1998. The effect of organizational experience on managerial career attainment in an internal labor market. Journal of Vocational Behavior, 52: 172-190.
- International Labour Organization. 1997. Breaking through the glass ceiling: Women in management. Geneva: International Labour Office.
- Judge, T.A., Cable, D.M., Boudreau, J.W., & Bretz, R.D. 1995. An empirical investigation of the predictors of executive career success. Personnel Psychology, 48: 485-519.
- Kanter, R.M. 1977. Men and women of the corporation. New York: Basic Books.
- Kirchmeyer, C. 1995. Demographic similarity to the work group. Journal of Organizational Behavior, 16: 67-83.
- Konrad, A.M., & Pfeffer, J. 1991. Understanding the hiring of women and minorities in educational institutions. Sociology of Education, 64: 141-157.
- Kram, K.E. 1983. Phases of the mentor relationship. Academy of Management Journal, 26: 608-625.

- Lenney, E. 1991. Sex roles. The measurement of masculinity, femininity, and androgyny. In J.P. Robinson, P.R. Shaver, & L.S. Wrightsman (Eds.), Measures of personality and social psychological attitudes: 573-660. New York: Academic Press.
- Levinson, H. 1994. Why the behemoths fall. American Psychologist, 49: 428-436.
- Lewis, G.B. 1992. Men and women towards the top. Public Personnel Management, 21: 473-491.
- Lord, R.G., De Vader, C.L., & Alliger, G.M. 1986. A meta-analysis of the relationship between personality traits and leadership perceptions. Journal of Applied Psychology, 71: 402-410.
- Luthans, F. 1988. Successful vs effective real managers. The Academy of Management Executive, 11: 127-132.
- Mainiero, L.A. 1994. Getting anointed for advancement: The case of executive women. Academy of Management Executive, 8 (2): 53-67.
- Markham, W.T., Harlan, S.L., & Hackett, E.J. 1987. Promotion opportunity in organizations. Research in Personnel and Human Resources Management: 223-287. New York: JAI Press.
- McClelland, D.C. 1985. Human motivation. Glenview, IL: Scott, Foresman.
- Melamed, T. 1996. Career success: An assessment of a gender-specific model. Journal of Occupational and Organizational Psychology, 69: 217-242.
- Murrell, A.J., Olson, J., & Hanson Frieze, I. 1995. Sexual harassment and gender discrimination. Journal of Social Issues, 51: 139-149.
- Nicholson, N. 1993. Purgatory or place of safety? Human Relations, 46: 1369-1389.
- Pfeffer, J., Davis-Blake, A., & Julius, D.J. 1995. The effect of affirmative action officer salary changes on managerial diversity. Industrial Relations, 34: 73-94.
- Piercy, J.E., & Forbes, J.B. 1991. The phases of the chief executive's career. Business Horizons, 34: 20-22.
- Ragins, B.R., & McFarlin, D.B. 1990. Perceptions of gender roles in cross-gender mentoring relationships. Journal of Vocational Behavior, 37: 321-339.
- Ragins, B.R., & Sundstrom, E. 1989. Gender and power in organizations. Psychological Bulletin, 105: 51-88.
- Ritchie, R.J. 1994. Using the assessment center method to predict senior management potential. Consulting Psychology Journal, 46: 16-23.
- Rosenbaum, J.E. 1984. Career mobility in a corporate hierarchy. NY: Academic Press.
- Rosenbaum, J.E. 1990. Structural models of organizational careers. In R.L. Breiger (Ed.), Social mobility and social structure: 272-397. Cambridge: Cambridge University Press.
- Ruderman, M.N., & Ohlott, P.J. 1994. The realities of management promotion. Greensboro, NC: Center for Creative Leadership.
- Ruderman, M.N., Ohlott, P.J., & Kram, K.E. 1995. Promotion decisions as a diversity practice. Journal of Management Development, 14(2): 6-23.

- Saari, L.M., Johnson, T.R., McLaughlin, S.D., & Zimmerle, D.M. 1988. A survey of management training and education practices in U.S. companies. Personnel Psychology, 41: 731-744.
- Scandura, T.A. 1992. Mentorship and career mobility: An empirical investigation. Journal of Organizational Behavior, 13: 169-174.
- Scandura, T.A., & Schriesheim, C.A. 1994. Leader-member exchange and supervisor career mentoring as complementary constructs in leadership research. Academy of Management Journal, 37: 1588-1602.
- Schneer, J.A., & Reitman, F. 1994. The importance of gender in mid-career. Journal of Organizational Behavior, 15: 199-207.
- Schneer, J.A., & Reitman, F. 1995. The impact of gender as managerial careers unfold. Journal of Vocational Behavior, 47: 290-315.
- Schneer, J.A., & Reitman, F. 1997. The interrupted managerial career path: A longitudinal study of MBAs. Journal of Vocational Behavior, 51: 411-434.
- Schor, S.S. 1997. Separate and unequal. Business Horizons, 40 (5): 51-58.
- Sessa, V., & Campbell, R. 1997. Selection at the top. Greensboro, NC: Center for Creative Leadership.
- Still, L.V. 1993. Where to from here? Sydney, NSW: Business and Professional Publishing.
- Stroh, L.H., & Reilly, A.H. 1995. Making or buying employees. Journal of Applied Business Research, 10(4): 12-18.
- Super, D.E. 1957. The psychology of careers. New York: Harper.
- Tabachnick, B., & Fidell, L.S. 1989. Using multivariate statistics. New York: Harper and Row.
- Tharenou, P. 1995. Correlates of women's chief executive status. Journal of Career Development, 21: 201-212.
- Tharenou, P. 1997a. Managerial career advancement. In C.L. Cooper and I.T. Robertson (Eds.), International Review of Industrial and Organizational Psychology: 39-94. New York: Wiley.
- Tharenou, P. 1997b. Organizational, job and personal predictors of employee participation in training and development. Applied Psychology: An International Review, 46: 111-134.
- Tharenou, P., & Conroy, D.K. 1994. Men and women managers' advancement. Applied Psychology: An International Review, 43: 5-31.
- Tharenou, P., Latimer, S., & Conroy, D.K. 1994. How do you make it to the top? Academy of Management Journal, 37: 899-931.
- Tharenou, P., & Terry, D. J. 1998. Reliability and validity of scores on scales to measure managerial aspirations. Educational and Psychological Measurement, 58: 474-491.
- Turban, D.B., & Dougherty, T.W. 1994. Role of protégé personality in receipt of mentoring and career success. Academy of Management Journal, 37: 688-702.
- Van Velsor, E., & Leslie, J.B. 1995. Why executives derail. Academy of Management Executive, 9(4): 62-73.

- Weinfurt, K.P. 1995. Multivariate analysis of variance. In L.G. Grimm & P.R. Yarnold (Eds.), Reading and understanding multivariate statistics: 245-276. Washington, DC: American Psychological Association.
- Whitely, W.T., & Coetsier, P. 1993. The relationship of career mentoring to early career outcomes. Organization Studies, 14: 419-441.
- Whitely, W.T., Dougherty, T.W., & Dreher, G.F. 1991. Relationship of career mentoring and socioeconomic origin to managers' and professionals' early career progress. Academy of Management Journal, 34: 331-351.
- Wright, R.E. 1995. Logistic regression. In L.G. Grimm & P.R. Yarnold (Eds.), Reading and understanding multivariate statistics: 217-244. Washington, DC: American Psychological Association.

DEPARTMENT OF MANAGEMENT

1998 WORKING PAPERS

- 1/98 Alison Dean, "Issues and Challenges in Training HRM Practitioners by Distance Education" (January, pp.16).
- 2/98 Simon Moss, "Exposing Biased Samples: Derivation of the Sample-Subdivision Method" (January, pp.10).
- 3/98 Ian Roos, "Technical Regulation and Work Autonomy: Human Resource Management in a Specific Pathogen Free Animal Unit" (January, pp.15).
- 4/98 Loong Wong, "The State, Economic Growth and Environment in Malaysia" (January, pp.21).
- 5/98 Tim Haslett, "The Senge Archetypes: From Causal Loops to Computer Simulation" (January, pp.22).
- 6/98 Loong Wong, "Management Theory Meets the 'Other'" (January, pp.15).
- 7/98 Tim Haslett, "Implications of Systems Thinking for Research and Practice in Management" (January, pp.19).
- 8/98 Jan Schapper, "'We had no Choice. It was Inevitable.' Some Thoughts on Parallel Processes Between Researcher and Researched in Response to Organizational Change" (January, pp.17).
- 9/98 Tim Haslett, "The Dynamics of Garbage Collection: A Case Study of Privatization" (January, pp.17).
- 10/98 Tim Haslett, Simon Moss, Charles Osborne and Paul Ramm, "The Application of Local Rules in Self Ordering Systems" (January, pp.17).
- 11/98 Ramanie Samaratunge, "Decentralisation and Development: Partners in the 21st Century?" (January, pp.15).
- 12/98 Tim Haslett, "Teaching Systems Thinking and Theory: Management Education at Monash University" (January, pp.11).
- 13/98 Tim Haslett, "Building the Learning Organization - The Practical Steps" (January, pp.10).
- 14/98 Mary Anderson and Daniel Moore "Classroom Globalization, "An Investigation of Teaching Methods to address the phenomemon of Students from Multiple National Cultures in business School Classrooms" (January, pp.7).
- 15/98 Judy H. Gray and Iain L. Densten, "Analysis of Latent and Manifest Variables in a Study of Small Business Strategy" (January, pp.13).
- 16/98 Kathryn M. Antioch, Chris Selby-Smith and Chris Brook, "Pathways to Cost Effective Prevention, Detection and Treatment of Prostrate Cancer in Australia: Achieving Goals for Australia's Health to 2000 and beyond" (January, pp.31).
- 17/98 Chris Selby-Smith, "The Impact of Vocational Education and Training Research on Policy, Practice and Performance in Australia" (January, pp.17).
- 18/98 Mile Terziovski, Amrik Sohal and Simon Moss "Longitudunal Analysis of Quality Management Practices in Australian Organisations (January, pp.14).
- 19/98 Linda Brennan and Lynne Bennington, "Concepts in Conflict: Studies and Customers" (January, pp.15).
- 20/98 Dianne Waddell, "The Role Responsibilities Quality Managers" (January, pp.10).
- 21/98 Dianne Waddell, "Resistance to Change: A Company's Experience" (January, pp.13).
- 22/98 Iain L. Densten and Judy H. Gray, "Is Management-by-Exception a Single Factor? (January, pp.13).
- 23/98 Mile Terziovski, "Best Predictors of High Performance Quality Organisations: Evidence from Australia and New Zealand" (March, pp.16).
- 24/98 Ronald W. Edwards and Peter J. Buckley, "Choice Ownership Mode and Entry Strategy: The Case of Australian Investors in the UK" (January, pp.18).
- 25/98 Tim Haslett and Charles Osborne, "Local Decision Rules: Complexity or Chaos?" (January, pp.14).
- 26/98 Ian Roos and T. Makela, "Employee Reactions to Controlled work Environments: The Dispensing of Anti-Cancer Drugs in Hospital Pharmacies" (January, pp.29).
- 27/98 Tim Haslett, Kosmas X. Smyrnios and Charles Osborne, "A Cusp Catastrophe Analysis of Anxiety Levels" (January, pp.18).
- 28/98 Megan Seen and Anne Rouse, "Quality Certification: Lessons from Three Software Development Organisations" (March, pp.13).
- 29/98 E. Anne Bardoel and Tim Haslett, "The Use of Systems Thinking and Archetypes in Teaching Organisational Behavior" (March, pp.10).
- 30/98 Megan Seen and Anne Rouse, "The Effect of Quality Certification on the Software Development Process" (March, pp.13).
- 31/98 Michael Morrison and Mile Terziovski, "The Relationship Between Quality Management Practices and Learning Outcomes: In the Australian Retail Hardware Sector" (March, pp.15).
- 32/98 Marjorie Jerrard, "Dinosaurs are not Dead - The Success of the AMIEU (QLD) in Coping with Industrial Relations Change and AWAS" (March, pp.20).
- 33/98 Lynne Bennington and James Cummane, "Customer Satisfaction, Loyalty and Public Services" (March, pp.19).

1998 WORKING PAPERS

- 34/98 Alison Dean, "Managing Quality Initiatives in Services: JIT Delivers but BPR Fails" (March, pp.11).
- 35/98 Marjorie Jerrard, "A Surprising Struggle? The AMIEU(Qld) and the Fight for Equal Wages in the Meat Processing and Export Industry in the 1950s and 1960s" (March, pp.15).
- 36/98 Julie Wolfram Cox, Helen De Cieri and Marilyn Fenwick, "The Mapping of Strategic International Human Resource Management: Theory Development or Intellectual Imperialism?" (April, pp.23).
- 37/98 Max Coulthard and Timothy James Grogan, "The Impact of a Firm's Strategic Orientation on Environmental Scanning Practices in Two Australian Export Industries" (April, pp.13).
- 38/98 John W. Selsky, "'Even we are Sheeps': Cultural Displacement in Management Education" (April, pp.13).
- 39/98 Rowena Barrett, "Industrial Relations and Management Style in Small Firms" (April, pp.18).
- 40/98 Loong Wong, "Why *Jerry Maguire* succeeds but not *William Lomax*: Management, Cultures and Postmodernism" (April, pp.12).
- 41/98 Sarah Turberville, "The Nature of Employee Financial Participation: Evidence from the Australian Workplace" (June, pp.32).
- 42/98 Marilyn S. Fenwick, Helen L. De Cieri and Denise E. Welch "Cultural and Bureaucratic Control in MNEs: The Role of Expatriate Performance Management" (June, pp.16).
- 43/98 Stuart Orr and Amrik S. Sohal "Technology and Global Manufacturing: Some German Experiences" (June, pp.9).
- 44/98 Stuart Orr and Amrik S. Sohal "Global Manufacturing Issues: The Case of Siemens AG" (June, pp.12).
- 45/98 Robert Millen and Amrik S. Sohal "Planning Processes for Advanced Manufacturing Technology by Large American Manufacturers" (June, pp.15).
- 46/98 Amrik S. Sohal and Lionel Ng "The Role and Impact of Information Technology in Australian Businesses" (June, pp.25).
- 47/98 Marcia Perry, Amrik S. Sohal and Peter Rumpf "Quick Response Supply Chain Alliances in the Australian Textiles, Clothing and Footwear Industry" (June, pp.16).
- 48/98 Andrea Howell and Amrik S. Sohal "Human Resources and training - The Core of Quality Improvement Initiatives" (June, pp.18).
- 49/98 John Gordon and Amrik S. Sohal "Assessing Manufacturing Plant Competitiveness: An Empirical Field Study" (June, pp.19).
- 50/98 Milé Terziovski and Danny Samson "Increasing and Sustaining Performance through an Integrated Quality Strategy" (June, pp.14).
- 51/98 Judy H. Gray "Self-Employment as a Career Option for Redundant Workers" (September, pp.9).
- 52/98 Aminu Mamman "Towards Understanding Attitudes to Pay Systems: Cultural, Socio-Psychological, Economic and Organizational Influences" (September, pp.20).
- 53/98 Aminu Mamman "Adoption and Modification of Human Resource Management Ideas (HRMI) in Organizations: The Impact of Strategy, Organizational Contingencies, and National Culture" (September, pp.16).
- 54/98 Len Pullin and Ali Haidar "Power and Employment Relationship in Victorian Local Government: Responses from Gippsland Senior Officers" (September, pp.13).
- 55/98 Ron Edwards "From Powerless to Empowered: A Case Study and Critique of Production Teams" (September, pp.17).
- 56/98 Deirdre O'Neill and Linda McGuire "Microeconomic Reform and the Third Sector - The Australian Experience" (September, pp.18).
- 57/98 Deirdre O'Neill and Owen Hughes "Is There a New Model of Public Sector HRM" (September, pp.9).
- 58/98 Richard Winter, James Sarros, and George Tanewski "Quality of Work Life of Academics in Australian Universities: A Pilot Study" (September, pp.8).
- 59/98 Phyllis Tharenou "Going Up?: Are Traits and Informal Social Processes Important to Advancing Upwards in Management?" (September, pp.30).
- 60/98 Damian Morgan "Adventure Tourists on Water: Linking Expectations, Affect, Achievement and Enjoyment to the Adventure" (September, pp.15).
- 61/98 Kerrie Hose "'Strategic Unionism': Not Enough to Stem the Decline in Trade Union Membership?" (September, pp.11).
- 62/98 Dianne Waddell and Amrik S. Sohal "Measuring Resistance to Change: An Instrument and its Application" (September, pp.14).