Transformational, Transactional, and Laissez-Faire Leadership Styles: A Meta-Analysis Comparing Women and Men

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A meta-analysis of 45 studies of transformational, transactional, and laissez-faire leadership styles found that female leaders were more transformational than male leaders and also engaged in more of the contingent reward behaviors that are a component of transactional leadership. Male leaders were generally more likely to manifest the other aspects of transactional leadership (active and passive management by exception) and laissez-faire leadership. Although these differences between male and female leaders were small, the implications of these findings are encouraging for female leadership because other research has established that all of the aspects of leadership style on which women exceeded men relate positively to leaders' effectiveness whereas all of the aspects on which men exceeded women have negative or null relations to effectiveness.

As more women in industrialized nations enter leadership roles in society, the possibility that they might carry out these roles differently than men attracts increasing attention. Women's behavior is under scrutiny, at least in part, because women are infrequent occupants of high-level leadership roles (Miller, Taylor, & Buck, 1991). This rarity of women in elite leadership roles, combined with their frequent occupancy of lower level leadership roles, is easily documented. For example, whereas women currently make up 46% of managers and administrators in the United States (U.S. Bureau of Labor Statistics, 2002), in the companies of the Fortune 500 women constitute only 5% of top corporate officers and 1% of chief executive officers (CEOs; Catalyst, 2002a, 2002b). This very small representation of women as corporate executives also prevails in Canada (Catalyst, 2000) and other industrialized nations (Wirth, 2001). Scrutiny of the Global Fortune 500 reveals fewer than 1% women among its CEOs ("The 2002 Global 500," 2002). Although political leadership shows increasing representation of women in many nations (Adler, 1999), women remain rare in the most powerful political roles, just as in elite roles in business (e.g., Center for the American Woman and Politics, 2003; United Nations, 2002). To add crucial knowledge to analyses of women's functioning as leaders, we evaluate in this article whether women's typical leadership styles differ from or are the same as men's typical leadership styles and whether any differences could be an asset or a barrier to women who seek to rise in hierarchies of power and influence. To answer these questions, we examine research that compared women and men on transformational, transactional, and laissez-faire leadership styles, which have been the foci of a large amount of research that has uncovered some of the determinants of effective leadership (see Bass, 1985, 1997, 1998).

The possibility that women and men differ in their typical leadership behavior is important because leaders' own behavior is a major determinant of their effectiveness and chances for advancement. In this article, we focus on leadership style, which we define as relatively stable patterns of behavior displayed by leaders. Claims about the distinctive leadership styles of women abound, especially in treatments by writers of trade books (e.g., Book, 2000; Helgesen, 1990; Loden, 1985; Rosener, 1995). In analyses that draw on personal experience in organizations and on informal surveys and interviews of managers, these writers have maintained that female leaders, compared with male leaders, are less hierarchical, more cooperative and collaborative, and more oriented to enhancing others' self-worth. Moreover, such authors have also argued that these patterns of behavior make women superior leaders for contemporary organizations. This theme of female excellence in leadership has been echoed by journalists—for example, in *Business Week's* special report that appeared under

the headline, "As leaders, women rule: New studies find that female managers outshine their male counterparts in almost every measure" (Sharpe, 2000) and in *Fast Company's* article on female CEOs, which declared that "the future of business depends on women" (Hefferman, 2002, p. 9).

Academic writers have presented a range of views concerning sex differences and similarities in leadership styles (see Eagly & Johnson, 1990).[1] Most often they have maintained that female and male leaders do not differ (e.g., Bartol & Martin, 1986; Nieva & Gutek, 1981; van Engen, van der Leeden, & Willemsen, 2001) or have minimized the importance of any differences that researchers have reported (e.g., Powell, 1990). One rationale underlying this discounting of differences in leadership style is that they are the result of differences in the types of leader roles in which men and women are positioned. Providing an early statement of this viewpoint, Kanter (1977) argued that women behave in ways that reflect their lesser power within organizations and that comparisons of men and women who occupy the same organizational roles do not yield differences (see also Kark, 2001).

Given the provocative claims about female leaders featured in books and magazine articles directed to the general public and the frequent discounting of these claims by academic writers, resolution of these competing views should proceed through careful synthesis of the research that is most relevant to these claims. To contribute to this endeavor, we examined the research literature on transformational, transactional, and laissez-faire leadership styles and located a substantial group of studies that had compared women and men on these styles. This article presents our quantitative synthesis of these studies.

Research on the Leadership Styles of Women and Men

Earlier Research

Most information on male and female leadership styles derives from research conducted prior to 1990, which typically distinguished between two approaches to leadership: *task-oriented* style, defined as a concern with accomplishing assigned tasks by organizing task-relevant activities, and *interpersonally oriented* style, defined as a concern with maintaining interpersonal relationships by tending to others' morale and welfare. This distinction between task and interpersonal styles was introduced by Bales (1950) and developed further by leadership researchers at Ohio State University (e.g., Hemphill & Coons, 1957) and the University of Michigan (e.g., Likert, 1961). A smaller number of studies distinguished between leaders who (a) behave democratically and allow subordinates to participate in decision making or (b) behave autocratically and discourage subordinates from participating in decision making. This dimension of leadership, ordinarily termed *democratic versus autocratic* leadership or *participative versus directive* leadership, followed from earlier experimental studies of leadership style (e.g., Lewin & Lippitt, 1938) and has since been developed by a number of researchers (e.g., Vroom & Yetton, 1973). To determine whether women and men differed in these leadership styles that were the traditional focus of research, Eagly and Johnson (1990) conducted a meta-analysis of the 162 available studies that had compared men and women on these styles.

This research synthesis (Eagly & Johnson, 1990), which surveyed studies from the period 1961–1987, found that styles were somewhat gender stereotypic in laboratory experiments that used student participants and in assessment studies that investigated the leadership styles of people not selected for occupancy of leadership roles (e.g., samples of employees). In these laboratory experiments and assessment studies, women, more than men, tended to manifest relatively interpersonally oriented and democratic styles, and men, more than women, tended to manifest relatively task-oriented and autocratic styles. In contrast, sex differences were more limited in organizational studies assessing managers' styles. The only demonstrated difference between female and male managers was that women adopted a somewhat more democratic or participative style and a less autocratic or directive style than men did. Male and female managers did not differ in their tendencies to use interpersonally oriented and task-oriented styles. In addition, a new meta-analysis that surveyed studies published between 1987 and 2000 produced similar findings (van Engen, 2001). These meta-analytic results are consistent with an important finding from a meta-analysis of evaluations of female and male leaders whose behavior had been experimentally equated (Eagly, Makhijani, & Klonsky, 1992). In studies in this paradigm, people reacted more negatively to women than men who adopted an autocratic and directive leadership style. If the findings from the meta-analyses of leadership styles and the meta-analysis of evaluations of leaders are considered together, it thus appears that, compared with men, women less frequently adopt the type of style that produces particularly unfavorable evaluations of their behavior.

Despite these informative syntheses of the leadership styles that were popular research topics before 1990, such measures do not provide an exhaustive description of leaders' behavior. Moreover, the implications for leaders' effectiveness of the finding that female managers have a relatively democratic and participative style are not clear-cut because this style's effectiveness is contingent on various features of group and organizational environments (Foels, Driskell, Mullen, & Salas, 2000; Gastil, 1994; Vroom & Yetton, 1973). Therefore, the linked issues of the leadership styles of men and women and these styles' effectiveness have awaited further exploration.

Contemporary Research

The shift of a substantial number of leadership researchers to studying new types of styles in the 1980s and 1990s (e.g., Bass, 1985, 1998) opened opportunities for further investigations of the leadership styles of men and women. This new work emphasized that effective leaders inspire their followers and nurture their ability to contribute to the organization. This approach initially emerged in Burns's (1978) delineation of a type of leadership that he labeled *transformational*. As subsequently elaborated by Bass (1985, 1998), transformational leadership involves establishing oneself as a role model by gaining the trust and confidence of followers. Such leaders state future goals and develop plans to achieve them. Skeptical of the status quo, they innovate, even when the organization that they lead is generally successful. By mentoring and empowering their followers, transformational lead-

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[1] In this article, the terms *sex* and *sexes* denote the grouping of people into female and male categories. The terms *sex differences* and *similarities* are applied to describe the results of comparing these two groups. The term *gender* refers to the meanings that societies and individuals ascribe to these female and male categories. We do not intend to use these terms to give priority to any class of causes that may underlie sex and gender effects.

Table 1

Definitions of Transformational, Transactional, and Laissez-Faire Leadership Styles in the MLQ–5X

MLQ–5X scales with subscales	Description of leadership style
Transformational	
Idealized Influence (attribute)	Demonstrates qualities that motivate respect and pride from association with him or her
Idealized Influence (behavior)	Communicates values, purpose, and importance of organization's mission
Inspirational Motivation	Exhibits optimism and excitement about goals and future states
Intellectual Stimulation	Examines new perspectives for solving problems and completing tasks
Individualized Consideration	Focuses on development and mentoring of followers and attends to their individual needs
Transactional	
Contingent Reward	Provides rewards for satisfactory performance by followers
Management by Exception (active)	Attends to followers' mistakes and failures to meet standards
Management by Exception (passive)	Waits until problems become severe before attending to them and intervening
Laissez-Faire	Exhibits frequent absence and lack of involvement during critical junctures

Note. MLQ–5X = Multifactor Leadership Questionnaire—Form 5X.

ers encourage them to develop their full potential and thereby to contribute more capably to their organization. Many of these same qualities also were studied by researchers who labeled this future-oriented, empowering style as *charismatic* leadership (see Conger & Kanungo, 1998).

Burns (1978) and other researchers (see Avolio, 1999; Bass, 1998) contrasted transformational leaders to *transactional* leaders, who appeal to subordinates' self-interest by establishing exchange relationships with them. This type of leadership involves managing in the more conventional sense of clarifying subordinate responsibilities, rewarding them for meeting objectives, and correcting them for failing to meet objectives. Although empirically separable, these two types of leadership—transformational and transactional—are both displayed by effective leaders. In addition to these two styles, these researchers distinguished a *laissez-faire* style that is marked by a general failure to take responsibility for managing.

The most widely used measure of transformational and transactional leadership is the Multifactor Leadership Questionnaire, known as the MLQ (Avolio, Bass, & Jung, 1999). Although there are several versions of this measure (see Bass, 1985, 1998), the most popular is the Form 5X (MLQ–5X; Avolio & Bass, 2002), a factor-analytically derived, 36-item measure. As shown in Table 1, this instrument measures transformational leadership by five subscales, transactional leadership by three subscales, and laissez-faire leadership by one scale. Each of the nine resulting measures is represented by four items.[2] Although the MLQ has been subjected to considerable psychometric scrutiny (e.g., Antonakis, Avolio, & Sivasubramaniam, 2003; Avolio et al., 1999) and used in a large number of studies (see Center for Leadership Studies, 2000a), several other researchers have produced their own measures of transformational and transactional leadership (e.g., Alimo-Metcalfe & Alban-Metcalfe, 2001; Carless, Wearing, & Mann, 2000).

Because researchers conceptualized transformational leadership as contributing to the success of organizations, any sex difference

in the tendency to manifest this style might produce a sex difference in leaders' effectiveness. Substantiating claims that transformational leadership is effective, a meta-analysis of 39 studies showed positive correlations between leaders' effectiveness and all components of transformational leadership, although effectiveness also related positively to the contingent reward component of transactional leadership (Lowe, Kroeck, & Sivasubramaniam, 1996; see also DeGroot, Kiker, & Cross, 2000). A large norming study of the MLQ measure produced similar findings (Center for Leadership Studies, 2000b) and in addition showed negative relations between leaders' effectiveness and two of the remaining styles, passive management by exception, which is one of the components of transactional leadership, and laissez-faire leadership. The modern assertions that women are especially talented as leaders (e.g., Sharpe, 2000) could thus be substantiated if the research literature revealed that female leaders are more transformational than male leaders. Also potentially contributing to women's effectiveness could be tendencies to engage in more contingent reward behaviors and fewer of the relatively negative behaviors encompassed by passive management by exception and laissez-faire leadership.

Social Role Theory of the Leadership Styles of Women and Men

We frame our expectations about male and female leadership styles in terms of the social role theory approach to leadership behavior (Eagly & Johannesen-Schmidt, 2001; Eagly & Johnson,

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[2] Although in this meta-analysis the leadership style data were organized in terms of the nine-subscale version of the MLQ–5X measure, sometimes researchers combine the two Idealized Influence subscales or the two Management by Exception subscales because they may not emerge as distinguishable in factor analyses.

1990; Eagly & Karau, 2002; Eagly, Wood, & Diekman, 2000). In emphasizing gender roles as well as leader roles, social role theorists argue that leaders occupy roles defined by their specific position in a hierarchy and simultaneously function under the constraints of their gender roles. In terms of the general definition of social roles as socially shared expectations that apply to persons who occupy a certain social position or are members of a particular social category (Biddle, 1979; Sarbin & Allen, 1968), gender roles are consensual beliefs about the attributes of women and men. To the extent that gender roles exert some influence on leaders, female and male occupants of the same leadership role would behave somewhat differently. Consistent with this argument, Gutek and Morasch (1982; see also Gutek, 2001) argued that gender roles spill over to organizations, and Ridgeway (2001) maintained that gender provides an "implicit, background identity" (p. 644) in the workplace. This social role analysis thus departs from the traditional reasoning that male and female leaders who occupy the same role display the same behaviors (e.g., Kanter, 1977).

Joint Effects of Leader Roles and Gender Roles

Despite the likely influence of gender roles on leaders' behavior, leadership roles should be of primary importance in organizational settings because these roles lend their occupants legitimate authority and are usually regulated by relatively clear rules about appropriate behavior. This idea that the influence of gender roles can be diminished by other roles was foreshadowed by experimental demonstrations of the lessening of many gender-stereotypic sex differences in laboratory settings when participants received information that competed with gender-based expectations (see reviews by Eagly et al., 2000; Wagner & Berger, 1997). However, research in natural settings suggests that, although some gender-stereotypic differences erode under the influence of organizational roles, other differences may not. Particularly informative is a field study by Moskowitz, Suh, and Desaulniers (1994) that examined the simultaneous influence of gender roles and organizational roles. This study used an experience-sampling method by which participants monitored their interpersonal behavior in work settings for 20 days. In general, agentic behavior (i.e., behavior that is independent, masterful, assertive, and instrumentally competent) was related to the relative status of the interaction partners, with participants behaving most agentically with a subordinate and least agentically with a boss. However, communal behavior (i.e., behavior that is friendly, unselfish, concerned with others, and expressive) was influenced by the sex of participants, regardless of their status, with women behaving more communally than men, especially in interactions with other women.

To account for similarities in the leadership behavior of men and women, the social role analysis includes the principle that leadership roles, like other organizational roles, provide norms that regulate the performance of many tasks, which therefore are similarly accomplished by male and female leaders. For example, a manager is obligated to carry out many activities, such as monitoring subordinates' performance and gathering and disseminating information. Despite pressures to conform to such norms, managers generally have some freedom to vary the manner in which they carry out their required activities as well as to go beyond the boundaries of their roles (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Managers may thus be friendly or more remote, exhibit much or little excitement about future goals, consult few or many colleagues about decisions, provide extensive or limited mentoring of subordinates, and so forth. Some of the subscales of the MLQ–5X favor certain of these shadings of required acts, in the manner that the Individualized Consideration subscale encompasses mentoring. In addition, behaviors that represent going beyond the formal boundaries of one's role (e.g., communicating values) encompass many acts included in measures of transformational leadership. These discretionary and optional aspects of leadership may differ between women and men because these aspects are not closely regulated by the norms associated with leader roles and thus are more susceptible to influence from gender-specific norms.

As Eagly et al. (2000) argued, the influence of gender roles on organizational behavior occurs, not only because people react to leaders in terms of gendered expectancies and leaders respond in turn, but also because most people have internalized their gender role to some extent (Cross & Madson, 1997; Deaux & Major, 1987; Gabriel & Gardner, 1999; Wood, Christensen, Hebl, & Rothgerber, 1997). As a consequence of the differing social identities that result, women and men tend to differ in their expectations for their own behavior in organizational settings (Ely, 1995). Self-definitions of managers may thus reflect an integration of their managerial role and gender role, and through self-regulatory processes, these composite self-definitions influence behavior, thereby shading the discretionary aspects of managerial behavior in gender-stereotypic directions.

Incongruity Between Leader Roles and the Female Gender Role

The tendency for the demands of the female gender role and leader roles to be contradictory can also foster differing behavior in female and male leaders. One reason that gender roles have different implications for female and male leaders is thus that inconsistency often exists between the predominantly communal qualities that perceivers associate with women (e.g., friendly, kind, unselfish) and the predominantly agentic qualities that they generally believe are necessary to succeed as a leader (e.g., assertive, masterful, instrumentally competent). People's beliefs about leaders are thus more similar to their beliefs about men than women, as Schein (2001) demonstrated in her "think manager, think male" (p. 676) studies, which extend back to the early 1970s (Schein, 1973; see also Powell, Butterfield, & Parent, 2002). Nonetheless, the degree of perceived incongruity between a leader role and the female gender role would depend on many factors, including the exact definition of the leader role and the activation of gender roles in particular situations (see Eagly & Karau, 2002; Heilman, 2001).

As Eagly and Karau (2002) maintained, perceived incongruity between the female gender role and typical leader roles tends to create prejudice toward female leaders and potential leaders that takes two forms: (a) less favorable evaluation of women's (than of men's) potential for leadership because leadership ability is more stereotypic of men than women and (b) less favorable evaluation of women's (than of men's) actual leadership behavior because agentic behavior is perceived as less desirable in women than men. Consistent with the first form of prejudice and the concept of the glass ceiling (Federal Glass Ceiling Commission, 1995; Morrison, White, & Van Velsor, 1987), women may often face more stringent requirements to attain and retain leadership roles—that is, a double standard that favors men (Foschi, 2000).

The second form of prejudice, whereby leadership behavior enacted by women is often evaluated less favorably than the equivalent behavior enacted by men, also constrains women's leadership style. Particularly consequential are the negative reactions that women may encounter when they behave in a clearly agentic manner, especially if that style entails exerting control and dominance over others (Eagly et al., 1992). When female leaders fail to temper the agentic behaviors required by a leader role with sufficient displays of female-typical communal behaviors, they can incur a backlash whereby they may be passed over for hiring and promotion (Burgess & Borgida, 1999; Carli & Eagly, 1999; Heilman, 2001; Rudman & Glick, 1999, 2001). Therefore, partly as a result of these pressures, many women in managerial positions manifest language and communication styles that are somewhat more collaborative and less hierarchical than those of their male counterparts—that is, a repertoire of behaviors that is somewhat consistent with the communal requirements of the female gender role (e.g., Eagly & Johnson, 1990; Hall & Friedman, 1999; Moskowitz et al., 1994; Troemel-Ploetz, 1994). Moreover, as shown in a meta-analysis of studies of managers' motivation to manage in a traditional, hierarchic manner (Eagly, Karau, Miner, & Johnson, 1994), women may be less likely than men to impose their authority in a command-and-control style.

In summary, the classic argument that leadership roles constrain behavior so that sex differences are absent among occupants of the same role fails to take important considerations into account. Not only may the norms associated with gender roles spill over to influence organizational behavior, but leaders' gender identities may also influence their behaviors in a direction consistent with their own gender role. In addition, incongruity between leader roles and the female gender role could make it somewhat difficult for women to attain leadership roles and produce disapproval when their behavior in these roles fails to be in sufficient conformity with the communal requirements of the female gender role.

Implications for Leaders' Transformational, Transactional, and Laissez-Faire Styles

One implication of this social role theory analysis is that the transformational, transactional, and laissez-faire styles of women and men may differ to some extent because of the dynamics of role incongruity as well as gender roles' influence on behavior by means of the spillover and internalization of gender-specific norms. Women may thus favor a transformational style because it provides them with a means of overcoming the dilemma of role incongruity—namely, that conforming to their leader role can impede their ability to meet the requirements of their gender role and that conforming to their gender role can impede their ability to meet the requirements of their leader role. As Yoder (2001) argued, transformational leadership may allow women to avoid the overly masculine impression they can produce by exercising hierarchical control and engaging in narrowly agentic leader behavior. At least if the organizational context does not feature strongly hierarchical roles and a tradition of command-and-control leadership, a transformational style, accompanied by the contingent reward behaviors of the transactional style, may be an effective approach to leadership that encompasses some behaviors that are consistent with the female gender role's demand for caring, supportive, and considerate behaviors. Especially communal are the individualized consideration behaviors, which are marked by de-

veloping and mentoring followers and attending to their individual needs (see Table 1). Other aspects of transformational leadership do not seem to be aligned with the gender role of either sex (e.g., demonstrating attributes that instill respect and pride by association with a leader). Few, if any, transformational behaviors have distinctively masculine connotations. Consistent with these assumptions, studies have shown that subordinates perceive greater overall correspondence between leaders' feminine personality attributes and their transformational style than their transactional style (M. Z. Hackman, Furniss, Hills, & Paterson, 1992; Ross & Offermann, 1997). Also, this likely consistency of at least some aspects of transformational leadership with the female gender role would allow these behaviors to be fostered in women by the spillover of its norms onto organizational behavior and many women's personal acceptance of these norms as standards for their own behavior.

Transformational leadership style may be congenial to women, not only because at least some of its components are relatively communal, but also because these particular communal behaviors may help female leaders deal with the special problems of lesser authority and legitimacy that they face to a greater extent than their male counterparts. Consistent with our discussion of role incongruity in the *Incongruity Between Leader Roles and the Female Gender Role* section, a considerable body of research has shown that women can be disliked and regarded as untrustworthy in leadership roles, especially when they exert authority over men, display very high levels of competence, or use a dominant style of communication (see reviews by Carli, 2001; Eagly & Karau, 2002). These negative reactions can be lessened when female leaders are careful to also display warmth and lack of self-interest by, for example, expressing agreement, smiling, supporting others, and explicitly stating an interest in helping others reach their goals (see Carli, 2001). From this perspective, certain aspects of transformational leadership may be crucial to effective female leadership—specifically, the transformational behaviors of focusing on mentoring followers and attending to their needs (individualized consideration) and emphasizing the mission of the larger organization rather than one's own goals (idealized influence, inspirational motivation). Contingent reward behaviors, involving noticing and praising subordinates' good performance, may also foster positive, supportive work relationships. In summary, transformational leadership as well as the contingent reward aspects of transactional leadership may provide a particularly congenial context for women's enactment of competent leadership. Although this approach to leadership is effective in men as well, it may be more critical for women than men to display their competence in this positive manner that is explicitly supportive of subordinates and the organization as a whole rather than with other styles that may also be effective, at least under some circumstances (see Chemers, 1997; House & Podsakoff, 1994).

Finally, even though certain leader behaviors may ease the incongruity between the female gender role and leadership roles, women may still have to meet a higher standard than men to attain these roles at all. Consistent with experimental and field research on the application of double standards in judging performances (e.g., Biernat & Kobrynowicz, 1997; Foschi, 2000), it is likely that higher standards are imposed on women to attain leadership roles and perhaps to retain them as well. Because transformational styles are particularly skillful in most organizational settings, a tendency for women to have a more transformational style than men could

reflect the selection of women who have met the higher standard that is imposed on women. Such women may also display more of the effective contingent reward transactional behaviors and fewer of the ineffective transactional behaviors (i.e., passive management by exception) and laissez-faire behaviors. In addition, consistent with the assumption of a double standard, women who manifested these ineffective styles and thus performed inadequately may be deselected from leadership more quickly than their male counterparts (Foschi, 1992, 2000).

Meta-Analysis of Female and Male Leadership Styles

To address these issues of gender and leadership styles, we undertook a quantitative synthesis of studies that had compared men and women on measures of transformational, transactional, and laissez-faire styles. All of this research was conducted with people who occupy leadership roles in organizations. This research included a large study conducted to provide norms and psychometric standards for the MLQ, the most widely used measure (Center for Leadership Studies, 2000b), as well as many studies conducted within specific organizations or groups of organizations. The measures of leadership style were completed by the leaders themselves or by individuals who functioned as their subordinates, peers, or superiors.

We aggregated all of the comparisons between male and female leaders in order to determine whether women and men differed in general in their tendencies to adopt transformational, transactional, and laissez-faire leadership styles. The male–female comparisons on the subscales of these measures are also of interest, especially for transactional leadership because, as we have noted, only the Contingent Reward subscale has related positively to effectiveness. In general, for the reasons we explained in the preceding section of this article, we expected women to exceed men on the subscales associated with greater effectiveness (transformational subscales and Contingent Reward) and men to exceed women on the remaining transactional subscales and the Laissez-Faire Scale.

We coded the studies on a number of their characteristics and related the characteristics that were documented in a sufficient number of studies to the effect sizes that represented sex differences and similarities in overall transformational style, which was the style measure represented in the largest number of studies. Certain study characteristics are especially interesting from the perspective of social role theory. In terms of the arguments we have stated about role incongruity and prejudice against female leaders, the extent to which roles are male-dominated and the level of leadership in organizational hierarchies are relevant variables. If female managers overcame stronger barriers and faced more intense role incongruity in relation to male-dominated and higher level roles (compared with less male-dominated and lower level roles), these women may be especially transformational, compared with their male counterparts. In addition, older women who have maintained themselves in leadership roles may have faced greater prejudice and more intense role incongruity pressures than younger women and thus be especially likely to manifest a transformational style.

To probe the idea that sex differences in style arise because women and men are differently placed in organizational structures (Kanter, 1977), the leaders' roles received special scrutiny. We desired to determine if findings differed depending on whether the men and women who were compared were known to be in the same specific leadership role (i.e., had the same job title; e.g., "school superintendent") or might have been in different specific roles because the sample of leaders was generally defined (e.g., as "managers"). By Kanter's (1977) argument, any sex differences should erode for women and men who occupy the same leadership role. Alternatively, if sex differences in style observed in these studies mainly reflect the factors that we have highlighted— namely, the influence of gender roles, role incongruity, and the double standard—any differences should be intact among women and men who occupy the same role.

Method

Sample of Studies

Computer-based information searches were conducted to locate appropriate studies. PsycINFO, Educational Resources Information Center, and ABI/INFORM Global were searched using key words *transform** (truncated to encompass transforming as well as transformational) and *transactional* to access studies from 1985, the year of Bass's (1985) seminal research, to June 2000. *Dissertation Abstracts International* was searched using these key words paired with either *gender* or *sex*. In addition, we examined the online library of the Center for Leadership Studies (2000a) and searched the reference lists of relevant review articles, chapters, books, and all of the documents that we located. Documents were retrieved if their title and abstract suggested that the investigators might have assessed leaders of both sexes on relevant measures. If the reported study met this criterion but did not provide information sufficient to calculate effect sizes, the author was contacted for the relevant data. Studies were included only if their data were sufficient to calculate at least one effect size relevant to the meta-analysis.

To access additional unpublished data sets, a message requesting appropriate data was sent to the electronic mailing lists of the following professional organizations: Society for Personality and Social Psychology, Society for the Psychological Study of Social Issues, Society for Experimental Social Psychology, and European Association of Experimental Social Psychology. Also, an e-mail inquiry was sent to all presenters at the Summer 2000 meeting of the Academy of Management whose title and abstract indicated that their studies might be appropriate for inclusion.

Studies were eligible for the meta-analysis if they assessed the transformational or transactional leadership styles of male and female leaders, defined as individuals who supervised or directed the work of others. Studies were excluded if (a) the sample of leaders of either sex was smaller than 5 or (b) the male and female leaders were sampled from different populations, characterized by distinctive roles (e.g., male priests and female nuns; Druskat, 1994).

When a document included data from different countries (Kuchinke, 1999) or different types of organizations (Alimo-Metcalfe & Alban-Metcalfe, 2001), we treated the samples of leaders as separate studies, if they were reported separately. Other documents included separate reports of more than one study (Bass, 1985; Bass, Avolio, & Atwater, 1996).[3] In two cases, data pertaining to one sample of leaders appeared in two separate documents (Komives, 1991a, 1991b; and van Engen, 2000; van Engen et al., 2001), which we treated as a single study in each case. Given these decisions, the 42 relevant documents produced the 45 studies included in the meta-analysis.

Variables Coded From Each Study

The following general characteristics were coded from each report: (a) year of publication; (b) source of publication (journal article, book or book

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[3] From Bass's (1985) book, we included a study of educational administrators (p. 225) and a study of professionals and managers (pp. 222–225). From Bass et al.'s (1996) article, we included all three studies.

chapter, dissertation or master's thesis, unpublished document, mixed[4]); (c) first author sex (male, female);[5] (d) percentage of men among the authors; (e) title refers to sex or gender (yes, no); (f) type of organization (business, educational, governmental or social service, other [health care, sports], mixed or unknown); and (g) size of organization (small [i.e., less than 500 people], large, mixed or unknown).

The following characteristics of the leaders and their roles were coded: (a) nationality (United States, Canada, other English-speaking country, non-English-speaking European country, mixed); (b) average age; (c) level of leadership (supervisory, middle, executive, mixed, unknown); (d) specificity of the role description that defined the sample of leaders (specific [e.g., deans of schools of education], general [e.g., managers of various organizations], mixed); (e) basis of selection of leaders from relevant population (random sample or entire population, unsuccessful random sample [i.e., less than 80% participation], nonrandom sample [e.g., voluntary participation], unknown; (f) leaders participating in leadership training program (yes, no, mixed); (g) percentage of men in leader role; (h) percentage of men in subordinate roles;[6] (i) confounding of leader sex with individual variables such as age (controlled, known to be confounded, unknown whether confounded); and (j) confounding of leader sex with institutional variables such as level of leadership (controlled, known to be confounded, unknown whether confounded).[7]

The following attributes of the leadership style measures were coded: (a) specific measure used; (b) identity of raters (leaders [i.e., self-ratings], subordinates, superiors, peers, mixed); (c) basis of selection of raters (random sample or entire population, unsuccessful random sample [i.e., less than 80% participation], chosen by leader, leaders rated only by selves, unknown); (d) aggregation of the data points underlying the study's sex comparison (aggregated across ratings, aggregated across ratings and raters, mixed);[8] and (e) reliability of measures of leadership style (i.e., coefficient alpha).

In addition, some studies provided ratings of the extent to which female and male leaders produced favorable outcomes. These measures were classified into the following categories defined by the three multi-item outcome scales that are sometimes administered with the MLQ: (a) extra effort (i.e., getting others to try hard and to do more than expected); (b) satisfaction (i.e., working with others so that they are satisfied with leadership); (c) effectiveness (i.e., leading an effective group). These measures were based on ratings by leaders themselves or by their subordinates, superiors, or peers on appropriate items that had sometimes been aggregated into subscales.

All studies were coded independently by Mary C. Johannesen-Schmidt and Marloes L. van Engen, with high median agreement across the variables ($\kappa = .87$, 89% agreement). The lowest agreement ($\kappa = .38$, 73% agreement) was found for confounding on institutional variables. Disagreements were resolved by discussion.

Computation and Analysis of Effect Sizes

The effect size calculated was g, the difference between the leadership style of the male and the female leaders, divided by the pooled standard deviation. A positive effect size indicates that men had a higher score than women on a leadership style, and a negative effect size indicates that women had a higher score. Effect sizes were calculated for overall transformational leadership and, if possible, for each of the transformational and transactional subscales and for laissez-faire leadership, as these variables were defined by the MLQ–5X, which was the most commonly used measure. For the studies that used measures other than the MLQ–5X, Mary C. Johannesen-Schmidt and Marloes L. van Engen classified these measures into the categories defined by the MLQ–5X scales and subscales, if the content of the items was similar to that of the items of the relevant MLQ–5X scale or subscale. For outcomes of leadership, a positive effect size indicates more favorable outcomes for male than female leaders, and a negative effect size indicates more favorable outcomes for female than male leaders.

We combined some subscales while also retaining them in their uncombined form. Specifically, because the subscales for Idealized Influence (attribute) and Idealized Influence (behavior) were presented separately in some studies and combined into a Charisma subscale in other studies, we constructed a Charisma subscale from these two components when it was not given in the document. In studies reporting data on two or more transformational subscales but not on an overall transformational scale, we combined the subscale scores to create an aggregated transformational score. All combined effect sizes were calculated using Rosenthal and Rubin's (1986) suggested formula. The between-measures correlations required by this formula were obtained from analyses of the MLQ Norming Study (Center for Leadership Studies, 2000b).

Some studies included more than one measuring instrument or identity of rater, or the authors had divided the data by the sex of the raters. In these instances, we calculated separate effect sizes for the measuring instruments, rater identities, or rater sexes to use in the models that treated each of these characteristics as an independent variable. These additional effect sizes were calculated for (a) specific measures in the one study that used multiple measures (Carless, 1998), (b) differing identities of raters in 11 studies (e.g., Sosik & Megerian, 1999), and (c) both sexes of raters in 7 studies (e.g., Alimo-Metcalfe & Alban-Metcalfe, 2001). However, for all other analyses, we reduced the nonindependence of the effect sizes by representing each study with only one effect size for a given style. Specifically, the effect sizes were combined across specific measures and identities and sexes of raters to create effect sizes that we termed *study-level effect sizes*.

To reduce computational error, Mary C. Johannesen-Schmidt and Marloes L. van Engen calculated the effect sizes independently with the aid of a computer program (Johnson, 1989). The computation of g was based on (a) means and standard deviations for 40 of the studies; (b) Fs, ts, or Zs for 5; and (c) correlations or chi-squares for 4.

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[4] The code "mixed" was used to describe a study for which data were drawn from two separate sources (unpublished document and journal article; van Engen, 2000; van Engen et al., 2001). This mixed code also appears for many other study characteristics for this same reason—namely, some studies encompassed two or more of the coded categories.

[5] Sex of authors and percentage of men among the authors were coded because these variables have sometimes predicted study outcomes in meta-analyses of sex differences in social behavior (e.g., Eagly & Carli, 1981; Eagly & Johnson, 1990; Thomas & French, 1985; Wood, 1987).

[6] These percentages were estimated for men (vs. women) in the leader or subordinate roles themselves rather than in the sample of leaders or subordinates. For example, if the percentage of men was 50 in the study because investigators had selected equal numbers of men and women but was 75 in the population from which the leaders had been selected, we chose 75 as the correct percentage. We adopted this strategy because of our interest in the extent to which the leader and subordinate roles were male dominated. If the relevant information was missing, we were able to estimate it in many cases from appropriate statistical sources (e.g., U.S. Bureau of Labor Statistics, 2002) or other information.

[7] To have an objective criterion for deciding whether leader sex was confounded with individual or institutional variables, we coded confounding as present if the male and female leaders differed by more than 10% of the smaller value of one or more of the reported individual or institutional variables.

[8] Data points aggregated across ratings represented multiple items (e.g., seven items in a subscale). Data points aggregated across raters represented multiple raters (e.g., 3 subordinates rated each leader). Data points aggregated across ratings and raters incorporated both types of aggregation (e.g., 3 subordinates rated each leader on the seven items of a subscale). Ratings by individuals other than leaders (e.g., subordinates) were aggregated only across ratings in some studies and across ratings and raters in other studies.

Table 2
Studies in Meta-Analysis With Their Characteristics and Effect Sizes

| | | Sample n[a] | | Characteristics | | | | |
| | | Men | Women | General[b] | Leader and role[c] | Style measure[d] | Transformational d | Subscale ds[e] |
Study	Leader role							
Alimo-Metcalfe & Alban-Metcalfe (2001, Sample 1)	Local government managers	962	149	4/2/3/3	3/—/4/2/2/85/70/3/3	5/3/2/1	−0.16	−0.10/—/—/—/—/−0.16/—/—/—/—
Alimo-Metcalfe & Alban-Metcalfe (2001, Sample 2)	National Health Service managers	613	421	4/2/3/3	3/—/4/2/4/2/58/30/3/3	5/3/4/1	−0.14	−0.14/—/—/—/—/−0.09/−0.12/—/—/—
Ayman et al. (2000)	Business and educational managers	58	51	4/2/5/3	2/—/5/3/2/2/—/25/1/1	1/1/4/1	−0.19	−0.33/—/−0.04/−0.05/—/—/0.15
Bass (1985, Sample 1)	School central administrators	15	8	2/1/2/2	3/—/3/2/4/2/65/—/3/3	1/1/4/1	−0.37	−0.26/—/−0.47/−0.20/−0.65/—/−0.06/—
Bass (1985, Sample 2)	Professionals and managers	29	16	2/1/5/3	3/—/4/2/4/2/64/—/3/3	1/3/5/1	−0.24	−0.22/—/−0.18/−0.22/−0.12/—/0.58/—
Bass et al. (1996, Study 1)	Managers of Fortune 50 firms	574	303	1/1/1/2	5/—/4/2/4/2/66/75/3/2	1/3/3/1	−0.26	−0.25/—/−0.18/−0.24/−0.11/0.11/0.37/0.13
Bass et al. (1996, Study 2)	Managers of various organizations	164	107	1/1/5/3	1/—/1/2/1/2/60/46/3/3	1/3/1/1	−0.23	−0.30/—/−0.08/−0.16/−0.23/−0.15/−0.33/0.34/—
Bass et al. (1996, Study 3)	Managers of various organizations	420	493	1/1/5/3	1/43/4/2/4/1/46/—/2/3	1/3/3/1	−0.09	−0.12/—/−0.11/−0.00/−0.05/−0.13/0.02/—/−0.05
Bono & Judge (2000)	Organizational leaders training for community leadership	112	77	4/2/5/3	1/39/4/2/2/1/—/—/3/3	1/3/2/1	−0.10	—/—/−0.05/−0.02/−0.21/−0.16/−0.31/0.15/0.22/0.17
Boomer (1994)	Principals of restructuring elementary schools	30	31	3/2/2/2	1/50/1/1/2/1/49/18/2/3	1/1/4/1	−0.62	−0.37/−0.19/−0.48/−0.57/−0.48/−0.70/−0.13/0.40/0.90/−0.11
Carless (1998)	Bank managers	368	240	1/2/1/2	3/38/4/1/2/2/61/15/3/1	10/5/5/3	−0.17	−0.14/—/−0.12/−0.11/−0.19/—/—/—
Center for Leadership Studies (2000b)	Managers of various organizations	6,098	2,856	4/1/5/3	5/—/4/2/3/3/—/—/3/3	1/5/5/1	−0.11	−0.09/−0.14/−0.03/−0.04/−0.03/−0.23/−0.15/0.15/0.26/0.18
Church & Waclawski (1998)	Executives of global corporation	456	50	1/1/1/2	5/49/4/2/4/1/90/—/3/3	4/5/1/3	0.61	—/0.33/0.57/0.59/—/—/—/—
Church & Waclawski (1999)	Executives of global corporation	1,236	132	1/1/1/2	5/44/4/2/1/1/90/—/3/3	4/5/1/3	0.20	—/0.10/0.13/0.25/—/—/—/—
Church et al. (1996)	Organizational development managers	209	111	1/1/1/3	1/45/5/2/2/2/65/—/3/3	4/1/4/1	−0.22	—/—/−0.25/−0.29/−0.04/—/—/—/—
Cuadrado (2002)	Managers of various organizations	65	53	3/2/5/3	4/38/4/2/3/2/—/—/3/3	1/1/5/1	−0.17	−0.24/—/—/−0.09/−0.13/−0.10/−0.27/—/−0.02/−0.01
Daughtry & Finch (1997)	Vocational education administrators	130	72	1/2/2/2	1/49/4/1/3/2/64/—/3/3	1/5/3/3	−0.25	—/—/—/—/—/—/—/—/0.01
Davidson (1996)	College choral directors	27	24	3/2/2/2	1/50/1/1/3/2/—/—/2/2	1/1/4/1	−0.15	−0.30/—/−0.11/−0.19/0.21/—/0.28/—
Ernst (1998)	Executives of business firms	821	699	3/2/1/3	1/—/3/2/2/2/—/—/3/3	7/1/4/1	−0.06	0.00/−0.01/0.01/—/—/−0.21/−0.17/—/—
Evans (1997)	Elementary school principals	16	109	3/1/2/2	1/—/1/1/1/2/28/14/3/3	1/3/2/1	−0.43	—/—/—/—/—/—/—/—
Floit (1997)	School superintendents	116	77	3/2/2/3	1/—/3/1/2/90/65/2/1	1/1/4/1	−0.47	−0.53/−0.47/−0.49/−0.38/−0.24/−0.29/—/—
Gillespie & Mann (2000)	Research and development managers	92	19	4/2/5/2	3/46/1/2/4/2/83/—/3/3	1/5/5/1	−0.10	0.15/0.29/0.03/0.05/−0.25/−0.46/−0.36/0.22/0.06/0.12
Golden (1999)	School superintendents	128	26	3/2/2/2	1/—/3/1/2/2/83/65/3/3	2/1/4/1	−0.25	—/—/−0.21/−0.24/—/—/—/—
Hill (2000)	University administrators	29	11	3/2/2/2	2/49/4/2/2/73/—/2/2	1/1/4/1	−0.36	−0.20/0.18/−0.54/−0.51/−0.21/−0.41/0.00/0.32/−0.12/—
Jantzi & Leithwood (1996)	School principals	288	135	1/2/2/2	2/49/4/2/2/68/28/3/3	3/3/2/1	−0.29	—/—/−0.33/−0.24/−0.16/—/—/—
Jones (1992)	Managers of service-oriented business organization	6	5	3/2/1/1	1/—/5/2/1/2/55/—/3/3	1/3/1/2	−0.04	—/—/—/—/—/—/—/—
Judge & Bono (2000)	Organizational leaders training for community leadership	134	160	1/1/5/3	1/39/4/2/2/1/46/—/3/3	1/3/3/2	−0.13	—/—/−0.12/0.10/—/−0.15/−0.24/—/—
Komives (1991a, 1991b)	College hall directors	296	383	1/2/2/2	1/28/1/1/2/42/44/1/2	1/5/2/1	0.31	0.22/—/—/−0.02/0.53/0.13/0.18/—/−0.30/−0.04

Table 2 (*continued*)

Study	Leader role	Sample n[a] Men	Sample n[a] Women	General[b]	Leader and role[c]	Style measure[d]	Transformational d	Subscale ds[e]
Kouzes & Posner (1995)	Managers of various organizations	4,571	1,267	2/1/5/3	5/—/4/2/4/2/78/—/3/3	2/1/4/1	0.04	—/—/0.05/0.02/—/—/—/—/—/—
Kuchinke (1999, German sample)	Managers of Fortune 500 telecommunication firm	34	7	1/1/1/2	4/35/5/2/2/77/—/3/3	1/1/4/1	−0.31	−0.21/−0.32/−0.06/−0.31/−0.08/−0.51/−0.19/0.08/0.41/0.04
Kuchinke (1999, U.S. sample)	Managers of Fortune 500 telecommunication firm	73	31	1/1/1/2	1/55/5/2/2/70/—/3/3	1/1/4/1	0.09	0.13/—/−0.03/0.26/0.09/0.05/0.11/0.12/0.26/0.15/0.00
Langley (1996)	Directors of national sports organizations	7	9	3/2/4/3	2/—/2/1/4/2/—/—/3/1	1/5/2/2	−0.26	—/—/—/—/—/—/—/—/—/—
La Vine (1998)	Deans of schools of education	39	22	3/2/2/2	1/—/2/1/2/2/64/—/1/3	2/1/4/1	−0.33	—/—/−0.25/−0.34/—/—/—/—/—/—
Leithwood & Jantzi (1997)	School principals	965	288	1/1/2/2	2/50/4/2/2/77/32/3/2	3/3/2/1	−0.35	—/—/−0.30/−0.35/−0.22/—/—/—/—/—
Manning (2000)	Managers of nonprofit organizations	44	59	4/2/3/1	1/43/4/2/2/43/—/3/2	2/5/3/3	−0.08	—/—/−0.01/−0.13/—/—/—/—/—/—
McGrattan (1997)	Elementary school principals	42	32	3/1/2/2	1/48/1/1/2/57/18/3/3	3/3/1/2	−0.72	—/—/—/—/—/—/—/—/—/—
Pollock (1998)	Managers of accounting firms	192	26	3/2/1/3	1/—/5/2/2/88/60/3/3	1/3/2/1	−0.27	−0.13/—/−0.02/−0.44/−0.31/0.02/—/0.26/0.09
Rosen (1993)	School superintendents	29	67	3/2/2/2	1/48/3/1/3/88/65/2/3	1/1/4/1	−0.44	−0.34/—/−0.41/−0.31/−0.47/—/0.46/—/—
Rozier & Hersh-Cochran (1996)	Managers in physical therapy	229	316	1/2/4/2	1/41/4/1/2/42/—/2/2	9/14/3	−0.36	—/—/−0.33/−0.31/—/−0.23/—/—/—
Sosik & Megerian (1999)	Managers of information technology firm	112	14	1/1/1/2	1/46/5/2/2/85/—/3/3	1/5/2/3	0.00	—/—/—/—/—/—/—/—/—/—
Spreitzer et al. (2000)	Managers of computer and automobile firms	326	204	4/2/1/2	5/41/3/2/2/1/62/—/3/3	8/3/5/1	−0.21	—/—/−0.07/−0.30/—/—/—/—/—/—
Stepp (2000)	Managers of government research organizations	247	81	4/2/3/1	1/—/5/2/2/74/57/3/3	1/5/2/1	0.01	0.04/—/−0.04/0.11/0.13/0.02/—/0.18/—/−0.04/—/−0.08/0.13/—/−0.05
van Engen (2000); van Engen et al. (2001)	Managers of department stores	63	41	5/2/1/2	4/37/1/1/2/78/33/2/1	1/2/2/3	—	0.38/—/—/—/—/—/—/—/—/—
Wilson-Evered & Härtel (2000)	Managers of metropolitan hospital	14	29	4/2/4/2	3/—/5/2/2/33/20/3/3	1/3/1/2	0.12	0.09/0.12/0.05/0.03/0.14/0.15/0.21/0.04/0.21/0.09
Wipf (1999)	School principals	29	55	3/1/2/2	1/50/4/2/1/2/35/25/3/2	3/3/1/2	−0.87	—/—/—/—/—/—/—/—/—/—

Note. Dashes indicate missing data. Positive effect sizes (*ds*) indicate that men had higher scores than women on a given leadership style, and negative *ds* indicate that women had higher scores than men.
[a] The *ns* represent the numbers of data points underlying the calculation of the *d* for transformational leadership (or for the available subscale when the transformational *d* was missing). When this *d* encompassed more than one measure (Carless, 1998) or identity of rater (e.g., self and subordinate), the *ns* were summed across these measures or identities.   [b] The first characteristic is publication source (1 = journal article, 2 = book or book chapter, 3 = dissertation or master's thesis, 4 = unpublished document, 5 = mixed); the second is first author sex (1 = male, 2 = female); the third is type of organization (1 = business, 2 = educational, 3 = governmental or social service, 4 = other, 5 = mixed or unknown); and the fourth is size of organization (1 = small, 2 = large, 3 = mixed or unknown).   [c] The first characteristic is nationality (1 = United States, 2 = Canada, 3 = other English-speaking country, 4 = non-English-speaking European country, 5 = mixed); the second is average age (in years); the third is level of leadership (1 = supervisory, 2 = middle, 3 = executive, 4 = mixed, 5 = unknown); the fourth is the specificity of the role description that defined the sample of leaders (1 = specific, 2 = general, 3 = mixed); the fifth is the basis of selection of leaders from relevant population (1 = random sample or entire population, 2 = unsuccessful random sample, 3 = nonrandom sample, 4 = unknown); the sixth is leaders participating in leadership training program (1 = yes, 2 = no, 3 = mixed); the seventh is percentage of men in leader role; the eighth is percentage of men in subordinate roles; the ninth is confounding of the male–female comparison with institutional variables (1 = controlled, 2 = known to be confounded, 3 = unknown whether confounded); and the tenth is confounding of the male–female comparison with individual variables (1 = controlled, 2 = known to be confounded, 3 = unknown whether confounded).   [d] The first characteristic is specific measure of leadership style (1 = Multifactor Leadership Questionnaire, 2 = Leadership Practices Inventory, 3 = Nature of Leadership Survey, 4 = Leadership Assessment Inventory, 5 = Transformational Leadership Questionnaire, 6 = Global Transformational Leadership Scale, 7 = The Leadership Profile, 8 = Transformational Leader Behavior Inventory, 9 = Supervisory Style Inventory, 10 = multiple measures); the second is identity of raters (1 = leaders, 2 = peers, 3 = subordinate, 4 = superiors, 5 = mixed); the third is basis of selection of raters (1 = random sample or entire population, 2 = unsuccessful random sample, 3 = chosen by leader, 4 = leaders rated only by selves, 5 = unknown); and the fourth is aggregation of data points (1 = aggregated across ratings, 2 = aggregated across ratings and raters, 3 = mixed).   [e] The first *d* is Charisma, the second is Idealized Influence (attribute), the third is Idealized Influence (behavior), the fourth is Inspirational Motivation, the fifth is Intellectual Stimulation, the sixth is Individualized Consideration, the seventh is Contingent Reward, the eighth is Management by Exception (active), the ninth is Management by Exception (passive), and the tenth is Laissez-Faire.

Following Hedges and Olkin's (1985) procedures (see also Johnson & Eagly, 2000; Lipsey & Wilson, 2001), the gs were converted to ds by correcting them for bias, and each d was weighted by the reciprocal of its variance in the analyses. To determine whether each set of ds shared a common effect size (i.e., was consistent across the studies), we calculated the homogeneity statistic Q. In the absence of homogeneity, we attempted to account for variability in the effect sizes by calculating fixed-effect continuous and categorical models that related the effect sizes to the attributes of the studies.

As a supplementary analysis, we attained homogeneity among the effect sizes by identifying outliers and sequentially removing those that reduced the homogeneity statistic by the largest amount (see Hedges & Olkin, 1985). This procedure allows a determination of whether the effect sizes are homogeneous aside from the presence of relatively few aberrant values. Studies yielding extreme values were examined after the fact to determine if they appeared to differ methodologically from the other studies. An alpha level of .05 was used in these homogeneity analyses and all other statistical tests reported in this article.

Results

Characteristics of the Studies

Table 2 contains a listing of the studies, their characteristics, and their effect sizes comparing male and female leaders. A summary of these characteristics reveals that most of the 45 studies were very recent, with 1998 as the median year of publication (or of becoming available in the case of unpublished documents). Among these studies, 36% appeared as journal articles, 7% as book chapters, 33% as dissertations or master's theses, 22% as unpublished documents, and 2% in mixed sources. Although 60% of the first authors were female, authorship was equally divided between men and women when all authors were taken into account. The titles of 39% of the studies referred to sex or gender. The organizations in which the leaders were employed were business (31%), educational (33%), governmental or social service (7%), other specific types (7%), or mixed or unknown types (22%). Although in 58% of the studies the samples of leaders came from large organizations and in only 7% from smaller organizations, in 36% organization size was either mixed within the sample or impossible to discern.

With respect to the characteristics of the leaders and their roles, 53% of the studies examined leaders living in the United States, and 47% examined leaders from various other nations (Canada, 11%; other English-speaking countries, 16%; non-English-speaking European countries, 7%; mixed samples, 13%). The leaders tended to be middle aged, with a median average age of 44. Although some of the studies investigated managers at a particular level of leadership (supervisory, 18%; middle, 4%; executive, 13%), in the majority of studies level was either mixed within the sample (44%) or unknown (20%). Although 67% of the studies provided general descriptions of the leaders' roles (e.g., executives of business firms), 31% provided specific descriptions (e.g., elementary school principal), and 2% provided mixed descriptions. The basis for selecting leaders from the relevant population was random (or the entire population participated) in 16% of the studies, relatively unsuccessful random sampling (i.e., less than 80% participation) in 53%, nonrandom in 11%, and unknown in 20%. In only 16% of the studies were the leaders participating in a leadership training program. On the average, leaders' roles were somewhat male dominated (median = 65% men), and their subordinates' roles were somewhat female dominated (median = 39% men). The confounding of leaders' sex could not be discerned in

relation to individual variables in 76% of the studies and in relation to institutional variables in 71%.

With respect to the leadership style measures, 62% of the studies used the MLQ measure, and 38% used other measures.[9] The identity of the raters of the leaders was typically the leaders themselves (36% of the studies) or their subordinates (38%), with 2% performed by peers and 24% by raters of more than one type (e.g., self and subordinate ratings). In the 64% of the studies in which others rated the leaders, the selection of these raters was based on random sampling or use of an entire population (16%), relatively unsuccessful random sampling (24%), selection by the leaders (11%), or unknown methods (13%). In 69% of the studies, the data points describing the male and female leaders were aggregated across ratings (e.g., combined across items to produce scales or subscales) before being averaged to describe the male and female samples; in 13% of the studies the data points were aggregated across ratings and raters, and in 18% they were mixed (e.g., self reports were aggregated across ratings; subordinate reports were aggregated across ratings and raters). The median reliabilities of the measures of transformational, transactional, and laissez-faire styles were relatively high (median = .89 for overall transformational style; range = .65–.85 for subscales).

Overall Sex Differences in Leadership Styles

The summary of the study-level effect sizes given in Table 3 allows a determination of whether, on the whole, male and female leaders differed in their leadership style. In this table (and subsequent tables), a sex difference is shown by a mean effect size that differed significantly from the no-difference value of 0.00 (as indicated by a 95% confidence interval around the mean that did not include 0.00). Examination of the mean weighted effect sizes shows that, by this standard of statistical significance, female leaders were more transformational than male leaders in their leadership style. An overall female advantage was also found on the transformational subscale of Charisma and one of its components, Idealized Influence (attribute), as well as on the transformational subscales of Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration.

On transactional leadership, female leaders scored higher than male leaders on the first subscale, Contingent Reward. However, male leaders scored higher than female leaders on the Management by Exception (active) and Management by Exception (passive) subscales of transactional leadership. Because the sex differences on the component scales of transactional leadership proved to be opposite in direction, we do not present effect sizes for a transac-

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[9] In addition to the MLQ, the measures represented in the meta-analysis are Leadership Practices Inventory (Posner & Kouzes, 1988; 9% of the studies), Nature of Leadership Survey (Jantzi & Leithwood, 1996; 9%), Leadership Assessment Inventory (Burke, 1991; 7%), Transformational Leadership Questionnaire (Alimo-Metcalfe & Alban-Metcalfe, 2001; 4%), The Leadership Profile (Sashkin, Rosenbach, & Sashkin, 1997; 2%), Transformational Leader Behavior Inventory (Podsakoff, MacKenzie, Moorman, & Fetter, 1990; 2%), and Supervisory Style Inventory (Rozier & Hersh-Cochran, 1996; 2%). One study (Carless, 1998; 2%) used two measures: Leadership Practices Inventory and Global Transformational Leadership Scale (Carless et al., 2000).

Table 3
Study-Level Effect Sizes for Transformational, Transactional, and Laissez-Faire Leadership Styles

Leadership measure	All studies					Excluding outliers	
	k	d_+	95% CI	Q^a	Mean unweighted d	k	d_+
Transformational	44	−0.10	−0.13, −0.08	152.94**	−0.19	40	−0.16
Charisma	25	−0.09	−0.12, −0.06	51.61**	−0.13	24	−0.11
Idealized Influence (attribute)	10	−0.12	−0.16, −0.08	16.56	−0.06		
Idealized Influence (behavior)	15	−0.02	−0.06, 0.01	29.79**	−0.07	14	−0.02
Inspirational Motivation	29	−0.05	−0.08, −0.03	88.40**	−0.10	24	−0.06
Intellectual Stimulation	35	−0.05	−0.07, −0.02	150.74**	−0.12	30	−0.06
Individualized Consideration	28	−0.19	−0.22, −0.16	37.31	−0.20		
Transactional							
Contingent Reward	21	−0.13	−0.17, −0.10	29.83	−0.13		
Management by Exception (active)	12	0.12	0.08, 0.16	21.24*	0.11	11	0.13
Management by Exception (passive)	18	0.27	0.23, 0.30	19.18	0.23		
Laissez-Faire	16	0.16	0.14, 0.19	18.74	0.06		

Note. Positive effect sizes (ds) on a given leadership style indicate that men had higher scores than women, and negative ds indicate that women had higher scores than men. k = number of studies; d_+ = mean weighted d; CI = confidence interval; Q = homogeneity of ds.
[a] Significance indicates rejection of the hypothesis of homogeneity.
* $p < .05$.   ** $p < .01$.

tional composite measure. In addition, men scored higher than women on the Laissez-Faire Scale.[10]

As also shown in Table 3, analyses of the homogeneity of the effect sizes revealed that the hypothesis of homogeneity was rejected for overall transformational leadership as well as for the Charisma subscale and one of its components—Idealized Influence (behavior) subscale—as well as for the Inspirational Motivation, Intellectual Stimulation, and Management by Exception (active) subscales. However, the small sample sizes on some of the subscale analyses limit the statistical power for rejecting the hypothesis of homogeneity. To explore these findings further, effect sizes were removed until homogeneity was achieved on the scales and subscales for which the effect sizes were heterogeneous (see Table 3). In each case, removal of relatively few effect sizes produced homogeneity, and the mean weighted effect sizes with and without the outliers were quite similar. Also reported in Table 3 are the mean unweighted effect sizes that we calculated because of our concern that the large variation in sample sizes across these studies might have biased the findings if larger sample studies produced systematically different findings than smaller sample studies. However, the means of the unweighted effect sizes were similar to those of the weighted effect sizes.

Table 4 displays the findings separated into three categories: the MLQ Norming Study (Center for Leadership Studies, 2000b; see also Eagly & Johannesen-Schmidt, 2001), the other studies that assessed style on the MLQ, and the studies that used other measuring instruments. The Norming Study and the other MLQ studies yielded similar findings on the whole. Although the numbers of studies using other measures were relatively small, the transformational data appear similar to those of the MLQ studies; female leaders scored higher than male leaders on overall transformational leadership, and the largest transformational sex difference appeared on the Individualized Consideration subscale. For the studies not using the MLQ, the only reversal of the direction of the differences from the direction on the MLQ measures occurred on the Idealized Influence (behavior) subscale. Also, as in the MLQ

studies, women exceeded men on the Contingent Reward subscale, but this conclusion was based on only two studies. The studies using measures other than the MLQ did not assess the transactional components of active or passive management by exception or the laissez-faire style.

In summary, the overall patterning of the findings across the scales and subscales of transformational, transactional, and laissez-faire leadership was generally stable across (a) means calculated with and without outliers; (b) means calculated with and without weighting the effect sizes; and (c) means calculated for the MLQ Norming Study, other studies that used the MLQ, and studies that used other measures. This pattern is that women scored higher than men on transformational leadership and contingent reward, whereas men scored higher than women on active and passive management by exception and laissez-faire leadership. Given this consistency and the result that, with one exception, all of the means for transformational leadership and its subscales were negative (i.e., female direction), we confined our additional analyses to the 44 study-level transformational effect sizes, for which the sample size was largest and thus provided adequate statistical power for testing moderator variables (see Hedges & Pigott, 2001). These analyses allowed us to investigate the conditions under which women displayed leadership that was more transformational than that of their male counterparts. For the transactional and laissez-faire measures, adequate model testing was precluded not only by relatively small sample sizes but also by the relative homogeneity of the sets of effect sizes (see Table 3).

Figure 1 presents a stem and leaf plot of the 44 study-level transformational effect sizes. The effect sizes centered around their

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[10] Although calculation of a categorical model across the subscales yielded a highly significant between-classes effect, we do not present this model because most of the studies contributed effect sizes for most of the subscales, creating high dependency of the effect sizes, which violates the assumptions of the statistical model.

Table 4

Effect Sizes for Transformational, Transactional, and Laissez-Faire Leadership Styles in MLQ Norming Study, Other MLQ Studies, and Studies Using Other Measures

Leadership measure	MLQ Norming Study		Other MLQ studies			Studies using other measures		
	d	95% CI	k	d_+	95% CI	k	d_+	95% CI
Transformational	−0.11	−0.16, −0.07	26	−0.11	−0.17, −0.06	17	−0.09	−0.12, −0.05
Charisma	−0.09	−0.14, −0.05	20	−0.11	−0.18, −0.05	4	−0.07	−0.14, −0.01
Idealized Influence (attribute)	−0.14	−0.19, −0.10	8	−0.12	−0.26, 0.03	1	−0.01	−0.11, 0.10
Idealized Influence (behavior)	−0.03	−0.07, 0.02	10	−0.09	−0.20, 0.03	4	0.02	−0.06, 0.10
Inspirational Motivation	−0.04	−0.08, 0.01	16	−0.08	−0.14, −0.02	12	−0.05	−0.10, −0.01
Intellectual Stimulation	−0.03	−0.07, 0.02	21	−0.02	−0.08, 0.04	13	−0.07	−0.11, −0.03
Individualized Consideration	−0.23	−0.27, −0.18	21	−0.13	−0.19, −0.07	6	−0.18	−0.24, −0.13
Transactional								
Contingent Reward	−0.15	−0.19, −0.10	18	−0.13	−0.20, −0.06	2	−0.19	−0.28, −0.10
Management by Exception (active)	0.15	0.10, 0.19	11	0.04	−0.04, 0.11	0		
Management by Exception (passive)	0.26	0.22, 0.31	17	0.28	0.21, 0.35	0		
Laissez-Faire	0.18	0.14, 0.23	15	0.15	0.12, 0.18	0		

Note. Positive effect sizes (*d*s) indicate that men had higher scores than women on a given leadership style, and negative *d*s indicate that women had higher scores than men. Multifactor Leadership Questionnaire (MLQ) Norming Study *n*s were between 2,831 and 2,874 for ratings of female leaders and 6,081 and 6,126 for ratings of male leaders, depending on the scale. CI = confidence interval; k = number of studies; d_+ = mean weighted *d*.

mean value of −0.10, with some more extreme values appearing on the positive and negative sides of the distribution. The female direction of the central tendency was also confirmed by our calculation of the mean on a random effects basis; this mean was −0.15, with a 95% confidence interval of −0.22 to −0.09 (see Lipsey & Wilson, 2001). As displayed in Table 3, the removal of only four effect sizes (9% of *N*) yielded a homogeneous distribution.[11] The small proportion of outliers removed to produce homogeneity shows that findings were relatively consistent across studies (see Hedges, 1987) and suggests that additional analyses are unlikely to yield powerful moderators of the effect sizes. Because none of the outlying effect sizes was extremely deviant from the other effect sizes in the distribution, all studies were retained in subsequent analyses.

Accounting for Variability in the Effect Sizes for Transformational Style

Fixed-effect categorical and continuous models were fitted to the overall transformational effect sizes (Hedges & Olkin, 1985). Given that the effect size distribution displayed only a limited amount of variability beyond subject-level sampling error and that several models (see below) successfully accounted for variability in the effect sizes, we assume that the excess variability is not random and that fixed-effect models are therefore appropriate (Lipsey & Wilson, 2001). We present models that have two attributes: (a) they were based on adequate sample sizes for testing variation on the study attribute (specifically, at least 40% of the studies were classified into coding categories other than unknown or mixed), and (b) they produced a significant overall effect.[12]

Table 5 presents the significant categorical models and post hoc contrasts between categories, and Table 6 presents the significant continuous models. We first consider study attributes providing general information. Although the categorical model for publication source was significant, only the three studies published in books or book chapters differed from the studies published in other sources. The continuous model for year of publication revealed that the sex difference went more strongly in the female (vs. male)

direction in more recent years. The categorical model for type of organization revealed that educational and miscellaneous other settings produced the largest differences in the female direction, and business and mixed settings produced the smallest differences (although only the educational vs. mixed settings contrast was significant).

Several models classifying the effect sizes on the characteristics of the leaders and their roles proved to be significant. The categorical model for the nationality of leaders reveals only that the sex difference went more strongly in the female direction in the studies with Canadian leaders compared with leaders from the United States. The continuous model for the age of leaders indicates that the sex difference went more strongly in the female direction with increasing average age of the leaders in the study.[13]

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[11] These outliers, which were all in the male direction, were removed in the following order: Komives (1991a, 1991b; *d* = 0.31), Kouzes and Posner (1995; *d* = 0.04), Church and Waclawski (1999; *d* = 0.61), and Church and Waclawski (1998; *d* = 0.20). Although Komives (1991a, 1991b; treated as one study) used the MLQ measure, the other three studies used variant measuring instruments. The Kouzes and Posner study was identified as an outlier despite its relatively small effect size because its large sample size (*N* = 5,838) increased its contribution to the homogeneity statistic (see Hedges & Olkin, 1985).

[12] The following study characteristics lacked sufficient information for model testing: (a) level of leadership, (b) percentage of men in subordinate roles, (c) confounding of male–female comparison on individual variables, (d) confounding of male–female comparison on institutional variables, and (e) reliability of measures for the scales and subscales. All other study characteristics were treated as potential moderators of the effect sizes.

[13] Although the model for the basis of selection of the raters was significant (*p* = .03), it does not appear in Table 5 because none of the contrasts between the categories reached significance. Although the continuous model for the percentage of men in the leader roles was also significant (*p* = .02), it does not appear in Table 6 because of its instability. Specifically, when the model was calculated by including all 37 studies for which the proportion of men in the leader roles was known, the direction of the relation was that the sex difference went less strongly in the
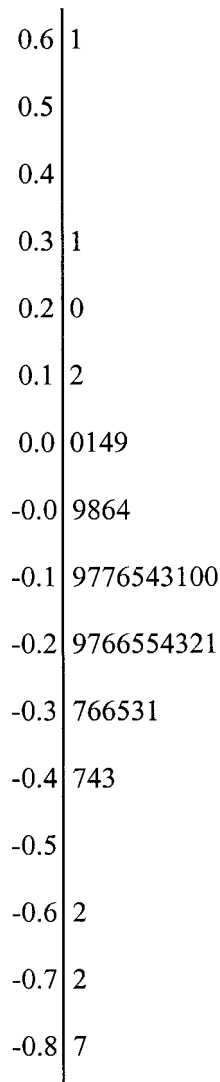
```
0.6 | 1
0.5 |
0.4 |
0.3 | 1
0.2 | 0
0.1 | 2
0.0 | 0149
-0.0 | 9864
-0.1 | 9776543100
-0.2 | 9766554321
-0.3 | 766531
-0.4 | 743
-0.5 |
-0.6 | 2
-0.7 | 2
-0.8 | 7
```

Figure 1. Stem and leaf plot of effect sizes for transformational leadership style (*d*s). Each effect size is represented by a stem, which appears to the left of the vertical line, and a leaf, which appears to the right of the line. The stem gives the value of the effect size to the nearest 10th, and the leaf gives the 100ths' place value. For example, −0.4 | 743 denotes three effect sizes: −0.43, −0.44, and −0.47, and 0.3 | 1 denotes one effect size of 0.31. When no leaf appears to the right of a stem (e.g., −0.5 |), no effect size beginning with that stem value was obtained.

female direction as the roles became more male dominated. However, when the model was calculated by including only the 23 of these studies that used the MLQ measure, the model was also significant (*p* < .001) but in the opposite direction. Moreover, when the four outlying effect sizes (see Footnote 11) were deleted from the 37 studies, the model was nonsignificant (*p* = .52). The model based on the 37 studies was thus especially affected by two outlying effect sizes (Church & Waclawski, 1998, 1999) from studies with highly male-dominated roles and an unusual measure of leadership style (Leadership Assessment Inventory). The other continuous models did not exhibit similar instability.

The categorical model for the specificity of the role description that defined the sample of leaders was nonsignificant.

Finally, among the models examining the attributes of the leadership style measures, only the model for the identity of the raters was significant. However, this model was relatively uninformative because the only significant difference was that the one study involving peer ratings differed from the studies in which the leaders rated themselves. For the seven studies whose data were separable by sex of raters (all of which involved ratings by subordinates), a model classifying the effect sizes by rater sex was nonsignificant.

Narrative Examination of Studies of Executives

Although too few studies could be classified by managers' level within organizational hierarchies to allow a confident quantitative analysis of this variable as a moderator of the sex differences in leadership style, the studies of executives are of special interest because glass ceiling analyses suggest that women who occupy such positions are especially likely to have faced a double standard and may experience particularly strong role incongruity. Moreover, leadership researchers have taken special interest in the effects of hierarchical level (e.g., Hunt, Boal, & Sorenson, 1990), with Lowe et al.'s (1996) meta-analysis finding that transformational leadership was somewhat less common at higher than lower levels of leadership hierarchies, albeit equally effective at higher and lower levels. In our meta-analysis, the seven studies examining executives had a mean weighted effect size on transformational leadership of −0.01 with a 95% confidence interval of −0.09 to 0.07. Although four of these seven studies of executives examined upper level school administrators and three examined business executives, executive leadership is approximately as male dominated in educational organizations as business organizations, with recent U.S. data revealing that there are 86.6% men in the district superintendent role ("The State of Superintendents," 2000) and 87.5% men in corporate officer roles in the Fortune 500 (Catalyst, 2002a). Also, claims of discrimination against women seem to be common in relation to the school superintendent role (e.g., Keller, 1999), just as they are in relation to business executive roles (e.g., Collinson, Knights, & Collinson, 1990; Federal Glass Ceiling Commission, 1995).

Among the four educational studies, three assessed leadership using the MLQ instrument. Thus, Rosen (1993) examined the MLQ self-reports of 29 male and 67 female school superintendents from the states of New York, New Jersey, and Connecticut and produced an overall transformational effect size of −0.44 as well as effect sizes of −0.47 for contingent reward and 0.46 for passive management by exception. On the basis of self-report measures of other variables and interviews with female superintendents, Rosen (1993) concluded that women in the superintendent role were especially characterized by a leadership style that focused on "curriculum and instruction, nurturing ideas and human resources, sharing leadership and empowering others, a knowledge of interpersonal relationships, and a willingness to take time and attend to detail." Floit (1997) examined the MLQ self-reports of 116 male and 77 female school superintendents in the state of Illinois, producing an overall transformational effect size of −0.47. This study also included interviews with female and male superintendents, which confirmed that "those who scored highest on the total transformational scale typically practiced transformational leader-

Table 5
Categorical Models Predicting Effect Sizes for Transformational Leadership Style

Variable and class	k	d_{i+}	95% CI	Q_B	Q_{Wi}[a]
Publication source				24.21**	
Journal article	16	-0.12_x	$-0.17, -0.07$		95.92**
Book or book chapter	3	0.03_y	$-0.03, 0.09$		1.53
Dissertation or thesis	15	-0.19_x	$-0.27, -0.12$		28.34*
Unpublished document or mixed	10	-0.12_x	$-0.16, -0.08$		2.95
Type of organization				19.28**	
Business	13	$-0.08_{x,y}$	$-0.14, -0.03$		43.61**
Educational	15	-0.21_x	$-0.29, -0.14$		68.79**
Governmental	3	$-0.11_{x,y}$	$-0.21, 0.00$		1.01
Other[b]	3	$-0.33_{x,y}$	$-0.49, -0.17$		2.03
Mixed	10	-0.07_y	$-0.11, -0.04$		18.22
Nationality of leaders				23.93**	
United States	24	-0.12_x	$-0.17, -0.07$		74.13**
Canada	5	-0.32_y	$-0.42, -0.21$		0.72
Other English-speaking	7	$-0.15_{x,y}$	$-0.23, -0.06$		1.07
Non-English-speaking European	2	$-0.19_{x,y}$	$-0.52, 0.14$		0.09
Mixed	6	-0.06_x	$-0.10, -0.03$		53.00**
Identity of raters				19.39**	
Leaders	26	-0.06_x	$-0.10, -0.02$		68.36**
Subordinates	26	$-0.15_{x,y}$	$-0.18, -0.11$		61.75**
Superiors	3	$-0.01_{x,y}$	$-0.18, 0.16$		0.34
Peers	1	-0.28_y	$-0.39, -0.17$		
Mixed	2	$-0.27_{x,y}$	$-0.80, 0.27$		0.00

Note. Positive effect sizes (ds) indicate that men had higher scores than women on transformational style, and negative ds indicate that women had higher scores than men. Differences between ds that do not have a subscript in common are significant at the .05 level or smaller (post hoc). k = number of studies; d_{i+} = mean weighted d within each class; CI = confidence interval; Q_B = between-classes effect; Q_{Wi} = homogeneity within each class.
[a] Significance indicates rejection of the hypothesis of homogeneity. [b] The other types of organizations were health care and a national sports organization.
* $p < .05$. ** $p < .01$.

ship in their work in the superintendency while those who scored lowest were more varied in their leadership approach and sometimes practiced transactional or laissez-faire leadership" (Floit, 1997). Bass (1985) examined the MLQ self-reports of 15 male and 8 female executive-level central school administrators in the South Island of New Zealand and reported an overall transformational effect size of -0.37 as well as effect sizes of -0.65 for contingent reward and -0.06 for passive management by exception. This brief report did not yield other types of information about these executives.

The four remaining studies of executives used other instruments to assess leadership style. Golden's (1999) study of 128 male and 26 female school superintendents in the state of New Jersey entailed self-reports on the Leadership Practices Inventory, which resulted in an overall transformational effect size of -0.25. This

Table 6
Continuous Models Predicting Effect Sizes for Transformational Leadership Style

Predictor	k	b	β
Year of publication	44	-0.02**	-0.26
Average age of leaders	26	-0.02**	-0.49

Note. Models are weighted least squares simple linear regressions calculated with weights equal to the reciprocal of the variance for each effect size. k = number of studies.
** $p < .01$.

study was not focused on comparing male and female leadership styles and did not yield other information relevant to the purposes of this meta-analysis. Ernst's (1998) study sampled executives from three American Management Association executive membership mailing lists. These 821 male and 699 female business executives completed The Leadership Profile, from which we produced an overall transformational effect size of -0.06 as well as a contingent reward effect size of -0.17. This study, which was not concerned with comparing male and female leaders, also did not yield other relevant information.

Church and Waclawski (1998, 1999) examined executives from a large global corporation on the Leadership Assessment Inventory, from which we accepted three subscales as generally comparable to MLQ transformational subscales. Although their articles did not include a comparison of the male and female executives, A. H. Church and J. Waclawski (A. H. Church, August 29, 2000, personal communication) provided the following data in response to our request: (a) from the study published in 1998, both self-reports and subordinate reports for 228 male and 25 female executives and (b) from the study published in 1999, self-reports, subordinate reports, and superior reports (from both indirect and direct superiors) for 334 male and 33 female executives. Averaging across the different categories of raters, we produced overall transformational effect sizes of 0.61 for the 1998 article and 0.20 for the 1999 article. Thus, in contrast to the other studies of executives, these two studies found male leaders more transformational than female leaders.

Table 7
Summary of Effect Sizes for Outcomes of Leadership

| | MLQ Norming Study | | Other studies | | |
Measure	d	95% CI	k	d_+	95% CI
Extra effort	−0.09	−0.13, −0.04	5	−0.15	−0.24, −0.06
Satisfaction	−0.14	−0.18, −0.10	7	0.00	−0.08, 0.07
Effectiveness	−0.22	−0.27, −0.18	10	−0.05	−0.12, 0.03

Note. Positive effect sizes (ds) indicate that men had higher scores than women, and negative ds indicate that women had higher scores than men. Multifactor Leadership Questionnaire (MLQ) Norming Study ns were between 2,742 and 2,869 female leaders and 5,904 and 6,106 male leaders, depending on the scale. CI = confidence interval; k = number of studies; d_+ = mean weighted d.

In general, these seven studies of executives were quite inconsistent in their findings. The larger differences in the female direction in the educational organizations than in the business organizations are consistent with the model for type of organization in Table 5. Perhaps some organizations, especially some corporations, do not provide a congenial culture in which women are able to display transformational leadership. Although these studies of executives are informative, they provide a limited amount of data for drawing general conclusions about the effects of hierarchical level of leadership on male and female leadership style.

Outcomes of Leadership

The comparisons between male and female leaders on the outcomes of their leadership appear in Table 7, reported separately for the MLQ Norming Study and the small number of other studies that included outcome findings. In the Norming Study, women produced significantly better outcomes than men on all three outcome measures: the extra effort they inspired from subordinates, the satisfaction that people expressed about their leadership, and their overall effectiveness in leading. The data from other studies, which are too sparse to be very informative, confirmed the Norming Study findings for extra effort but did not produce a significant male–female difference on satisfaction or effectiveness.

Discussion

Consistent with the social role theory assumption that both gender roles and leader roles influence leadership styles, significant sex differences emerged in most aspects of transformational, transactional, and laissez-faire leadership styles.[14] The overall male–female comparisons on transformational leadership and its subscales and on the Contingent Reward subscale of transactional leadership show significantly higher scores among women than men, except for the Idealized Influence (behavior) subscale. With this one exception, the female direction of these differences prevailed regardless of whether we examined the large MLQ Norming Study (Center for Leadership Studies, 2000b), a heterogeneous group of other studies that used the MLQ measures, or a smaller group of studies that used a variety of other measures of the styles. Less information was available concerning the other two transactional styles and laissez-faire leadership, which had no representation of measures other than the MLQ. Nevertheless, it is notable that men obtained significantly higher scores than women on the Management by Exception (active) and Management by Exception

(passive) subscales and the Laissez-Faire Scale. This pattern was present when the MLQ Norming Study and the other MLQ studies were examined separately, except for the Management by Exception (active) subscale in the other MLQ studies. Nonetheless, in interpreting the sex comparisons on these less effective styles, we note the low reported frequencies of these less effective behaviors compared with the more effective transformational and contingent reward behaviors. Thus, these less effective aspects of leadership style, although not typical of leaders of either sex, were more common in male leaders than female leaders. In summary, given the positive relations to effectiveness of transformational styles and the contingent reward component of transactional leadership and the null or negative relations of the other styles to effectiveness (Center for Leadership Studies, 2000b; Lowe et al., 1996), these data attest to the ability of women to perform very well in leadership roles in contemporary organizations.

All of the mean effect sizes obtained in this meta-analysis were small, certainly when evaluated in relation to Cohen's (1977) benchmarks for the d metric, by which 0.20 can be described as small, 0.50 as medium, and 0.80 as large. Moreover, transforming the mean weighted effect size for transformational leadership of 0.10 into the metric of Rosenthal and Rubin's (1982) binomial effect-size display suggests that above-average transformational tendencies were manifested by approximately 52.5% of female managers and 47.5% of male managers. This difference of approximately 5% suggests a very modest overall tendency toward greater transformational leadership on the part of female than male leaders.[15] Still, the proportion of study-level comparisons on overall transformational leadership that were in the female direction (36 of 44 comparisons, yielding a proportion of .82) differed from .50, the proportion expected under the null hypothesis ($p < .01$ by sign test). Also bolstering confidence in the findings is their consistency across various ways of analyzing the data (see Tables 3 and 4). Our examination of the study characteristics as moderators of the female advantage in transformational leadership

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[14] See Antonakis et al. (2003) for related findings based on business samples consisting of 2,279 pooled male and 1,989 pooled female raters who evaluated same-gender leaders. (This study was not available when the meta-analysis was conducted.)

[15] Because the style measures showed relatively high reliability (see Results), correcting the effect size estimates for unreliability would increase their magnitude only slightly. For example, the mean overall transformational effect size (see Table 3) would become −0.11, compared with the uncorrected value of −0.10 (Cronbach, 1990; Hunter & Schmidt, 1994).

yielded relatively few significant models, as would be expected in view of the relatively high degree of consistency of the findings across the studies. Some of the models were not very informative. In particular, the significant models for publication source and nationality of leaders were of limited value because most of the categories that deviated significantly from others contained relatively few studies (e.g., "book chapter" for publication source and "Canada" for nationality of leaders). Although not all of the critical comparisons were significant in the model for type of organization, the relatively large sex difference in the female direction in educational and miscellaneous other organizations (i.e., health care, sports), may reflect differences in organizational culture, with some types of organizations providing a more congenial context for women's display of transformational leadership.

Interpretation in Terms of Men and Women Occupying Different Leadership Roles

The analysis of the specificity of the role description that defined the sample of leaders in the studies speaks to the issue of whether the tendency for women to show more transformational leadership than men erodes when the male and female managers are in the same role (Kanter, 1977; Kark, 2001). Within broader groupings of managers, the women and men in the sample may have been positioned at different levels of management and in different functional areas (e.g., personnel, production; U.S. Bureau of Labor Statistics, 2001). Contrary to this hypothesis that differing placement is responsible for sex differences in leadership style, the effect sizes in this meta-analysis did not differ ($p = .29$) between (a) the studies that assessed leaders who had the same specific role description (e.g., college hall directors) and (b) the studies that assessed leaders in a broad category (e.g., managers of government research organizations).

Our additional effort to address this issue through direct coding of the extent to which the male–female comparison was confounded with individual or institutional variables was compromised because only a minority of studies contained sufficient information to allow this variable to be coded as other than "unknown." Of course, differing managerial roles may sometimes foster differences in leadership style, but our data suggest that male and female styles tend to differ even when men and women occupy the same leadership role.

Interpretation in Terms of Prejudice and Double Standards

According to the double standard explanation of women's more transformational styles, women often faced discrimination in attaining leadership positions or, consistent with Powell and Butterfield's (1994) study, hesitated to become candidates, perhaps because of expected discrimination. To the extent that these phenomena occurred, those women who actually obtained these positions would on the average be more competent than their male counterparts. Therefore, the tendency of women to be more transformational than men and to manifest more contingent reward behavior would be intact when men and women occupy the same role, as would the tendency for men to exceed women on the other, less effective styles. These implications of the style findings are corroborated by our findings showing somewhat better performance of women than men on the measures of the outcomes of leadership.

Another implication of the double standard argument is that the tendency for men to exceed women on the less effective aspects of transactional styles (active and passive management by exception) and on the laissez-faire style could reflect a different standard applied to men than women for judging their performance inadequate and therefore deselecting them from leadership roles. Some substantiation of this possibility can be found in experimental research on double standards for competence in task groups whose members differed in status characteristics such as sex (see Foschi, 2000). Although most of this research has concerned the application of stricter standards to lower status individuals (e.g., women) for inferring high competence, Foschi (1992, 2000) has shown that it is theoretically consistent with expectation states theory (Webster & Foschi, 1988) to argue that stricter standards would be applied to higher status individuals (e.g., men) for inferring incompetence—that is, those individuals would be given the benefit of the doubt. Substantiating this prediction, Foschi, Enns, and Lapointe (2001) found that male participants, compared with female participants, required stronger evidence of poor performance before they concluded that they lacked ability ($p = .06$). Similarly, Biernat and Fuegen (2002) found that participants who had to decide whether to fire a poorly performing employee or put the individual on probation were more likely to fire the female employee than the male employee and more likely to put the man than the woman on probation.

The double standard argument suggests in addition that women's tendency to be more transformational than men would be larger to the extent that leadership roles were male dominated and thus women presumably faced more discrimination. However, our models examining the percentage of men in studies' leadership roles proved to be ambiguous (see Footnote 13). This selection hypothesis might also have been addressed by examining the level of leadership as a potential moderator because discrimination is presumably greater for higher level leadership roles. However, the fact that relatively few studies allowed a classification of the samples of leaders according to their level in organizational hierarchies precluded adequate examination of this variable, and the effect sizes were inconsistent across the seven studies of executives.

The moderator analyses involving age and year of publication may also be relevant to interpretation in terms of prejudicial double standards. Possibly supporting a double standard interpretation is the more pronounced tendency for women to be more transformational than men in studies whose leaders tended to be older. It could be that older leaders, to a greater extent than younger leaders, were the survivors of discriminatory processes by which women had to be more skilled than men to attain and retain their positions. Also relevant is the model for year of publication, which indicates that the tendency for female leaders to be more transformational than male leaders became more pronounced in more recent studies. Although the value of this model is reduced by the relatively short span of years represented in this research literature (i.e., 1985–2002), this finding suggests that women, more than men, may be increasingly turning to transformational leadership. This secular trend would be inconsistent with the hypothesis that prejudice against female leaders is one cause of women's distinctive leadership behavior if one assumes that this prejudice has decreased over time (Eagly & Karau, 2002). It could

instead be that women are gradually becoming freer to manifest leadership behaviors that differ from men's behaviors because the increasing numbers of female leaders provide a more supportive context in which these behaviors meet with approval.

In summary, the proposition that the sex differences we obtained for leadership style reflect prejudice and the attendant double standard that disadvantages women and advantages men is consistent with the overall patterning of the sex differences across the subscales of the leadership style measures—that is, of women exceeding men on the more effective styles and men exceeding women on the less effective styles. With respect to moderator analyses that might be viewed as relevant to the double standard interpretation, the picture is decidedly more mixed. The ambiguity of the moderator analyses could perhaps reflect the pervasiveness of prejudicial evaluations of women in relation to leadership roles, whereby biases in favor of men and against women may not have been confined to particular settings—for example, male-dominated roles.

Interpretation in Terms of Gender Roles and Role Incongruity

The other possible explanations that we proposed in the beginning of this article also remain viable. Specifically, female managers may be especially likely to enact transformational leadership (and the contingent reward aspects of transactional leadership) because this repertoire of effective leader behaviors typically allows them to lessen the role incongruity dilemmas that are exacerbated by adopting more masculine, command-and-control styles of leadership (Eagly & Karau, 2002; Yoder, 2001).

It is also possible that at least some of the differences revealed by this meta-analysis (e.g., on individualized consideration) reflect the spillover of gender-role norms onto organizational behavior and many leaders' personal acceptance of these norms. However, the spillover argument is less adequate for explaining differences that are not obviously related to gender roles—for example, women's tendency to exceed men on the Idealized Influence and Intellectual Stimulation subscales. Moreover, men's higher scores on measures of the less effective aspects of leadership—passive management by exception and laissez-faire leadership—would tend to violate the agentic norms of the male gender role and thus be inconsistent with the argument that the male gender role spills over onto their leadership behavior.

Implausibility of Publication Bias

Another consideration in interpreting the findings is the possibility that they might reflect publication bias (Sutton, Song, Gilbody, & Abrams, 2000). If, for example, findings showing that women are more transformational than men were more likely to be published than studies reporting a difference in the opposite direction, the sex differences that we obtained might erode entirely were all data sets included in the meta-analysis. However, there are several reasons why this interpretation is not viable. First, the majority of the studies in the meta-analysis were unpublished (see *Results*), reflecting our successful search for dissertations and other unpublished documents. Second, in many of the published and unpublished documents that we obtained, the relevant sex comparisons were absent, and we obtained these directly from the authors. Further demonstrating that sex comparisons were not

typically a focal hypothesis in the studies, the titles of 61% of the studies did not contain words referring to sex or gender issues. Third, even for studies focusing on sex and gender, it is not clear what authors' and journal editors' expectations might have been for the direction of the findings—that is, in the male direction on the more effective leadership styles because men dominate higher level leadership roles or in the female direction for some of the reasons that we feature in this article. In sum, there are several reasons why the usual publication bias logic of selection in favor of the meta-analytic findings does not apply.

Some Measurement Issues

Our findings might also be questioned by critics who doubt the validity of measures of transformational, transactional, and laissez-faire styles and the evidence for the relations of these measures to effectiveness (e.g., Yukl, 2002). Although a substantial methodological literature criticizes these and other measures of leadership style (see Bass, 1990; Tejeda, Scandura, & Pillai, 2001), the validity of measures of transformational and transactional leadership, especially the MLQ, has been established by an extensive body of research (Bass, 1998; Lowe et al., 1996). The paper-and-pencil measures used in this research tradition are surely not free of distortions and biases but nonetheless do predict both subjective and objective indicators of leaders' effectiveness. Still, these measures no doubt provide an incomplete rendition of the skills and behaviors required for effective leadership. To the extent that managers become effective through behaviors that are different from those included in measures of transformational leadership and that men exceed women on these other aspects of leadership, men's greater success in arriving at the top of hierarchies may reflect these unmeasured behaviors. Consistent with classic contingency theories of leadership style (see Chemers, 1997; Yukl, 2002), it is unlikely that any one style of leadership, including transformational leadership, is effective under all of the conditions that managers are likely to face.

Another important consideration is that measures of transformational and transactional leadership behavior may do a better job of assessing the behaviors that are relevant to effectiveness than those that are relevant to ascending in organizational hierarchies. As Luthans (1988) has shown, managers who are successful in the sense that they rise rapidly in hierarchies may be somewhat different from managers who are effective in the sense that they have profitable units and committed, satisfied subordinates. In Luthans's (1988) study, managers who were quickly promoted "spent relatively more time and effort socializing, politicking, and interacting with outsiders than did their less successful counterparts . . . [and] did not give much time or attention to the traditional management activities of planning, decision making, and controlling or to the human resource management activities of motivating/reinforcing, staffing, training/developing, and managing conflict" (p. 130). To the extent that this analysis is valid, women might ascend more slowly than men because they are more concerned with managing effectively and less concerned with politicking. Related to this perspective is Conlin's (2002) observation in *Business Week* that managerial women are often faulted for lacking "executive presence," defined as "that ability to take hold of a room by making a polished entrance, immediately shaking people's hands, and forging quick, personal connections" (p. 88). However, this analysis fails to acknowledge the constraints

of role incongruity, whereby highly political, confident, and self-promoting women may be penalized for adopting what is often perceived as an overly masculine style (Carli & Eagly, 1999; Eagly & Karau, 2002; Rudman, 1998). Nonetheless, the gap between women's evidently more effective style and their lesser success in achieving promotions to more powerful roles suggests that the behaviors that foster promotions should receive special scrutiny from researchers.

Barriers to Women Occupying Leadership Roles

In response to our findings, a critic might argue that any superiority of women as leaders should propel them to the top of organizations. By this logic, the dearth of women in elite leadership roles suggests male superiority in leadership, not the female superiority suggested by our findings. Of course, this argument assumes a meritocracy in which the more competent people win promotions. However, organizations clearly depart from a meritocracy structure in allowing and even fostering differential reactions to men and women who are equivalent in their qualifications (Collinson et al., 1990; Martin, 1992; Ragins & Sundstrom, 1989; Stroh, Brett, & Reilly, 1992). Women's advantages in leadership style, which are documented by this meta-analysis, are thus sometimes countered by a reluctance, especially on the part of men, to give women power over others in work settings (Eagly & Karau, 2002). A glass ceiling can slow or stop women's ascent in organizational hierarchies, despite their potential for leadership.

The challenges that female leaders face are revealed in research findings showing that women's leadership behaviors are evaluated less favorably than the equivalent behaviors of men to the extent that leader roles are male dominated or given especially masculine definitions and when men serve as evaluators (see Eagly & Karau, 2002; Eagly et al., 1992). This legitimacy problem may be only partially eased by female leaders' careful balancing of the masculine and feminine aspects of their behavior through a transformational style or otherwise adding communal elements to behavior. It is even possible that some relatively communal behaviors (e.g., individualized consideration, extensive consulting of colleagues) might compromise women's advancement to higher level positions in some contexts because such behaviors may appear to be less powerful or confident than those of their male counterparts. These behaviors might be especially devalued in leadership roles that are male dominated, strongly hierarchical, and ordinarily enacted in a command-and-control style.

Another possible source of resistance to women's participation as leaders is that social and organizational changes have placed women, more often than men, in the position of being newer entrants into higher level managerial roles. As newcomers, women likely reflect contemporary trends in management, which feature many themes that are consistent with transformational leadership. For example, suggestive of transformational leadership is the emphasis of proponents of learning organizations (e.g., Garvin, 1993; Senge, 1990) on effective communication, supportiveness, participation, and team-based learning as critical to organizational effectiveness. Similarly, continuous quality-improvement theorists and practitioners (e.g., Deming, 1986; Juran, 1988) have stressed the importance of empowering all employees to make decisions that can improve the quality of their work and removing sources of fear and intimidation from the workplace (see review by J. R. Hackman & Wageman, 1995). As Fondas's (1997) textual analysis

of mass-market books on management shows, managers are exhorted to "reorient themselves toward a new role of coordinating, facilitating, coaching, supporting, and nurturing their employees" (pp. 258–259). This innovative style, which contrasts with traditional ideas about managers as exerting hierarchical control over their subordinates through planning, organizing, and monitoring, may threaten established managers. A reluctance to allow women to ascend in organizational hierarchies may thus reflect skepticism about changing managerial styles (e.g., "What goes around," 2001) as well as a prejudicial tendency to evaluate women's leadership behavior less positively than the equivalent behavior of men.

Conclusion

The contemporary claim that women have superior leadership skills (e.g., Sharpe, 2000) is bolstered by our meta-analysis of 45 studies. Even though these male–female differences are small, they corroborate generalizations that women's typical leadership styles tend to be more transformational than those of men (e.g., Bass et al., 1996) and are thus more focused on those aspects of leadership that predict effectiveness. Also, in terms of the transactional aspects of leadership style, women were more prone than men to deliver rewards to subordinates for appropriate performance—a behavioral pattern that is also predictive of effective performance by leaders (Center for Leadership Studies, 2000b; Lowe et al., 1996). Somewhat less certain, because less information was available, is support for our generalization that the less effective leadership styles (the transactional behaviors other than contingent reward as well as laissez-faire behavior) were more common in men. Although it would have been informative if we had been able to evaluate within this meta-analysis the correlational relations between these styles and effectiveness both overall and separately for male and female leaders, such data were not obtainable. The sex comparisons on effectiveness that were available suggest that transformational leadership must be effective for women as well as men. Specifically, in the large MLQ Norming Study, which yielded male–female comparisons on the outcomes of leadership in terms of extra effort, satisfaction, and effectiveness, these outcomes were somewhat more positive for female than male leaders.

Critics of the evidence that we have provided for differences in the leadership styles of women and men might take the position that, given the small size of the effects demonstrated in the meta-analysis, these findings are unimportant and unlikely to have meaningful consequences in organizations. In response to this point, one consideration is that, from the perspective of social role theory (Eagly et al., 2000), differences in the behaviors of men and women who occupy the same or similar leadership role are expected to be small because these behaviors reflect the dual influence of gender roles, which differ for men and women, and organizational roles, which do not differ. Nonetheless, small effects, when repeated over individuals and occasions, can produce substantial consequences in organizations (Martell, 1999; Martell, Lane, & Emrich, 1996). Effects that would strike most researchers as quite small can have considerable practical importance in a variety of contexts (see Abelson, 1985; Bushman & Anderson, 2001; Rosenthal, 1990). When small differences between social groups are repeatedly observed and acted on over long time periods, their effects are magnified. Nonetheless, knowing that a particular individual is female or male would not be a reliable indicator of that person's leadership style.

As a final point, our findings suggest some of the advantages that can follow from ensuring that women have equal access to leadership roles. It appears that female leaders are somewhat more likely than their male counterparts to have a repertoire of the leadership behaviors that are particularly effective under contemporary conditions—specifically, transformational and contingent reward behaviors. The causes of this sex difference may lie in several factors: (a) the ability of the transformational repertoire (and contingent reward behaviors) to resolve some of the incongruity between leadership roles and the female gender role, (b) gender roles' influence on leadership behavior by means of the spillover and internalization of gender-specific norms, and (c) the glass ceiling itself, whereby a double standard produces more highly skilled female than male leaders. Additional primary research is needed to clarify these causes. Nonetheless, giving women equal access to leader roles under current conditions not only would increase the size of an organization's pool of potential candidates for these roles but also would increase the proportion of candidates with superior leadership skills. More broadly, the implementation of nondiscriminatory selection for leadership positions also would produce greater fairness and economic rationality, which are characteristics that should foster organizations' long-term success.

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