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Exploring the Dynamics of Incongruent Beliefs about Women and Leaders

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### Abstract

People tend to have similar beliefs about leaders and men but dissimilar beliefs about leaders and women. A decrease in this perceived incongruity between beliefs about women and leaders might follow from perceived changes in either or both of these stereotypes. In two experiments we investigated the dynamics of this stereotype incongruity by examining cross-temporal perceptions of change in women's roles and leadership demands. In Experiment 1, participants judged a target group (leaders, men, or women) in a specified year in the past, the present, and the future with regard to gender-stereotypic traits. In Experiment 2, participants evaluated the same target groups in a future society in which the role distribution between the sexes was described as traditional, same-as-today, or equal. Altogether our findings indicate that the perceived incongruity between the leader stereotype and the female stereotype is a dynamic phenomenon. Participants' beliefs indicated erosion of the perceived incongruity between leaders and women because of a perceived change in women's roles. We discuss the implications of these beliefs for future social change.

*Keywords:* leadership, management, social perception, gender stereotypes, social roles

### Exploring the Dynamics of Incongruent Beliefs about Women and Leaders

Women have been moving up the career ladder of organizations (see Eagly & Carli, 2007). Nevertheless, all over the world women are still under-represented in management positions compared to men, especially as elite leaders and leaders (Catalyst, 2008; United Nations Development Programme, 2009a; for an overview on gender and management, see Broadbridge & Hearn, 2008). For example, in the 50 largest publicly traded corporations in each of the nations of the European Union, only 11% of the members of the board of directors are women (European Commission, 2009). In Switzerland, although women comprise 30% of the legislators, senior officials and managers (United Nations Development Programme, 2009b), their numbers in top management positions remain especially low. According to a study by the Swiss investment fund provider Ethos only 6% of board directors are women (Swissinfo, 2009). This article explores the inconsistency between ideas about women and leaders as one possible explanation for the low concentration of women in management. Specifically, we examine perceptions of change in stereotypes about leaders and women, which might foster a decrease in the perceived incongruity of leaders and women.

Social perceivers have long been known to hold stereotypic beliefs about the present attributes of groups (Katz & Braly, 1933). More recently, social perceivers' beliefs have also been found to incorporate ideas about a group as changing its characteristics (Diekmann & Eagly, 2000; Diekmann, Eagly, Mladinic, & Ferreira, 2005). In addition to beliefs about present attributes, perceivers may possess beliefs about group members' past attributes and even future attributes if they project changes to continue into the future. The underlying framework for this research on *dynamic stereotypes* is the social structural perspective on stereotyping (e.g., Eagly & Kite, 1987). Specifically, social role theory (Eagly, Wood, &

Diekman, 2000; Wood & Eagly, 2010) states that perceivers infer a correspondence between the behaviors that people perform and their inner dispositions, that is, through the process of *correspondent inference*, they conclude that men and women have the characteristics that are required for the roles that each gender occupies in society. Because men predominate in paid employment roles and women predominate in caretaking roles, the male stereotype includes agentic characteristics (e.g., independent, assertive) and the female stereotype communal characteristics (e.g., sympathetic, kind) (e.g., Diekman & Eagly, 2000; Williams & Best, 1990)<sup>i</sup>. This logic implies that to the extent that men's and women's typical roles have been observed to be changing and are expected to continue to change in the future, perceivers should infer that the characteristics of the sexes change accordingly so that they can function in their roles. More generally speaking, this logic suggests that perceivers act as "implicit role theorists" (Diekman & Eagly, 2000, p. 1171) by inferring change in personal characteristics from change in roles.

Research within this social role theory framework has further demonstrated that prejudice against women in leadership roles follows from perceived incongruity between people's beliefs about women and leaders (Eagly & Karau, 2002). Incongruity between these roles arises because successful leaders are believed to possess predominantly agentic traits that are similar to those ascribed to men (see meta-analysis by Koenig, Eagly, Mitchell, & Ristikari, 2010). Nevertheless, in line with the social structural perspective, to the extent that change in the organizational environment (e.g., less hierarchical organizational structures) and therefore in leadership demands (e.g., mentoring and empowering employees instead of directing and controlling employees) has been occurring and will occur, perceivers may infer that the characteristics of leaders change accordingly.

In summary, perceivers' stereotypes about women and leaders may be dynamic if they incorporate beliefs about changing characteristics. If perceivers think that women are

becoming more similar to leaders, the perceived incongruity of women and leaders should lessen because people project that either women are gaining typically masculine qualities over time and/or leaders are gaining typically feminine qualities. In any case, the trajectories of change that perceivers may project for women and/or leaders should depend on the actual change in women's roles and actual change in leaders' role demands respectively. We will review evidence for this social change in the next subsections.

### *Changes in Roles of Women and Men*

An increased similarity in beliefs about women and leaders might be due to a projected change over time in the stereotype of women. According to social role theory, such projections of change would be particularly fuelled by women's increased occupancy of roles thought to require typically masculine qualities, for example, formerly male-dominated occupational roles such as lawyer or manager.

In many Western societies, women's roles have shown remarkable change (for an overview, see Eagly & Sczesny, 2009; Sczesny, Bosak, Diekmann, & Twenge, 2005). For example, in the United States, women's participation in the workforce rose from 32.7% in 1948 to 59.5% in 2008 (U.S. Bureau of Labor Statistics, 2009). Similarly, in the European Union, the percentage of working women has increased from 51.4% in 1997 to 59.4% in 2008 (Eurostat, 2010). Women also increasingly entered formerly male-dominated occupations in management and the professions (e.g., U.S. Bureau of Labor Statistics, 2009). This enormous change in women's participation in the paid labour force and women's increased occupancy of formerly male-dominated occupations is predicted to foster beliefs that women increasingly possess typically masculine qualities associated with employment roles. In contrast, the roles of men have been relatively stable across time as evident by only a small decline in the participation rate in the paid labour force (U.S. Bureau of Labor Statistics, 2009) and the continuing overrepresentation in occupations of high power (e.g.,

Catalyst, 2008). These observations should fuel beliefs that men retain their typically masculine qualities associated with employment roles.

Similarly, women's greater involvement than men's in domestic responsibilities and caretaking roles (Bianchi, 2000; England, 2003) might foster beliefs that women remain high in typically feminine qualities, and that the relative stability in men's adoption of communally demanding roles (Bianchi, Robinson, & Milkie, 2006; U.S. Bureau of Labor Statistics, 2009) might foster beliefs that men gain typically feminine qualities associated with these roles only to a small extent or not at all.

In line with the social structural perspective, it was found that greater change in women's than men's roles led perceivers to infer stability in attributes of men and dynamism in attributes of women, whereby women were perceived as increasing in agency as a function of their new roles (Diekmann & Eagly, 2000; Diekmann, et al., 2005; Wilde & Diekmann, 2005).

#### *Changes in Leadership Roles*

The beliefs about women and leaders might also be perceived to becoming more similar due to a projected change over time in the stereotype about leaders. Eagly and Karau (2002) argued that if leadership roles encompassed more typically feminine characteristics and fewer typically masculine characteristics they would be more congruent with the stereotype of women.

In line with this notion, many organizational scholars have suggested a shift of consensual models of leadership (e.g., Gergen, 2005; Lipman-Blumen, 2000; McCauley, 2004; Rastetter, 2001). These new models of leadership would emphasize the importance of person-oriented activities such as participatory decision making, democratic relationships, and teamwork for success in an increasingly diverse and competitive economic environment. For example, transformational leadership (see Avolio, 1999; Bass, 1998) is a more androgynous leadership style which incorporates typically feminine characteristics along with

typically masculine characteristics; its individualized consideration subscale which emphasizes coaching and advising employees was found to be highly correlated with femininity whereas its intellectual stimulation subscale which emphasizes intelligence, rationality and problem-solving was found to be correlated with masculinity (Hackman, Furniss, Hills, & Paterson, 1992). Moreover, research on gender-typing of managerial roles has shown the prevalence of typically masculine and feminine qualities in U.S. business school students' perceptions (Atwater et al., 2004). Finally, recent meta-analytic findings by Koenig and colleagues (2010) yielded a decrease in the construed masculinity of leader roles over time with the authors concluding that this decline was due to change in cultural construals of leadership. Thus an androgynous shift in leadership demands – that is the existence of typically feminine qualities along with typically masculine qualities traditionally associated with leadership – is predicted to foster beliefs that leaders are gaining communal characteristics associated with these new normative ideas of good leadership but that they are retaining their agentic characteristics traditionally associated with effective leadership.

It is important to note that this shift in the construal of “good leadership” is prescriptive in nature, that is, it reflects change in people’s consensual expectations about what qualities “good leaders” ought to have (prescriptive norm) and not what qualities leaders currently have (descriptive norm) (see Fiske & Stevens, 1993; Heilman, 2001).

In summary, there is evidence of change in women’s roles and leadership models which may lead perceivers to project change in women’s and leaders’ characteristics in a direction that would ease women’s role incongruity problem.

#### *Research Question and Overview of Present Research*

The aim of the present research is to investigate the dynamics of the perceived incongruity between the leader stereotype and the female stereotype. Specifically, we explore whether people’s beliefs about the characteristics of leaders, men, and women incorporate

change over time. This question is important as people's dissimilar beliefs about women and leaders function as impediments to women's advancement into leadership roles (Eagly & Carli, 2007; Eagly & Karau, 2002). Because people tend to believe that women lack the necessary attributes to succeed in a leadership role, they are often prejudiced against women as leaders. It follows that women have less access to leadership roles than do men who are stereotypically matched to leadership roles, unless the stereotype of women and/or the stereotype of leaders change.

The present research is also designed to examine whether perceived change in the masculine construal of leadership follows (a) from perceived change in women's roles (i.e. increase of women in formerly male-dominated roles) and/or (b) from perceived change in models of good leadership (i.e., increased importance of typically feminine qualities in leadership roles). The results will help to provide an explanation as to why people's beliefs about women and leaders may be dynamic or stable.

To address these issues, we carried out two experiments. Experiment 1 directed participants to judge men, women, and leaders in the present or in a specific past or future year on typically feminine and typically masculine traits. Prior to these judgments participants estimated the traditionalism of roles of men and women in order to explore whether assumptions about roles mediate inferences about the traits of men and women; similarly, participants estimated the importance of leadership traits in order to explore whether ideas about good leadership mediate inferences about the traits of leaders. To further explore the mediating influence of change in women's roles on the perceived incongruity between women and leaders, Experiment 2 manipulated the proportion of women and men in gender-typical roles and then asked the participants to estimate the characteristics of leaders, men, and women.



Consistent with previous research (e.g., Diekmann & Eagly, 2000; Wilde & Diekmann, 2005) we expected the following: Given major changes in women's employment roles, the stereotype of women was expected to be particularly dynamic in the form of increasing ascribed masculinity, whereas the stereotype of men and leaders was expected to be less dynamic. However, for leaders, a small change in a feminine direction was expected due to an androgynous shift in leadership demands.

Therefore, the present research is designed to investigate whether incongruent beliefs about women and leaders decrease in people's projections from the past to the present and from the present to the future (see Eagly & Karau, 2002). Specifically, we predicted the following:

Hypothesis 1: The perceived incongruity in trait ascriptions to women and leaders (i.e., fewer masculine and more feminine traits ascribed to women than to leaders) will be largest for the past, smaller for the present, and smallest or even absent for the future; in contrast, the perceived congruity in trait ascriptions to men and leaders will remain relatively stable over time.

Moreover, the present research allowed for a comparative test of two possible explanations for a decrease in incongruent views about women and leaders, that is, a change in women's roles or a change in leadership roles:

Hypothesis 2a: Perceived change in women's roles will mediate the effects of target year on masculine traits ascribed to women.

Hypothesis 2b: Perceived change in leadership qualities will mediate the effects of target year on feminine traits ascribed to leaders.

Thus the rationale for these hypotheses is that perceived change in women's roles and leadership models will lead perceivers to project change in women's and leaders' characteristics in a direction that would ease women's role incongruity problem.

## Experiment 1

### Method

#### *Participants and Procedure*

In line with most previous research (e.g., Dodge, Gilroy, & Fenzel, 1995; Schein, 1973; Schein, Mueller, & Jacobson, 1989; Sczesny, 2003a; Sczesny et al., 2004) the sample consisted of management students. Management students have been found to hold similar attitudes as corporate managers (see Schein, 2001). Moreover, we selected management students as they represent the managers of tomorrow; thus their perceptions of stability and change in stereotypes about men, women, and leaders are crucial to future organizational decisions (e.g., hiring, promotion). The 160 management students (83 men, 76 women, 1 sex unreported) were recruited from the University of Bern in Switzerland. They ranged in age from 20 to 45 with a mean of 24.4 years ( $SD = 2.89$ ). They were graduate students who had studied for an average of 7.6 semesters at the university level. The majority possessed prior work experience, with 71.3% having finished professional training (e.g., as a banker) and 84.2% having interned in companies. Three female surveyors recruited these participants on campus (e.g., library, cafeteria) and at the end of lectures on economics, where they asked every third person encountered to participate in a study on “perception of the work environment.” The surveyor handed each participant a questionnaire and collected it approximately 10 minutes later. At the end of the study, participants received a written debriefing and a short report of the results via email.

#### *Independent Variables*

The questionnaire asked the participant to focus on one target person, that is, an average man, average woman, or average leader (no gender specification) in 1950, the present, or 2050. For targets in the present condition, no year was specified (e.g., the average woman), whereas for all other year conditions, a year was specified (e.g., the average leader

in 2050). The resulting factorial design was Target Group (men, women, leaders)  $\times$  Year (past, present, future).

### *Measuring Instruments*

*Participant demographics.* Participants reported their gender, age, study major, and study semester as the last items on the questionnaire. They also provided information regarding prior work experience and their origin (German-, French-, vs. Italian-speaking part in Switzerland).

*Perceived role nontraditionalism.* The questionnaire assessed the perceived percentage of women in traditionally male-dominated occupations for the target year . Participants gave percentage estimates of female workers relative to male workers in four male-dominated occupations (lawyer, automobile mechanic, law enforcement officer, manager). The selection of these male-dominated occupations was based on a report of occupational gender-segregation in Switzerland (Charles, 2005). With each item represented by the percentage estimate of female workers (e.g., female lawyer), the occupation measure produced by averaging over the items showed high internal consistency ( $\alpha = .84$ ). Overall, participants gave low scores regarding the percentage of women in traditionally male-dominated roles ( $M = 22.74$ ,  $SD = 12.80$ ) on a scale ranging from 0 to 100 percent.

*Importance of leadership traits.* The questionnaire also assessed participants' prescriptive norms for leaders, that is, participants' perception of consensual expectations of traits that leaders ideally would have in each target year via the following question "How important are the following traits in a leader nowadays (in 1950, in 2050)?" (see Sczesny, 2003a; 2003b; Sczesny et al., 2004). Participants rated the perceived importance of each leadership-specific trait on a 7-point scale ranging from *not at all important* to *very important*. The leadership-specific characteristics included seven task-oriented traits (readiness to take risks, assertive, self-confident, plans ahead, administratively skilled, able to

cope with stress, dynamic) and six person-oriented traits (inspirational, communicative, cooperative, encouraging, visionary, motivational) derived from Sczesny and colleagues (2004). The ratings were averaged separately across the task-oriented traits ( $\alpha = .71$ ) and the person-oriented traits ( $\alpha = .89$ ). Overall, participants gave rather high scores regarding the importance of task-oriented traits ( $M = 5.73$ ,  $SD = .66$ ) and person-oriented traits ( $M = 5.25$ ,  $SD = 1.15$ ) on a 7-point rating scale.

*Gender-stereotypical traits.* Participants indicated the likelihood that the average target person would possess each of 14 gender stereotypical personality traits on a 7-point scale ranging from *not at all likely* to *very likely*. The characteristics were derived from the existing literature on gender-stereotypical dimensions (e.g., Bem, 1974; Diekmann & Eagly, 2000). The characteristics included seven masculine traits (performance-oriented, rational, competitive, ambitious, decisive, independent, persuasive) and seven feminine traits (compassionate, intuitive, confidence-builder, hard-working, just, trustworthy, honest). Although generic in nature, these gender-stereotypical traits could also be seen as relevant to work settings. The ratings were separately averaged across the masculine traits ( $\alpha = .84$ ) and the feminine traits ( $\alpha = .86$ ). Overall, participants' indicated a moderate likelihood that targets would possess typically masculine traits ( $M = 5.04$ ,  $SD = .97$ ) and typically feminine traits ( $M = 4.76$ ,  $SD = 1.02$ ) on a 7-point rating scale.

The order of the measuring instruments in the questionnaire was as follows: First participants completed the role nontraditionalism measure, followed by the leadership importance ratings, and then they were introduced to the target person before completing the stereotype measure. In the last section of the questionnaire participants provided their demographic information.

## Results

The results of the Target Group (men, women, leaders)  $\times$  Year (past, present, future) analyses of variance (ANOVAs) are reported separately for the dependent variables (that is, masculine traits and feminine traits). Throughout this article,  $p$ -values of .05 or less are considered.

Hypothesis 1 proposed that the perceived incongruity in trait ascriptions to women and leaders (i.e., fewer masculine and more feminine traits ascribed to women than to leaders) is largest for the past, smaller for the present, and smallest or even absent for the future, whereas the perceived congruity in trait ascriptions to men and leaders remains relatively stable over time. We therefore examined whether the Target Group by Year interaction is significant and whether the pattern of means for masculine and feminine traits demonstrates that perceived differences between women and leaders are becoming smaller and even non-significant over time, whereas differences between men and leaders remain small and non-significant over time.

### *Gender-Stereotypical Traits*

*Masculine traits.* The critical analysis was a 3 (Target Group)  $\times$  3 (Year) ANOVA. The means and standard deviations appear in Table 1.

The main effect for target group was significant,  $F(2, 151) = 30.28, p < .001, \eta^2 = .29$ : Men and leaders were ascribed more typically masculine traits than women,  $ps < .001$ , and leaders were ascribed more masculine traits than men,  $p = .007$ . In addition, the main effect for year was significant,  $F(2, 151) = 25.47, p < .001, \eta^2 = .25$ : Participants perceived an increase in masculine traits from the past to the present,  $p < .000$ , but they perceived these traits to remain stable from the present to the future,  $p = .69$ .

As implied by our Hypothesis 1, the Target Group  $\times$  Year interaction was significant,  $F(4, 151) = 5.48, p < .001, \eta^2 = .13$ . Simple effect analyses within levels of year revealed a significant effect of target group for the past,  $F(2, 151) = 23.22, p < .001, \eta^2 = .24$ , and the

present,  $F(2, 151) = 14.07, p < .001, \eta^2 = .16$ . As expected, for the past and present, men and leaders did not differ significantly in masculine traits,  $ps > .13$ , and both groups were perceived as higher in masculine traits than women,  $ps < .001$ . Moreover, as expected, there was no significant effect of year for the future,  $F(2, 151) = 2.26, p = .11, \eta^2 = .03$ ; thus, for the future, leaders, men and women did not differ significantly in masculine traits. Overall, these findings confirmed Hypothesis 1 as leaders and men did not differ significantly in masculine traits over time (which indicated stability of the perceived congruity between men and leaders); also as expected leaders were perceived as higher in masculine traits than women in the past and the present but leaders did not differ significantly from women in the future (which indicates a decrease in the perceived incongruity between women and leaders).

In order to examine how changes in the stereotypes of women and leaders contribute to the observed convergence in traits of women and leaders outlined above we also carried out simple effect analyses within levels of stimulus group. The analyses revealed effects of year for all three groups, with women experiencing the largest increase in masculine traits; for men:  $F(2, 151) = 3.80, p = .025, \eta^2 = .05$ , for leaders:  $F(2, 151) = 4.46, p = .013, \eta^2 = .06$ , and for women:  $F(2, 151) = 27.53, p < .001, \eta^2 = .27$ . Women were perceived to increase significantly in masculine traits from the past to the present to the future,  $p < .001$ , and  $p = .0025$ , respectively. Thus, as expected, the stereotype of women was particularly dynamic in the form of an increase in masculine traits typically associated with leaders. Men and leaders were perceived to increase in masculine traits from the past to the present,  $p < .004$  and  $p < .001$ , respectively, but to remain stable in these traits from the present to the future,  $p = .14$  and  $p = .34$ . Thus, as expected, the stereotypes of men and leaders were relatively stable over time. In summary, women and leaders were perceived to converge in masculine traits as women were perceived to increase in masculine traits over time.

*Feminine traits.* The main effect for target group was significant,  $F(2, 151) = 26.97, p < .001, \eta^2 = .26$ : Women were ascribed more typically feminine traits than leaders and men,  $ps < .001$ ; leaders were ascribed more feminine traits than men,  $p = .0025$ .

This main effect was not qualified by a significant Target Group  $\times$  Year interaction,  $F(4, 151) = 0.86, p = .49$ , thereby disconfirming Hypothesis 1. In contrast to our prediction, women and leaders were not perceived to converge in feminine traits over time as neither leaders nor women were perceived to change in these traits over time.

#### *Perceived Role Non-Traditionalism*

Our logic implies that an increase of women in formerly male-dominated roles should lead perceivers to infer that women's masculine qualities have increased accordingly so that women can function in such roles (including leader roles). Thus to explore the idea that people's beliefs about women and leaders converge if women's roles are perceived to change (see Hypothesis 2a), we present participants' estimates of women in traditionally male-dominated occupations. The main effect of year was significant,  $F(2, 157) = 130.17, p < .001, \eta^2 = .62$ . Participants perceived the percentage of women in traditionally male-dominated occupations to increase from the past ( $M = 9.22$ ) to the present ( $M = 24.03$ ) and from the present to the future ( $M = 33.68$ ),  $ps < .001$ .

#### *Perceived Importance of Leadership Traits*

According to our logic, if person-oriented leadership traits increased in their importance for good leadership in comparison to task-oriented leadership traits over time, perceivers should infer that leaders' feminine traits have increased accordingly so that leaders can display effective leadership behaviors; hereby perceivers' beliefs about women and leaders should converge (see Hypothesis 2b). To demonstrate that change in leadership qualities were more pronounced for the person-oriented leadership traits than for task-oriented leadership traits, we ran a 3 (year)  $\times$  2 (scale) mixed ANOVA with repeated

measures on the last factor (Scale: task-orientation vs. person-orientation). A significant Year  $\times$  Scale interaction should indicate greater change in importance ratings for the person-oriented leadership traits than for the task-oriented leadership traits. The results of the ANOVA revealed the expected Year  $\times$  Scale interaction,  $F(2, 156) = 29.26, p < .001, \eta^2 = .27$ . For task-oriented leadership traits, the effect of year was significant,  $F(2, 156) = 24.04, p < .001, \eta^2 = .24$ . Participants perceived task-oriented traits as increasing in importance for managerial roles from the past to the present ( $M = 5.26$  vs.  $M = 5.95$ ),  $p < .001$ , and to be of equal importance in the present and the future ( $M = 5.95$  vs.  $M = 5.94$ ),  $p = .50$ . For person-oriented leadership traits, the effect of year was also significant and larger than the effect of year for the task-oriented leadership traits,  $F(2, 156) = 57.33, p < .001, \eta^2 = .42$ . Participants perceived person-oriented traits to increase significantly in importance for managerial roles from the past to the present ( $M = 4.15$  vs.  $M = 5.65$ ),  $p < .001$ , and to be of equal importance in the present and the future ( $M = 5.65$  vs.  $M = 5.84$ ),  $p = .13$ .

#### *Mediation of the Effects of Year on Gender-Stereotypical Traits*

Following the procedure by Baron and Kenny (1986), we used multiple regression to test a simple mediational model for female targets that assumed that projected changes in women's roles accounted for the relation between the context year and beliefs about masculine traits in women (see Hypothesis 2a). For female targets the results suggested that projections about women's roles mediated the effect of year on masculine traits ascribed to women (see Figure 1). Specifically, for female targets, we found that year (-1 = past, 0 = present, 1 = future) predicted judgments of masculine traits in women, ( $\beta = .68$ ),  $t(51) = 6.55, p < .001$ . Second, year predicted role nontraditionalism, ( $\beta = .75$ ),  $t(51) = 8.13, p < .001$ . Third, when role nontraditionalism was added as a predictor to the last equation, we found that, controlling for year, the indirect path was no longer highly significant, ( $\beta = .40$ ),  $t(50) = 2.67, p = .010$ , and that role nontraditionalism predicted judgments of masculine traits in



women, ( $\beta = .37$ ),  $t(50) = 2.48$ ,  $p = .017$ . Fourth, according to Sobel's test, role nontraditionalism mediated the relationship between year and masculine traits as indicated in the significant decline in the direct path between year and masculine traits, ( $Z = 2.37$ ,  $p = .018$ ).

For the other model assessing the relation between context year and beliefs about feminine traits in leaders (see Hypothesis 2b), the relevant path from context year to feminine traits was nonsignificant and thus failed to meet the first criterion for mediation (see step 1, Baron & Kenny, 1986).

### Discussion

Experiment 1 confirmed our hypotheses that the perceived incongruity between the leader stereotype and the female stereotype is a dynamic phenomenon and more importantly, provides first insight into which of the two explanations – that is, perceived change in women's roles and/or perceived change in models of good leadership - may account for this dynamic. Specifically, the experiment demonstrated perceptions of an increase of women in formerly male-dominated roles which corresponded with a convergence in the perceived traits of women and leaders.

For masculine traits, the results indicated that participants projected women to significantly increase in masculine traits over time. Consequently, the perceived incongruity between women and leaders (i.e. greater ascription of masculine traits to leaders than women) was reduced over time, and even eliminated in participants' future projections of both groups, whereas the perceived congruity between men and leaders in relation to masculine traits remained stable over time (see Hypothesis 1).

Most importantly, the mediational analysis supported the assumption that perceived change in women's roles mediated the impact of context year on beliefs about masculine traits in women (see Hypothesis 2a).

Surprisingly, participants projected both leaders and men to increase in masculine traits from the past to the present but to retain these traits from the present to the future. This unexpected increase of masculine personality traits in leaders and men (and not only in women) from the past to the present might reflect the changing organizational environment, marked by new technology, increased competition and performance-orientation (for changing conditions of work, see Cooper & Burke, 2002; for an increase in Latin-American men's agency over time due to a cultural shift, see Diekmann, Eagly, Mladinic, & Ferreira, 2005).

For feminine traits, the results indicated that in contrast to our prediction (see Hypothesis 1), neither leaders nor men were perceived to change in feminine traits in a direction of more congruity with beliefs about the traits of women. Despite participant's projections that task-oriented traits and in particular person-oriented traits would become more important for leadership roles, participant's ascriptions of feminine traits to leaders remained stable. Although the projected change in leadership demands in this study reflects management experts' emphasis on a more androgynous blend of attributes – that is relevance of both task-oriented *and* person-oriented traits - (e.g., Fondas, 1997; Rastetter, 2001; see also Judge, Bono, Ilies, & Gerhardt, 2002), these projections are prescriptive norms, that is, beliefs about what characteristics leaders ought to have. These prescriptive beliefs about the importance of person-oriented traits for good leadership might not yet be reflected in participants' descriptive beliefs about leaders and men, that is, beliefs about what characteristics they possess (for the distinction between these types of norms, see Burgess & Borgida, 1999; Fiske & Stevens, 1993; Prentice & Carranza, 2002). Following social role theory, in time people's observations of person-oriented behaviors by leaders and men in their occupational roles should be reflected in greater ascription of typically feminine traits to these groups (for the social role theory, see Eagly et al., 2000; for group impression formation and change, see Kashima, Woolcock, & Kashima, 2000). This might be the reason why we

did not find evidence showing that change in leadership demands mediated the effect of year on feminine traits ascribed to leaders in the present study (see Hypothesis 2b).

Since women's stability in feminine traits corresponded with actual stability in women's communally demanding roles (e.g., Cejka & Eagly, 1999; Koenig & Eagly, 2010) and their primary responsibility in the household (e.g., Bianchi, Robinson, & Milkie, 2006) it is advisable to also assess change in formerly female-dominated occupations in future studies.

In summary, the findings of Experiment 1 indicated that the perceived incongruity between leaders and women was dynamic. Specifically, the findings showed that the stereotype of women was more dynamic than the stereotype of men and leaders. Moreover, the findings demonstrated that perceived change in women's occupational roles mediated the effect of year on perceived change in beliefs about women in a direction of greater convergence with beliefs about leaders.

## Experiment 2

Although Experiment 1 has provided considerable evidence that the perceived incongruity between leaders and women is dynamic due to perceived change in women's roles, which fosters perceptions of change in women's masculine traits, this demonstration has relied solely on individual projections of change. To address this methodological issue, Experiment 2 was designed to provide a more stringent demonstration that projected changes in men's and women's roles underlie projected changes in ascribed personality traits. Specifically, Experiment 2 manipulated the distribution of women and men into gender-typical roles in people's mind when making trait judgments of women, men, and leaders and thereby did not invite people's individual projections. We expected to find further evidence that the perceived incongruity between the leader stereotype and the female stereotype is dynamic. Consistent with Experiment 1, women were expected to increase significantly in

masculine traits as the role distribution became more equal and men were expected to show at least a small increase in feminine traits as the role distribution shifted toward equality from the past to the present to the future. Thus, in participants' mind, the incongruity in beliefs about women and leaders should diminish as the role distribution shifts to equality due to a projected increase in women's masculine traits; in contrast, the congruity in beliefs about men and leaders should remain relatively stable, regardless of the respective role distribution.

## Method

### *Participants and Procedure*

Two female surveyors, following the survey procedure described for Experiment 1, recruited a total of 196 participants (106 men, 90 women) from the University of Bern in Switzerland. The participants ranged in age from 19 to 48 with a mean of 23.5 years ( $SD = 4.24$ ). The majority of the participants (90.3%) studied business management, and the remaining participants (9.7%) were students of related subjects such as economics and business engineering. On average, the participants had already studied for 5.6 semesters. Most of the participants possessed prior work experience, with 59.7% having finished professional training (e.g., as a banker), and 99.5% having made internships in companies.

### *Independent Variables*

In a 3 (target group)  $\times$  3 (role distribution) between-subjects design, participants were asked to imagine a future society in which men and women occupied certain kinds of roles. The role distribution was described in one of three ways: traditional roles, roles similar to those of today, and equal roles. For example, instructions for the same-as-today condition read as follows:

“Imagine that it is the year 2050. Please assume that women occupy basically the same occupational and family roles as they do now. For example, very few auto

mechanics and lawyers are women, and most secretaries or homemakers are women.

Moreover, very few leadership positions are occupied by women.”

In the traditional condition, the role distribution was described as being much more gender-segregated (e.g., “extremely few auto mechanics and lawyers are women... almost all secretaries and homemakers are women... extremely few leadership positions are occupied by women”). In the equal condition, women and men were portrayed as occupying similar roles in society (e.g., “half of auto mechanics and lawyers are women... only half of secretaries and homemakers are women... half of leadership positions are occupied by women”). For the conditions in which participants evaluated the average woman, the adjectives modifying the roles were switched to convey the designated role distribution (e.g., “most auto mechanics and lawyers are men... very few secretaries and homemakers are men... most leadership roles are occupied by men”; “half of auto mechanics and lawyers are men... only half of secretaries and homemakers are men... half of leadership positions are occupied by men”). For the conditions in which participants evaluated the average leader, the same descriptions of the role distribution as either traditional, same-as-today, or equal were used and the gender of the target persons (men, women) was counterbalanced.

### *Measuring Instruments*

*Participant demographics.* At the end of the questionnaire, participants reported their gender, age, study major, and study semester, and they provided information regarding prior work experience and their background (German-, French-, vs. Italian-speaking part in Switzerland).

*Gender-stereotypical traits.* Participants completed the same instrument as in Experiment 1. Specifically, they indicated the likelihood that the targets would possess each of 7 masculine traits and 7 feminine traits on a 7-point scale ranging from *not at all likely* to

very likely. The two resulting scales had satisfactory alphas: .90 for the masculine traits and .85 for the feminine traits.

## Results

### *Gender-Stereotypical Traits*

The critical analyses were 3 (Target Group)  $\times$  3 (Role Distribution) ANOVAs. The means and standard deviations appear in Table 2.

*Masculine traits.* The main effect for target group was significant,  $F(2, 187) = 23.46$ ,  $p < .001$ ,  $\eta^2 = .20$ : Women were ascribed less typically masculine traits than leaders and men,  $p < .001$ , whereas leaders and men were judged similarly,  $p = .12$ .

This effect was qualified by a Target Group  $\times$  Role Distribution interaction,  $F(4, 187) = 11.34$ ,  $p < .001$ ,  $\eta^2 = .20$ . Simple effect analyses within levels of target group revealed an effect of role distribution for the group of women,  $F(2, 187) = 22.29$ ,  $p < .001$ ,  $\eta^2 = .19$ . Women were perceived to increase significantly in masculine traits when the role distribution shifted from traditional to same-as-today,  $p < .001$ , and to increase only slightly in these traits when the role distribution shifted from same-as-today to equal,  $p = .09$ . Men and leaders were perceived to remain stable in these traits, regardless of role distribution,  $F(2, 187) = 1.49$ ,  $p = .23$ ,  $\eta^2 = .02$ , and  $F(2, 187) = 1.60$ ,  $p = .21$ ,  $\eta^2 = .02$ , respectively. Confirming our expectations, women were projected to increase in masculine traits as the role distribution became more equal whereas men and leaders were projected to retain their masculine traits, regardless of the role distribution.

As implied by our prediction of convergence in the perceived masculine traits of women and leaders, simple effect analyses within levels of role distribution revealed an effect of Target Group for the traditional condition  $F(2, 187) = 41.78$ ,  $p < .001$ ,  $\eta^2 = .31$ , and the same-as-today condition,  $F(2, 187) = 4.33$ ,  $p = .015$ ,  $\eta^2 = .04$ . For the traditional and the same-as-today conditions, men and leaders were perceived similarly in masculine traits,  $p =$

.10 and  $p = .83$ , respectively, and both groups were perceived as higher in masculine traits than women,  $ps < .001$  and  $ps < .03$ . For the equal condition there was no effect of Target Group,  $F(2, 187) = .93$ ,  $p = .40$ ,  $\eta^2 = .01$ ; men, women, and leaders were perceived similarly in masculine traits,  $ps > .17$ . Confirming our expectations, the discrepancy in ascriptions of masculine traits to women and leaders diminished as the role distribution shifted toward equality, whereas men and leaders were not perceived to differ, regardless of the respective role distribution.

*Feminine traits.* The main effect for target group was significant,  $F(2, 187) = 32.13$ ,  $p < .001$ ,  $\eta^2 = .26$ : Women were ascribed more typically feminine traits than leaders and men,  $ps < .001$ , and leaders and men were judged similarly in typically feminine traits,  $p = .21$ .

The Target Group  $\times$  Role Distribution interaction was not significant,  $F(4, 187) = 1.27$ ,  $p = .28$ ,  $\eta^2 = .03$ ; the pattern of means showed that participants perceived men to remain stable in feminine traits when the role distribution shifted from traditional to same-as-today,  $p = .61$ , but they perceived men to increase in feminine traits when the role distribution shifted from same-as-today to equal,  $p = .02$ . Leaders were perceived as relatively unchanging in typically feminine traits ( $ps > .32$ ), regardless of the role distribution.

Comparisons within levels of role distribution showed that participants perceived men and leaders as not differing in feminine traits ( $ps > .19$ ) and participants perceived both groups as lower in feminine traits than women,  $ps < .023$ .

In summary, confirming our expectations, men and leaders were not perceived to differ in feminine traits, whereas the discrepancy in feminine traits of women and leaders remained, regardless of role distribution; men only showed a small increase in feminine traits as the role distribution shifted toward equality.

## Discussion

Consistent with Experiment 1, participants' ratings supported the idea that the perceived incongruity between the leader stereotype and the female stereotype is a dynamic phenomenon. While Experiment 1 allowed participants to make their own assumptions about the proportion of men and women in roles, the present experiment manipulated the distribution of men and women into roles. The findings of this experiment provide additional support for the assumption that the convergence of people's beliefs about women and leaders stems from the association of male-dominated occupations with typically masculine traits and the movement of women into these occupations. In line with Experiment 1, the strongest effect was women's adoption of masculine traits as the role distribution manipulation shifted toward equality. Women's increase in masculine traits contributed substantially to the convergence of people's beliefs about masculine traits in women and leaders. Whereas participants judged leaders as possessing more masculine traits than women in the traditional condition and in the same-as-today condition, they judged leaders and women as similar in typically masculine traits in the equal condition.

Compared with the manipulation of year in Experiment 1, the role distribution manipulation in Experiment 2 produced more extreme findings, particularly for men's increase in feminine traits. Specifically, men were judged to remain stable in feminine traits when the role distribution shifted from traditional to same-as-today, but they were ascribed more feminine traits when the role distribution became equal. This finding probably occurred because, compared with the future condition of Experiment 1, the condition with an equal division of labor among men and women was manipulated in a way that it was perceived as more nontraditional than participants' self-generated ideas about the role distribution in the future condition. Nevertheless, despite this perception of a small increase in feminine traits of men in Experiment 2, participants judged men and leaders as similar in feminine traits but as lower in these traits than women. Thus, people's congruent views about men's and leaders'



characteristics remained stable across the role distribution manipulations; similarly, in Experiment 1, beliefs about men and leaders remained congruent across the time manipulations.

Finally, participants' perceptions of leaders' feminine and masculine personality traits were not influenced by the manipulation of the role distribution. This finding suggests that other factors such as the definition of leadership and its role requirements in masculine or feminine terms might alter people's perceptions of leaders (see Eagly & Karau, 2002). For example, perceivers' ideas about leaders' attributes might change as a function of exposure to different management trends in a society (i.e., a greater emphasis on person-oriented leadership skills relative to task-oriented leadership skills for good leadership should correspond with a perceived increase in feminine traits in leaders).

#### General Discussion

The aim of the present research was to investigate whether perceptions of incongruity in beliefs about leaders and women is a malleable phenomenon. Do perceivers believe that the perceived characteristics of leaders and women will converge over time and if so, do they believe that a change in leader roles and/or women's roles underlies this convergence? Our findings from both experiments showed that the incongruity dilemma for women was a malleable phenomenon. The incongruity of views about women and leaders was found to be dynamic, whereas the congruity of views about men and leaders was observed to be relatively stable.

Following Eagly and Karau (2002), a decrease in the perceived incongruity between people's views about women and their views about leaders could either follow from a masculine change in the female stereotype and/or from a feminine change in leadership roles. The results of our experiments provided support for the change in the stereotype about women as underlying the convergence in women's and leaders' traits. Specifically,

Experiment 1 has demonstrated a projected increase in typically masculine traits of women over a period of 100 years. The mediational analysis supports the social role theory assumption that this increase in typically masculine traits of women corresponded to participants' projected change in women's roles that is women's entry into traditionally male-dominated occupations. Moreover, Experiment 2, which included role manipulations, provided additional support for the assumption that the convergence of people's beliefs about women and leaders reflects the association of male-dominated occupations with typically masculine personality traits and the movement of women into these occupations.

In contrast, the results of our experiments did not provide support for the change in the leadership role as underlying the convergence in women's and leaders' traits. Specifically, for feminine personality traits, Experiment 1 demonstrated that leaders and men remained low in feminine traits compared to women's high level of feminine traits over time, although the importance of person-oriented traits for leadership roles was projected to increase significantly over time. The perceived change in person-oriented leadership traits thus did not mediate people's inferences about the traits of leaders. Experiment 2 indicated a small increase in typically feminine traits of men as the role distribution shifted toward equality; however, people's similar ideas about leaders' and men's feminine traits remained stable across the role distribution conditions. For masculine traits, both experiments have provided support for people's similar views of leaders and men who have been judged as relatively unchanging over time.

On a more general level, the present research bears important implications for theoretical issues on managerial gender-stereotyping as well as the applied context: Although a range of studies has investigated the discrepancy of views about leaders and women and has recently noted changes in people's beliefs about leaders (for an overview, see Koenig et al., 2010; Schein, 2001), these experiments are the first to show that this phenomenon

incorporates dynamic aspects in people's mind. Specifically, we have demonstrated that both people's stereotypes about leaders *and* women are dynamic as they incorporate ideas about changing characteristics and that the groups' characteristics are changing in a direction that reduces the discrepancy of views about leaders and women. Moreover, our experiments provide an important demonstration into why people should think that the discrepancy of leaders' and women's traits is eroding. Specifically, our results suggest that people's beliefs about a change in the discrepancy of views about leaders and women follow from perceived change in women's roles. These findings support the more general idea that people act as implicit role theorists who believe that change in personal characteristics follows from change in roles (see Diekmann & Eagly, 2000).

Moreover, despite the range of research that shows how gender stereotypes function to preserve the gender gap in leadership, the present findings suggest that people's belief about women's gain in masculine, leadership-relevant traits might actually undermine the status quo. The perceptions of change in women's roles and characteristics over time can thus have important implications for the group's future possibilities, particularly if there is widespread consensus about the change. If individuals expect women and leaders to converge in relevant traits in the future, those expectations might themselves help to create that reality. For example, people's implicit gender associations have been shown to become less stereotypic even if they only briefly imagined women of the future, as compared to women of the past or a control condition (Diekmann, Johnston, & Loescher, 2010). Similarly, individuals might behave in a way confirming their self-view in the future. The assumptions prompt intriguing research questions for future research.

The outlined implications of a dynamic construal of leadership are also important from an applied perspective. Organizational decisions can only be as good as the accuracy of the information that goes into making them. As stereotypes and cognitive representations are

often inaccurate, they can have detrimental effects on the kinds of judgments people make in organizations. For example, if a human resources officer holds the stereotype that women possess less masculine personality qualities than men or that leadership is manly business, then he or she purposely may avoid hiring or promoting individual women for leadership positions. Similarly, self-stereotyping and self-selection processes may lead women to refrain from leadership positions. If these individuals in question had been a good hire, the company would have suffered a loss of skilled and professional personnel in the process of recruiting as a critical competence. However, to the extent that the future is an activated state, individuals might react to others on the basis of the future stereotype rather than the present-day stereotype. Beliefs that women are entering formerly male-dominated roles and thus gain typically masculine traits, considered as essential for leadership roles, might increase their access to leadership roles and training opportunities. In addition, these beliefs might influence women's own views about future possibilities in the workplace and particularly leadership roles.

Although the present experiments have provided considerable evidence that the perceived incongruity between leaders and women is a dynamic phenomenon due to perceived change in women's roles and thus perceived change in masculine traits of women, our research is limited in the following ways. First, these experiments used graduate management students as subjects, which may limit the generalizability of the findings. Despite similar findings with student samples and managers in previous research (see Schein, 2001), differences in age and experience of students and managers remain. Thus future replications with manager samples will increase the generalizability of the findings. In addition to correlational and experimental evidence for the masculine construal of leadership, its dynamic aspects and its underlying mechanisms, longitudinal research is needed. Such research could determine changes in people's actual beliefs about women, men, and leaders

over time, as well as the influence of mechanisms that might mediate these changes in people's belief systems over time. Such longitudinal studies would allow assessing whether perceivers have an accurate theory of change in women, men, and leaders (for men's and women's self-reports of typically masculine and typically feminine traits over time, see Twenge, 1997).

### Conclusion

Our findings concerning stereotypes about women, men, and leaders of the past, present, and future are consistent with the assumption that the perceived incongruity of views about leaders and women is malleable. Specifically, our research demonstrated the dynamics of this phenomenon by showing perceptions of a role change among women and a corresponding convergence in the traits of women and leaders over 100 years. This projected convergence was primarily accounted for by an increasing ascription of masculine traits to women. Time will tell if the gender gap in leadership will erode and what mechanisms will contribute to this change. Nevertheless, people's beliefs about change in women's roles and characteristics might increase acceptance of female leaders and thus accelerate the pace of social change.

## References

- Abele, A., & Wojciszke, B. (2007). Agency and communion from the perspective of self versus others. *Journal of Personality and Social Psychology, 93*(5), 751-763.
- Atwater, L. E., Brett, J. F., Waldman, D., DiMare, L., & Hayden, M. V. (2004). Men's and women's perceptions of the gender typing of management subroles. *Sex Roles, 50*(3-4), 191-199.
- Avolio, B. J. (1999). *Full leadership development: Building the vital forces in organizations*. Thousand Oaks, CA: Sage.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.
- Bass, B. M. (1998). *Transformational leadership: Industrial, military, and educational impact*. Mahwah, NJ: Erlbaum.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*(2), 155-162.
- Bianchi, S. M. (2000). Maternal employment and time with children: Dramatic change or surprising continuity? *Demography, 37*, 401-414.
- Bianchi, S. M., Robinson, J. P., and Milkie, M. A. (2006). *Changing rhythms of American family life*. New York: Russell Sage Foundation.
- Broadbridge, A., & Hearn, J. (2008). Gender and management: New directions in research and continuing patterns in practice. *British Journal of Management, 19*(1), 38-49.
- Burgess, D., & Borgida, E. (1999). Who women are, who women should be: Descriptive and prescriptive gender stereotyping in sex discrimination. *Psychology, Public Policy, and Law, 5*(3), 665-692.

- Catalyst. (2008). *Catalyst 2008 Census of the Fortune 500 Reveals Women Gained Little Ground Advancing to Business Leadership Positions*. Retrieved June, 10, 2009, from <http://www.catalyst.org/press-release/141/catalyst-2008-census-of-the-fortune-500-reveals-women-gained-little-ground-advancing-to-business-leadership-positions>
- Cejka, M. A., & Eagly, A. H. (1999). Gender-stereotypic images of occupations correspond to the sex segregation of employment. *Personality and Social Psychology Bulletin*, 25(4), 413-423.
- Charles, M. (2005). *Entwicklung der beruflichen Segregation nach Geschlecht und nach Staatsangehörigkeit in der Schweiz, 1970–2000*. Neuchâtel: Bundesamt für Statistik.
- Cooper, C. L., & Burke, R. J. (2002). *The new world of work*. London, UK: Routledge.
- Diekmann, A. B., & Eagly, A. H. (2000). Stereotypes as dynamic constructs: Women and men of the past, present, and future. *Personality and Social Psychology Bulletin*, 26(10), 1171-1181.
- Diekmann, A. B., Eagly, A. H., Mladinic, A., & Ferreira, M. C. (2005). Dynamic stereotypes about women and men in Latin America and the United States. *Journal of Cross-Cultural Psychology*, 36(2), 209-226.
- Diekmann, A. B., Johnston, A. M., & Loescher, A. L. (2010). *Something old, something new: Preferences for traditional and nontraditional roles under social change*. Manuscript under revision.
- Dodge, K.A., Gilroy, F.D., & Fenzel, L.M. (1995). Requisite management characteristics revisited: Two decades later. *Journal of Social Behavior and Personality*, 10(6), 253-264.
- Eagly, A. H., & Carli, L. L. (2007). *Through the labyrinth: The truth about how women become leaders*. Boston: Harvard Business School Press.

- Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, *109*(3), 573-598.
- Eagly, A. H., & Kite, M. E. (1987). Are stereotypes of nationalities applied to both women and men? *Journal of Personality and Social Psychology*, *53*(3), 451-462.
- Eagly, A. H., & Sczesny, S. (2009). Stereotypes about woman, men, and leaders: have times changed? In M. Barreto, M. Ryan, & M. Schmitt (Eds.), *Barriers to diversity: The glass ceiling 20 years on* (pp. 21-47). Washington, DC: APA Books.
- Eagly, A. H., Wood, W., & Diekmann, A. B. (2000). Social role theory of sex differences and similarities: A current appraisal. In T. Eckes & H. M. Trautner (Eds.), *The developmental social psychology of gender* (pp. 123-174). Mahwah, NJ: Erlbaum.
- England, P. (2003). *Toward gender equality: Progress and bottlenecks*. Retrieved September, 14, 2010, from <http://www.northwestern.edu/ipr/publications/papers/2003/WP-03-13.pdf>.
- European Commission. (2009). *Largest quoted companies*. Retrieved December 18, 2009 from <http://ec.europa.eu/social/main.jsp?catId=777&langId=en&intPageId=675>.
- Eurostat (2010). *Employment rate by gender - females*. Retrieved January, 16, 2010 from <http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do;jsessionid=9ea7971b30dfb1b95d9c073449fda15cb3ef8db93a50.e34RaNaLaN0Mc40LcheTaxiLbxuPe0?tab=table&plugin=1&pcode=tsiem010&language=en>
- Fiske, S. T., & Stevens, L. E. (1993). What's so special about sex? Gender stereotyping and discrimination. In S. Oskamp & M. Costanzo (Eds.), *Gender issues in contemporary society: Claremont symposium on applied social psychology* (Vol. 6, pp. 173-196). Newbury Park, CA: Sage.
- Fondas, N. (1997). Feminization unveiled: Management qualities in contemporary writings. *Academy of Management Review*, *22*(1), 257-282.



- Gergen, D. (2005). Women leading in the twenty-first century. In L. Coughlin, E. Wingard, & K. Hollihan (Ed.), *Enlightened power: How women are transforming the practice of leadership* (pp. xv-xxix). San Francisco: Jossey-Bass.
- Hackman, M. Z., Furniss, A. H., Hills, M. J., & Paterson, T. J. (1992). Perceptions of gender-role characteristics and transformational and transactional leadership behaviours. *Perceptual and Motor Skills*, 75, 311-319.
- Heilman, M. E. (2001). Description and prescription: How gender stereotypes prevent women's ascent up the organizational ladder. *Journal of Social Issues*, 57(4), 657-674.
- Heilman, M. E., & Okimoto, T. G. (2007). Why are women penalized for success at male tasks? The implied communality deficit. *Journal of Applied Psychology*, 92(1), 81-92.
- Judge, T. A., J. E. Bono, R. Ilies, & M. W. Gerhardt (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*, 87, 765-780.
- Kashima, Y., Woolcock, J., & Kashima, E. S. (2000). Group impressions as dynamic configurations: The tensor product model of group impression formation and change. *Psychological Review*, 107(4), 914-942.
- Katz, D., & Braly, K. (1933). Racial stereotypes of one hundred college students. *Journal of Abnormal and Social Psychology*, 28, 280-290.
- Koenig, A. M., & Eagly, A. H. (2010). *How observations of groups' social roles shape stereotypes of their communion, competence, and agency*. Unpublished Manuscript.
- Koenig, A. M., Eagly, A. H., Mitchell, A. A., & Ristikari, T. I. (2010). *Are leader stereotypes masculine? A meta-analysis of three research paradigms*. Manuscript under review.
- Lipman-Blumen, J. (2000). *Connective leadership: Managing in a changing world*. New York: Oxford University Press.

- McCauley, C. D. (2004). Successful and unsuccessful leadership. In J. Antonakis, A. T. Cianciolo, & R. J. Sternberg, *The nature of leadership* (pp. 199-221). Thousand Oaks, CA: Sage.
- Prentice, D. A., & Carranza, E. (2002). What women and men should be, shouldn't be, are allowed to be, and don't have to be: The contents of prescriptive gender stereotypes. *Psychology of Women Quarterly*, 26(4), 269-281.
- Rastetter, D. (2001). Frauen – die besseren Führungskräfte? „Soft Skills“ als neue Anforderungen im Management. *Journal für Psychologie*, 5(2), 43-55.
- Schein, V.E. (1973). The relationship between sex role stereotypes and requisite management characteristics. *Journal of Applied Psychology*, 57(1), 95-100.
- Schein, V. E. (2001). A global look at psychological barriers to women's progress in management. *Journal of Social Issues*, 57(4), 675-688.
- Schein, V.E., Mueller, R., & Jacobson, C. (1989). The relationship between sex role stereotypes and requisite management characteristics among college students. *Sex Roles*, 20(1-2), 103-110.
- Sczesny, S. (2003a). A closer look beneath the surface: Various facets of the think-manager-think-male stereotype. *Sex Roles*, 49(7-8), 353-363.
- Sczesny, S. (2003b). Führungskompetenz: Selbst- und Fremdwahrnehmung weiblicher und männlicher Führungskräfte. *Zeitschrift für Sozialpsychologie*, 34, 133-145.
- Sczesny, S., Bosak, J., Diekmann, A., & Twenge, J. (2007). Dynamics of Sex Role Stereotypes. In Y. Kashima, K. Fiedler, & P. Freytag (Eds.), *Stereotype Dynamics: Language-Based Approaches to the Formation, Maintenance, and Transformation of Stereotypes* (pp. 137-163). Mahwah, NJ: Lawrence Erlbaum.
- Sczesny, S., Bosak, J., Neff, D., & Schyns, B. (2004). Gender stereotypes and the attribution of leadership traits: A cross-cultural comparison. *Sex Roles*, 51(11-12), 631-645.

- Suitner, C., & Maass, A. (2008). The role of valence in the perception of agency and communion. *European Journal of Social Psychology*, *38*(7), 1073-1082.
- Swissinfo (2009). *Breaking through the corporate glass ceiling*. Retrieved December 18, 2009, from [http://www.swissinfo.ch/eng/index/Breaking\\_through\\_the\\_corporate\\_glass\\_ceiling.html?cid=5183350](http://www.swissinfo.ch/eng/index/Breaking_through_the_corporate_glass_ceiling.html?cid=5183350).
- Twenge, J. M. (1997). Changes in masculine and feminine traits over time: A meta-analysis. *Sex Roles*, *36*(5-6), 305-325.
- Twenge, J. M. (2001). Changes in women's assertiveness in response to status and roles: A cross-temporal meta-analysis, 1931-1993. *Journal of Personality and Social Psychology*, *81*(1), 133-145.
- United Nations Development Programme. (2009a). *Human development report 2009*. Retrieved February, 16, 2010, from [http://hdr.undp.org/en/media/HDR\\_2009\\_EN\\_Complete.pdf](http://hdr.undp.org/en/media/HDR_2009_EN_Complete.pdf)
- United Nations Development Programme. (2009b). *Human Development Report 2009. Gender empowerment measure and its components*. Retrieved February, 16, 2010, from [http://www.undp.org.tr/publicationsDocuments/Table\\_K\\_from\\_HDR\\_2009\\_EN\\_Gender%20Empowerment%20Measure.pdf](http://www.undp.org.tr/publicationsDocuments/Table_K_from_HDR_2009_EN_Gender%20Empowerment%20Measure.pdf).
- U. S. Bureau of Labor Statistics. (2009). *Employment status of the civilian noninstitutional population 16 years and over by sex, 1970-2006 annual averages*. Retrieved August 06, 2009 from <http://www.bls.gov/cps/wlf-table2-2007.pdf>
- Wilde, A., & Diekmann, A.B. (2005). Cross-cultural similarities and differences in dynamic stereotypes: A comparison between Germany and the United States. *Psychology of Women Quarterly*, *29*(2), 188-196.

Williams, J. E., & Best, D. L. (1990). *Measuring sex stereotypes. A multination study.*

Newbury Park, CA: Sage.

Wood, W., & Eagly, A. H. (2010). Gender. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.),

*Handbook of social psychology* (5<sup>th</sup> ed., Vol. 2, pp. 629-667). New York: Wiley.

Table 1

*Experiment 1: Means (Standard Deviations) on Gender-Stereotypical Traits by Target Group and Year*

	Stimulus Group			
	Men	Women	Leaders	Total
	Feminine Traits			
Past	4.31 (.87)	5.34 (1.18)	4.88 (.76)	4.83 (1.01)
Present	3.90 (.57)	5.42 (1.02)	4.62 (.78)	4.65 (1.02)
Future	4.35 (.94)	5.55 (.88)	4.52 (.87)	4.81 (1.03)
Total	4.19 (.82)	5.44 (1.01)	4.67 (.81)	4.76 (1.02)
	Masculine Traits			
Past	4.77 (.83)	3.45 (.79)	5.08 (.75)	4.46 (1.05)
Present	5.45 (.58)	4.49 (.94)	5.76 (.49)	5.21 (.88)
Future	5.19 (.78)	5.29 (.76)	5.67 (.58)	5.38 (.73)
Total	5.15 (.78)	4.46 (1.11)	5.50 (.68)	5.04 (.97)

*Note.* Ratings were on a 7-point scale, with higher numbers indicating greater feminine traits or masculine traits. Cell *ns* ranged from 17 to 19 participants.

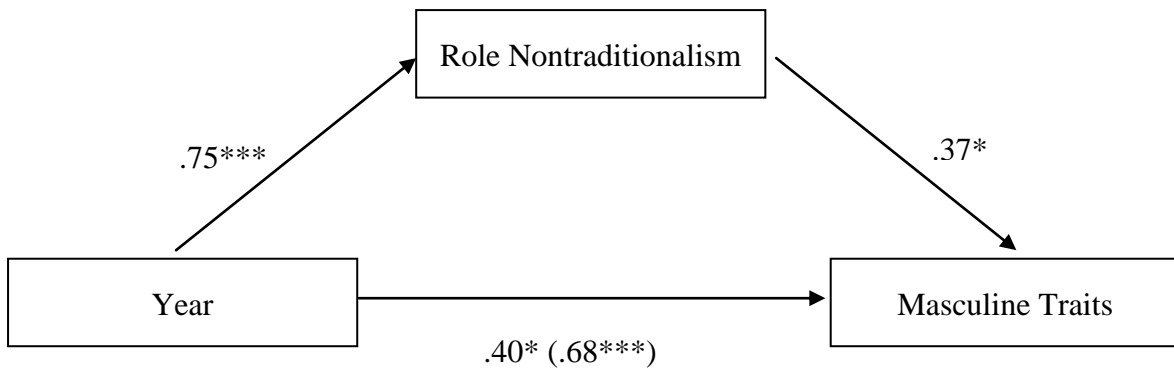


Figure 1. Experiment 1: Path diagram with standardized regression coefficients for female targets.

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

Table 2

*Experiment 2: Means (Standard Deviations) on Gender-Stereotypical Traits by*

*Target Group and Role Distribution*

	Stimulus Group			
	Men	Women	Leaders	Total
	Feminine Traits			
Traditional	4.14 (.65)	5.34 (.71)	4.45 (.96)	4.64 (.92)
Same-as-today	4.25 (.80)	5.70 (.66)	4.49 (.98)	4.79 (1.03)
Equal	4.74 (.63)	5.42 (1.02)	4.75 (1.05)	4.97 (.97)
Total	4.36 (.73)	5.49 (.81)	4.56 (.99)	4.80 (.98)
	Masculine Traits			
Traditional	5.39 (.91)	3.30 (1.18)	5.87 (.65)	4.86 (1.45)
Same-as-today	5.48 (.84)	4.68 (1.19)	5.42 (1.16)	5.21 (1.12)
Equal	4.99 (1.03)	5.27 (.98)	5.40 (.89)	5.22 (.97)
Total	5.30 (.94)	4.40 (1.38)	5.56 (.94)	5.09 (1.21)

*Note.* Ratings were on a 7-point scale, with higher numbers indicating greater feminine traits or masculine traits. Cell *ns* ranged from 21 to 23 participants.

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<sup>i</sup> In line with scientific consensus about agency and communion as two basic dimensions for judgments of self, others, and groups (see Abele & Wojciszke, 2007; Suitner & Maass, 2008) and scholars' application of these two dimensions to gender (e.g., Bem, 1974; Heilman & Okimoto, 2007), masculine personality and feminine personality were conceptualized and measured as two independent dimensions of gender stereotypes in our study.