

The Effects of Implicit Gender Role Theories on Gender System Justification: Fixed Beliefs Strengthen Masculinity to Preserve the Status Quo

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Four studies ($n = 1199$) tested support for the idea that implicit theories about the fixedness versus malleability of gender roles (entity vs. incremental theories) predict differences in the degree of gender system justification, that is, support for the status quo in relations between women and men in society. Relative to an incremental theory, the holding of an entity theory correlated with more system-justifying attitudes and self-perceptions (Study 1) for men and women alike. We also found that strength of identification with one's gender in-group was a stronger predictor of system justification for men than it was for women, suggesting men's defense of the status quo may be motivated by their membership in a high status group in the social hierarchy. In 3 experiments, we then tested whether exposure to a fixed gender role theory would lead men to identify more with masculine characteristics and their male gender group, thus increasing their defense of the gender system as fair and just. We did not expect a fixed gender role theory to trigger these identity-motivated responses in women. Overall, we found that, by increasing the degree of psychological investment in their masculine identity, adopting a fixed gender role theory increased men's rationalization of the gender status quo compared with when gender roles were perceived to be changeable. This suggests that, when men are motivated to align with their masculine identity, they are more likely to endorse the persistence of gender inequality as a way of affirming their status as "real men."

Keywords: essentialism, gender roles, implicit theory, masculinity, system justification

The extent to which traditional gender roles are seen as changing in modern society depends in part on the metrics considered. On one hand, more American mothers have held the role of family breadwinner in recent years than ever before (Wang, Parker, & Taylor, 2013). On the other hand, women throughout the world remain underrepresented and underpaid in the workforce relative to men (International Labour Organization, 2014; World Economic Forum, 2015) and women are more likely than men to bear responsibility for taking care of both children and elders and to assume housekeeping duties like cleaning, laundry, and food preparation (World Bank, 2012). To the degree that gender roles have changed, the shifts have been asymmetric in the sense that women have entered male-dominated jobs in recent decades more rapidly than men have entered into jobs traditionally reserved for women (Croft, Schmader, & Block, 2015). While the social meaning and value of these changes in traditional gender roles continues to be

debated in all arenas of public life, understanding why and under what circumstances people resist change is of critical importance for those invested in reducing gender inequality.

The current research addresses this question by examining *implicit gender role theories*, or beliefs about the malleability or fixedness of the social roles inhabited by men and women. We examine the effects of these beliefs on masculine identity motives, including seeing oneself in terms of masculine characteristics and identifying strongly with being a man, to understand why men shy away from changing gender roles. The topic of gender equality often focuses on ways for women to gain success in traditionally male roles, however understanding how to encourage men to fill traditionally female roles is equally important to establishing a gender system based in equality. Because men enjoy more status and power in society (Ridgeway & Correll, 2004; Bem, 1993), understanding the factors that increase or decrease their recognition of gender inequality is critical for bringing about social change.

Gender roles speak to divisions of household labor, job segregation, and gender differences in status and authority. Traditional gender roles link females with the "caretaker" roles and males with the "breadwinner" roles. A central tenet of social role theory (Eagly, 1987; Eagly & Steffen, 1984) is that women's presumed communality derives from their historical distribution into homemaker roles, and that men's presumed agency derives from their historical distribution into occupational roles, rather than these being innate qualities (Eagly & Steffen, 1986; Eagly & Wood, 1999; Eagly, Wood, & Dickman, 2000). Whether viewed as historically derived or biologically determined, the mere existence of

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gender roles makes gender atypical behavior seem wrong and thereby reinforces the status quo (Jost & Kay, 2005; Ridgeway, 2011).

Individuals have a fundamental need to view a social system positively and will engage in a number of motivated processes to rationalize the status quo (Glick & Fiske, 2001; Jost & Banaji, 1994; Jost & Kay, 2005; Kunda, 1990; Sidanius & Pratto, 2001). Because men occupy a privileged position in the social hierarchy and women occupy a subordinate position (Ridgeway & Correll, 2004), holding the belief that gender roles are fixed may have different consequences for how each gender views themselves and the legitimacy of the broader social system. Building on Jost and Kay's (2005) research that finds women's (but not men's) support for the gender system increases after priming complementary gender stereotypes that hold feminine attributes as separate but equal in value to masculine attributes, we consider whether men's (but not women's) support for the status quo increases when holding the belief that gender roles are fixed as opposed to malleable. Just as asserting gender differences as established facts triggers the system justification motive for men but not women (Morton, Postmes, Haslam, & Hornsey, 2009), exposure to the belief that gender roles are immutable may strengthen their identification with masculinity and, in turn, their defense of gender inequality.

We make a number of important theoretical and empirical contributions with this research. First, we show that implicit theories of gender roles explain men's greater justification of the gender system. Second, we demonstrate that implicit theories of gender roles affect men's identification with their gender in-group, which corresponds with their defense of the gender system. By linking system justification to masculine identity motives, we shed light on the motivated cognition underlying men's rationalization of the gender status quo. Our research is grounded in conceptual and empirical work on the psychology of implicit theories demonstrating that having fixed versus malleable views have wide ranging consequences for motivation and cognition.

An Implicit Theories Approach to Understanding Gender Inequality

People have long been characterized as "naïve scientists" (Heider, 1958), holding implicit theories that aid in their quest to understand themselves and their social world (Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Elliott & Dweck, 1988). Although generally not explicitly referenced or articulated, these latent theories influence the processing of social information in a variety of ways. A key assumption is whether a given trait or domain is fixed (*entity theory*) or malleable (*incremental theory*). Applied to gender roles, individuals who subscribe to a fixed theory believe certain attributes or tasks are intrinsically linked to gender. That is to say, the role of caretaker cannot be disentangled from the female gender. Men might take on this role, but at its core it will always be a woman's role. Those with a more incremental theory of gender roles, in contrast, see them as pliable: these roles and behaviors are linked more to specific actions and circumstances than to a fixed relationship with gender.

The breadth of domains in which implicit theories take root and influence cognition and motivation is vast, including individual intelligence (Blackwell, Trzesniewski, & Dweck, 2007), moral

character (Chiu, Dweck, Tong, & Fu, 1997), personality (Chiu, Hong, & Dweck, 1997), willpower (Job, Walton, Bernecker, & Dweck, 2013), and attitudes about groups (Halperin et al., 2011), to name a few. Implicit theories guide social perception. For instance, individuals with entity theories of personality tend to perceive more consistency in people's personal attributes over time than those with more incremental theories of personality (Chiu, Hong, & Dweck, 1997). By viewing attributes as fixed, entity theorists perceive that traits are highly predictive of behavior and that, in turn, small samples of behavior allow them to infer underlying traits (Levy, Stroessner, & Dweck, 1998). As such, Levy and colleagues found that entity theorists rely more on stereotypes to process information about social groups than incremental theorists do. When confronted with belief-inconsistent information, entity theorists attempt to discredit the information to maintain their most basic beliefs that people cannot change, while incremental theorists protect the view that people can change (Plaks, Grant, & Dweck, 2005).

Implicit gender role theories speak to the immutability aspect of psychological essentialism (Bastian & Haslam, 2006; Brescoll, Uhlman, & Newman, 2013; Haslam, Bastian, Bain, & Kashima, 2006). This naïve ontology supposes that there are unchanging essences that form the core of what it means to belong to a given category (Gelman & Taylor, 2000; Medin, & Ortony, 1989; Prentice & Miller, 2006; Rothbart & Taylor, 1992) and entails two sets of beliefs: differences are both biological and immutable. Prior research has contrasted belief in a biologically "hard-wired" aspect of gender with sociocultural explanations of gender differences (Brescoll & LaFrance, 2004; Coleman & Hong, 2008). Relative to exposure to sociocultural accounts, exposure to biological explanations bolsters the endorsement of gender stereotypes and leads people to see themselves in terms consistent with in-group characteristics (Hogg & Turner, 1987). This supports the theoretical perspective that essentialism functions to rationalize inequality (Keller, 2005; Yzerbyt, Rocher, & Schadronek, 1997). We propose that holding the belief that social roles are permanently fixed to gender will have predictable effects on gender-relevant attitudes and beliefs over and above beliefs about biological origins of gender differences.

Fixed Gender Roles and Gender-Relevant Beliefs and Attitudes

System justification reflects a fundamental motive to see the current system—that is, laws, social structures, and societal norms—as good, fair, and right (Jost & Banaji, 1994). It arises out of a diverse array of psychological needs to reduce uncertainty, manage threat, and maintain a shared reality (Jost, Ledgerwood, & Hardin, 2008; Jost et al., 2010). Given their belief in the permanence of gender roles, entity theorists may be especially motivated to defend the fairness of the current gender system and to justify gender inequality. In addition to supporting the gender system at the societal level, entity theorists may be more likely to hold beliefs about group differences for men and women. For example, they may indicate a preference for traditional gender roles as opposed to more egalitarian views. Similarly, individuals with fixed gender role beliefs may be more likely than those with malleable beliefs to ascribe traits consistent with being "caretakers" to women and "breadwinner" traits to men due to entity

theorists' greater reliance on stereotypes to categorize and interpret social information. These interpretations about group differences in turn reinforce beliefs that the current system is fair and that any inequality is an inevitable consequence of inherent differences in the value of men and women's social roles, thus sustaining the status quo.

In addition to affecting attitudes about gender roles, implicit gender role theories might also influence self-perception, in line with the tendency to change oneself to fit into a world perceived to be static and unchangeable (Morling & Evered, 2006). Just as the system justification motive drives individuals to see the social system in a positive light, ego motives encourage positive self-perceptions, and group motives encourage in-group favoritism. The strength of any one of these motives depends in part on the salience of the other two. For example, social identity theory posits that the degree to which social structures are held to have impermeable boundaries with stable and legitimate group statuses affects both self-perception and identification with social groups (Tajfel, 1978; Tajfel & Turner, 1979). To maintain their gender status, people may engage in self-stereotyping, or coming to see oneself in terms of in-group characteristics (Bosson & Michniewicz, 2013; Coleman & Hong, 2008; Hogg & Turner, 1987); to protect their group's status, they may strengthen their in-group identification (Doosje & Ellemers, 1997).

The prediction that fixed gender roles influence self-perception arises from research showing that implicit theories about the fixedness or malleability of a given construct powerfully shape the types of goals that individuals adopt (Dweck & Leggett, 1988). Whereas incremental theorists tend to adopt goals oriented toward learning and growth, entity theorists are particularly motivated to prove themselves and show that they possess a desirable characteristic. Applied to gender roles, the holding of a fixed theory might increase the motive to 'prove gender' whereas the holding of an incremental theory might alleviate this pressure. Though the notion that gender needs to be proven may seem counterintuitive, this idea is grounded in sociological theories positing that gender is a motivated demonstration, something that is "performed" and communicated to others on a regular basis (e.g., Butler, 1990; Goffman, 1976; West & Zimmerman, 1987). Gender performances are guided by gender stereotypes, which dictate behaviors and attributes that are allowed versus forbidden from being displayed (Bem, 1981; Prentice & Carranza, 2002). With the goal of proving their gender status, entity theorists may come to see themselves as possessing more gender stereotypical characteristics and fewer counterstereotypical characteristics than incremental theorists.

In addition to predicting the attributes ascribed to the self, we also expect implicit gender role theories to covary with gender identity strength, or the degree to which group membership ("being a man" or "being a woman") is held to be an important aspect of one's personal identity (Branscombe, Kobrynowicz, & Owen, 1996; Ellemers, Spears, & Doosje, 1997; Luhtanen & Crocker, 1992; Spears, Doosje, & Ellemers, 1997). Individuals who hold a fixed gender role theory may more strongly identify with their gender in-group than those who hold an incremental theory, as psychologically investing in gender may be a functional response to a world that is perceived to be unchangeable. Overall, we expected individual differences in implicit gender role theories to correspond with a host of status quo preserving attitudes and

beliefs, influencing both personal identity and system justifying motives.

Fixed Gender Roles Trigger Distinct Identity Motives for Men and Women

Although system justification is a universal need, the extent to which it is activated may vary by situation and individual (Jost et al., 2015). Both dominant and subordinate group members contribute to the maintenance of the system, but the circumstances under which they do so vary. Subordinate group members tend to justify a system that disadvantages them because of feelings of powerlessness (Jost, 2011; van der Toorn et al., 2015) or when the advantages of the system are highlighted (Calogero & Jost, 2011; Glick & Fiske, 2001; Jackman, 1994; Jost & Kay, 2005), whereas dominant group members are motivated to defend the status quo when it is threatened with change (Ellemers, van Knippenberg, & Wilke, 1990) or when the legitimacy of their position is in doubt (Hornsey, Spears, Cremers, & Hogg, 2003).

Whether the system justification motive is triggered for dominant and subordinate group members may vary because system justification can either coincide or compete with two other fundamental motives: ego and group identities (Jost, Burgess, & Mosso, 2001; Jost, 2011; Jost & Banaji, 1994). That is, universal needs for self-esteem (e.g., Greenwald, 1980) and group status (Crocker & Luhtanen, 1990; Tajfel & Turner, 1979) operate alongside the system justification motive (Jost et al., 2001). As advantaged group members, men's ego, group, and system motives are often consistent and mutually reinforcing (Jost et al., 2001, 2015).

While a fixed gender role theory may seem to solidify the male gender group's high status, it does not automatically ensure men's personal gender status. A key aspect of essentialism is that it implies the existence of discrete, all-or-nothing boundaries between category members and nonmembers based on defining features (Haslam, Rothschild, & Ernst, 2002). The motive to prove category membership under fixed gender roles may be stronger for men than it is for women because men comprise an elite cultural group in the social hierarchy (Ridgeway & Correll, 2004) and so men especially are burdened with the need to prove masculinity (Carrigan, Connell, & Lee, 1985; Gilmore, 1990; Kimmel, 1997; Schrock & Schwalbe, 2009; Vandello, Bosson, Cohen, Burnaford, & Weaver, 2008; Vandello & Cohen, 2008) and to eschew femininity from their self-concept (Bosson & Michniewicz, 2013). Accordingly, men react more strongly to feedback that threatens their gender status than women do (Vandello et al., 2008; Willer, Rogalin, Conlong, & Wojnowicz, 2013). Although a fixed gender role theory does not necessarily pose an identity threat to men in the same way as receiving gender-incongruent feedback, a fixed gender role theory may nonetheless activate the goal of securing men's gender status by identifying with masculine attributes and elevating the importance of manhood in their self-concept.

If fixed gender roles increase men's need to prove manhood, we might expect to see an increase in self-stereotyping, which also arises from system threats (Laurin, Kay, & Shepherd, 2011; McCoy & Major, 2007). Just as threatening men's gender status triggers their gender system justification motive (Kosakowska-Berezecka et al., 2016), fixed gender roles may trigger men's efforts to assure their gender status by strengthening their identification with the male gender group. In turn, men may come to see

that their privileged position in the system is fair and just. In this way, men's system justification after adopting a fixed gender role theory may reflect egocentrically biased reasoning (Hastorf & Cantril, 1954; Kray & Haselhuhn, 2012; Kunda, 1990; Lord, Ross, & Lepper, 1979; Lowenstein, Issacharoff, Camerer, & Babcock, 1993). We note that this identity-based account is consistent with recent research demonstrating that men (but not women) who highly identify with their gender group exaggerate differences between men and women (Bosson & Michniewicz, 2013), particularly when men's precarious gender status is made salient.

We examined whether system justification emerges out of the activation of masculine identity motives, that is, the need to see oneself in a positive light by identifying with a high status group, in three ways. First, we tested whether the holding of a fixed gender role theory correlates with an increase in men's gender identity strength. Second, we tested whether men who highly identify with their gender group rationalize gender inequality more than men do who are less identified with their gender group. Finally, we examined whether the increase in men's gender identity strength when holding a fixed gender role theory could account for their defense of the status quo.

We did not expect exposure to a fixed gender role theory to have the same effect on women's system justification motive. Just as fixed theories emphasize men's position of status, they reinforce women's low-status position on the hierarchy. As subordinate group members in the social hierarchy, women's ego and group needs are in contrast to system justification: to see the system as good, women must accept that they deserve their low-status position and look favorably on the high-status out-group. Given that people tend to incorporate the attributes associated with valued groups into their own self-concept (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) and women already identify with agentic traits to a greater degree than men identify with communal traits (Twenge, 1997), it is not obvious that exposure to a fixed gender role theory would increase women's self-stereotyping, as we expect for men. Instead, inducing a fixed theory of gender roles may have no effect on women or even increase their identification with masculine attributes, a pattern that runs counter to self-stereotyping. Moreover, exposure to a fixed gender role theory may have no effect on or even decrease women's identification with womanhood as a subordinate group in the gender hierarchy. Consequently, we did not expect exposure to a fixed theory to trigger women's system justification motive.

Overview of Research

We adopted an implicit theory perspective to understand the effects of beliefs about the fixedness versus malleability of gender roles in society on self-perceptions, in-group identification, and gender system justification. Because the gender system privileges masculinity over femininity (Ridgeway & Correll, 2004), a fixed theory of gender roles was expected to promote identification with masculinity for both men and women. However, we expected the holding of a fixed gender role theory to promote men's but not women's in-group identification and rationalization of the gender system as fair and just. By triggering masculine identity motives, fixed gender role theories lead men to identify more with their gender group, to see themselves in more gender stereotypical

terms, and, ultimately, to adopt more system-justifying views about relations between men and women in society.

We conducted four studies to test our hypotheses. Study 1 established that implicit theories of gender roles predict gender system justification. In addition to system-justifying attitudes about gender in society, we expected fixed gender roles to correspond with a range of gender-relevant attitudes and beliefs that have been shown in prior research to result from the triggering of the system justification motive. We also tested whether degree of in-group identification corresponds with increases in men's but not women's system justification. Studies 2 and 3 established that, relative to when gender roles are held to be malleable, holding the belief that gender roles are fixed causes men to self-stereotype and to adopt more favorable attitudes about the fairness of relations between women and men in society. Study 4 established that the strength of men's masculine identity mediates the link between a fixed gender role theory and system justification. In combination, we establish the central role that men's identification with the male gender group plays in increasing the degree to which the status quo is rationalized as just and fair.

Study 1

A central goal of Study 1 was to establish convergent and discriminant support for the implicit gender role theory construct. To do so, we tested whether it corresponds with a range of gender inequality-relevant attitudes and beliefs, including gender system justification (Jost & Kay, 2005), the endorsement of gender stereotypes (Brescoll & LaFrance, 2004), and preference for traditional gender roles (Larsen & Long, 1988). We also tested whether it correlates with self-stereotyping, a measure of the degree to which one's personal identity is gender conforming, and gender identity strength, a measure of degree of in-group identification. We sought to distinguish the effect of implicit theories of gender roles on each of these measures from the endorsement of biological essentialism (Brescoll et al., 2013) and general implicit person theories (Levy et al., 1998) by statistically controlling for these closely related constructs. For all dependent measures, we expected that the holding of a fixed gender role theory would predict greater support for gender inequality and greater identification with gender stereotypical characteristics at the personal identity level and, at the social identity level, stronger identification with one's gender group, and that these relationships would hold over and above biological essentialism and implicit person theories.

A final goal was to test the role of gender identity strength in influencing men's views on the fairness of the gender system. Recent research points to gender identity strength as a stronger predictor of gender dichotomization, the tendency to distance masculine and feminine traits (Bosson & Michniewicz, 2013), for men than it is for women. In other words, men who strongly identified with their gender in-group were particularly likely to engage in this form of motivated cognition. The same was not true for women, which was interpreted as deriving from men's relatively precarious gender status. Here we conducted an initial test of whether men's in-group identification is a particularly strong predictor of their defense of the status quo with regard to gender roles in society.

Method

Participants. Participants were Amazon Mechanical Turk workers who were paid \$1 for completing the survey. Data were collected in two rounds ($n = 282$ and $n = 231$, respectively). The surveys were identical except that in round 1 we measured attitudes toward traditional gender roles and in the second round we measured gender identity strength and self-stereotyping. We removed four participants from the first round and three participants from the second round who did not pass each of two attention checks. We also removed four participants who did not report their gender, which was central to all of our analyses. We first conducted analyses controlling for round. No interactions between gender and round emerged ($ps > .09$), so we collapsed across the samples in analyses reported below for all variables collected in both rounds. The final combined sample included $n = 506$ (259 men, 247 women).

Participants indicated their race/ethnicity as follows: White (79.4%), Asian (8.2%), African American (7.3%), Hispanic (2.9%), and "other" (2.2%). Participants reported their age range; the median age group was 26–34 years old. On average participants identified their political beliefs as somewhat liberal ($M = 3.01$, $SD = 1.33$) based on a 6-point scale ranging from 1 (*extremely liberal*) to 6 (*extremely conservative*). Because gender differences emerged on age ($M_{\text{men}} = 4.38$, $SD = 1.15$ vs. $M_{\text{women}} = 4.74$, $SD = 1.29$), $t(503) = 3.36$, $p = .001$, $d = .30$ (95% CI [.15, .58]), and political affiliation ($M_{\text{men}} = 3.17$, $SD = 1.32$ vs. $M_{\text{women}} = 2.82$, $SD = 1.34$), $t(504) = -2.98$, $p = .003$, $d = .27$ (95% CI [-.58, -.12]), we controlled for both demographic variables in the analyses below.

Measures and procedure. Participants who signed up for the study were given a link to the online survey with all of our measures.

Implicit gender role theory. Participants completed a 10-item measure ($\alpha = .93$) assessing the perceived immutability of gender roles. Items included: "Even though it's not always popular to say so, men and women will always have different social roles," "I think that men and women will always have different social roles," "I think that men are suited for different roles than women," "No matter how much society progresses, differences in the social roles of women and men will persist," "Even though I might not want to admit it, men and women will continue to hold different roles in society," "I don't think there's any real reason for men and women to have different social roles," "As society progresses, men and women will eventually occupy similar roles in society," "Both men and women are well-suited for most societal roles," "It's only a matter of time before men and women will inhabit the same social roles," "It's only a matter of time before men and women will be fulfilling the same societal roles." The final five items were reverse-scored. Responses were measured on a scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), with higher scores indicating greater endorsement of the belief that gender roles are immutable.

Gender system justification. We used Jost and Kay's (2005) eight-item scale ($\alpha = .80$). Using a scale from 1 (*strongly disagree*) to 6 (*strongly agree*), participants indicated their agreement with how society currently treats gender in terms of whether the system is fair and whether or not it should be changed. Sample items include: "Most policies relating to gender and the sexual

division of labor serve the greater good" and "Society is set up so that men and women usually get what they deserve." Higher composite scores indicate greater system justification.

Gender stereotype endorsement. Participants responded to a 20-item measure of endorsement of gender stereotypes used by Brescoll and LaFrance (2004), which was adapted from Diekmann and Eagly (2000). Participants rated how the average man and the average woman compare to each other on each trait. The response scale ranged from 1 (*men extremely more*) to 6 (*women extremely more*). Both the female and male stereotypes included five positive traits and five negative traits. We reverse scored the masculine items so that higher values indicate greater stereotype endorsement ($\alpha = .85$).

Traditional gender role preference. Participants completed Larsen and Long's (1988) 20-item Attitudes Toward Sex Roles Scale. Participants rated how much they agreed with eight egalitarian belief statements (e.g., "Having a job is just as important for a wife as it is for her husband") and 12 traditional belief statements (e.g., "Women should be more concerned with clothing and appearance than men"). The response scale ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). We reverse scored the 10 egalitarian statements and averaged all items; higher values indicate a stronger preference toward traditional gender roles ($\alpha = .95$).

Self-stereotyping. We administered the 60-item Bem Sex Role Inventory (Bem, 1974). Participants rated how often they would describe themselves in terms of 20 masculine/agentive traits (i.e., self-reliant, assertive, forceful) and 20 feminine/comunal traits (i.e., affectionate, yielding, sympathetic). In addition, 20 gender-neutral traits (i.e., reliable, unpredictable, solemn) were included as distractors. Items were measured on 7-point scales (1 = *never*, 7 = *always*). Reliability scores for masculine identity ($\alpha = .90$) and feminine identity ($\alpha = .84$) were adequate and so we averaged the items into two subscales. We then computed self-stereotyping for men by subtracting feminine identity from masculine identity; for women, we subtracted masculine identity from feminine identity.

Gender identity strength. To measure psychological investment in gender, participants completed seven items adapted from prior research (Bosson & Michniewicz, 2013; Branscombe, Kobrynowicz, & Owen, 1996; Luhtanen & Crocker, 1992). Sample items include, "Being a woman (man) is an important part of my identity" and "Being a woman (man) has very little to do with how I feel about myself." Items were measured on 7-point scales (1 = *strongly disagree*, 7 = *strongly agree*). After reverse scoring negative items, we averaged all items ($\alpha = .92$).

Control variables. To establish convergent and discriminant support for the implicit gender role theory construct, we included the following published self-report measures:

Biological essentialism. Participants indicated their agreement with a seven-item measure ($\alpha = .87$) of gender-specific biological essentialism (Brescoll et al., 2013, adapted from Keller, 2005). Sample items include: "Men commit the majority of violent crimes in this country because they have a greater predisposition toward violence than women," and "Part of the reason why women are more emotional than men is because of the way they're hard-wired." The response scale ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). Higher scores indicated greater agreement with an essentialist explanation of gender.

Implicit person theory. Participants responded to three items ($\alpha = .96$) measuring their general implicit person theory (Dweck, 1999). The response scale ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). Higher scores indicate agreement that people are generally “fixed” (e.g., “Everyone is a certain kind of person and there is not much that can be done to really change that”).

Results

Table 1 reports Pearson correlation coefficients between all measured variables and Table 2 reports gender differences. Men reported greater justification of the gender system than women did. In addition, men endorsed entity theories of gender roles, biological essentialism, and preferences for traditional gender roles more than women did. Each of these effect sizes was in the small to medium range (Cohen, 1992). No gender difference emerged in the endorsement of gender stereotypes, implicit person theories, self-stereotyping, or gender identity strength.

Effects of implicit gender role theories on gender-relevant attitudes and beliefs. Table 3 summarizes the results of multiple regressions predicting the five dependent variables from differences in implicit gender role theories. For each dependent variable, we ran 3 regression models. We controlled for age and political orientation in all of our analyses. Model 1 included the core independent variables of gender and implicit gender role theory (IGRT). In Model 2, we added an interaction term to test whether predictions from entity versus incremental theories differed for men and women. In Model 3, we tested whether the results held with the addition of other validated constructs relevant to implicit theories (implicit person theory) and the biological aspect of psychological essentialism (biological essentialism).

We found that, beyond the effects of biological explanations for gender differences and generalized beliefs about the degree to which people can change, the holding of a fixed gender role theory predicted greater rationalization of the gender system ($\beta = .18$), $t(496) = 2.77, p = .006$, and a stronger preference for traditional gender roles ($\beta = .38$), $t(269) = 5.31, p < .001$. In addition, although fixed beliefs were not associated with greater gender stereotyping in general once biological essentialism was introduced as a predictor, entity theorists did engage in more self-stereotyping ($\beta = .23$), $t(220) = 2.01, p = .046$, further suggesting immutable gender roles affect personal identity motives. Although some evidence emerged to suggest implicit theories predict gender identity strength, this effect was not robust to the addition of biological essentialism and implicit person theories as controls.

We did not find evidence for an interaction between gender and implicit gender role theory for any of the dependent variables.

Moderation by gender identity strength. We tested whether gender identity strength moderates the relation between gender and gender system justification. If men’s identification with masculinity biases their judgments in support of the status quo, then a stronger relationship between gender identity strength and system justification should emerge for men than women. To test this prediction, we conducted a linear regression including gender (0 = female, 1 = male), gender identity strength and their interaction. Before doing so, we mean centered identity strength (Aiken & West, 1991). Once again, we controlled for age and political orientation. As depicted in Figure 1, gender identity strength predicted system justification ($\beta = .17$), $t(221) = 2.77, p = .005$. This main effect was moderated by gender ($\beta = .20$), $t(221) = 2.19, p = .03$. As expected, gender identity strength predicted system justification for men ($\beta = .29$), $t(125) = 3.76, p < .001$; it did not predict system justification for women ($\beta = .01$), $t(94) = .15, p = .88$.

Discussion

This study provides correlational evidence that individual differences in the degree to which gender roles are held to be fixed versus malleable predict gender-relevant attitudes and beliefs. Specifically, fixed beliefs were associated with greater justification of gender system inequality compared with incremental beliefs as well as a stronger preference for traditional as opposed to egalitarian gender roles. Differences emerged not only in reactions to the gender system overall, but also in beliefs about the self. Participants who viewed gender roles as inherently fixed categorized themselves as conforming more to gender stereotypes than did participants who held the belief that gender roles are malleable.

We did not find evidence that gender moderated the effect of implicit gender role theories on system-justifying attitudes, as we might have expected. However, in hindsight this may be attributable to the correlational nature of this study and the need for the system-justification motive to be triggered in response to situational cues. For example, although Jost and Kay (2005) observed a stronger effect of activating complementary gender stereotypes on the gender system justification of women than men, they demonstrated this relationship experimentally but not correlationaly. Given that we measured gender stereotype endorsement, we tested whether the relationship between this measure and gender system justification was moderated by gender, as their theory

Table 1
Intercorrelations Between Individual Difference Scales

Variable	1	2	3	4	5	6	7	8
1. Gender System Justification	—							
2. Implicit Gender Role Theory	.41***	—						
3. Biological Essentialism	.47***	.62***	—					
4. Implicit Person Theory	.21***	.25***	.38***	—				
5. Stereotype Endorsement	.22**	.23***	.34***	.15**	—			
6. Traditional Role Preference	.40***	.64***	.54**	.24***	.09	—		
7. Self-Stereotyping	-.01	.13*	.06	.10	.12	—	—	
8. Gender Identity Strength	.21**	.27***	.23***	.17*	.20**	—	.15*	—

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

Table 2
Means, Standard Deviations, and *t* Test Results of the Individual-Difference Scales in Study 1

Scale	Overall (<i>N</i> = 506)		Men (<i>n</i> = 259)		Women (<i>n</i> = 247)		<i>t</i> test	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Implicit Gender Role Theory	3.21	1.04	3.33	1.04	3.07	1.02	-2.84**	.25
Biological Essentialism	3.47	1.00	3.56	.98	3.37	1.00	-2.25*	.19
Implicit Person Theory	3.49	1.27	3.46	1.30	3.53	1.24	.57	.06
Gender System Justification	3.63	.91	3.78	.86	3.48	.94	-3.71***	.33
Gender Stereotype Endorsement	4.35	.53	4.36	.55	4.34	.52	.73	.04
Traditional Role Preference ^a	2.29	.95	2.53	.93	2.09	.91	-4.01***	.48
Self-Stereotyping ^a	.29	1.05	.27	.97	.31	1.14	.32	.04
Gender Identity Strength ^a	5.07	1.30	5.00	1.30	5.17	1.31	.97	.30

* These variables were collected for subsamples of *n* = 279 (130 men and 149 women) for traditional role preference and *n* = 227 (129 men and 98 women) for self-stereotyping and gender identity strength.

* *p* < .05. ** *p* < .01. *** *p* < .001.

would predict. Again, the interaction was not significant (*p* = .68), suggesting system justification is best measured in response to a situational trigger. In the next study, we examined whether inducing implicit theories has a distinct causal impact on men's self-stereotyping, which is consistent with the notion that the belief itself triggers identity motives for men but not women.

Another goal of this study was to examine whether gender identity strength more closely tracks with men's gender system justification than it does for women. Whereas masculinity strength predicted system justification for men, femininity strength did not predict women's justification of the gender system. This implies that men support gender inequality to the degree that being a man is an important aspect of how they see themselves, which is consistent with the idea that men's system justification reflects egocentrism arising from identification with the dominant group in the gender hierarchy. We further explore the explanatory role of

in-group identification in response to exposure to a fixed gender role theory in Study 4.

Study 2

The previous study showed that implicit gender role theories correlate with a wide variety of gender inequality-relevant attitudes and beliefs for both men and women. Because an individual difference approach is necessarily correlational, however, it did not allow us to determine the extent to which implicit gender role theories exert a causal influence over system justifying beliefs and self-perceptions. In this study, we experimentally manipulated theory via an essay induction modeled on prior research (Bergen, 1992; Chiu, Hong, & Dweck, 1997) to test whether, relative to an incremental theory, exposure to a fixed gender role theory triggers gender identity motives for men but not women, as predicted based

Table 3
Multiple Regression Analyses for Implicit Theories of Gender Roles Predicting Other Gender-Relevant Constructs (Study 1)

Predictor variable	Dependent variables														
	System justification ^a			Stereotype endorsement ^a			Traditional role preference ^b			Self-stereotyping ^c			Gender identity strength ^c		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Model 1															
Gender	.15	.07	.08*	-.00	.05	-.00	.23	.09	.12**	-.03	.14	-.02	-.29	.18	-.11
IGRT	.27	.04	.31***	.09	.03	.17***	.53	.05	.56***	.18	.07	.18*	.34	.09	.28***
<i>R</i> ² (<i>R</i> _{adjusted} ²)	.24***(.23)			.08***(.07)			.48***(.47)			.04†(.02)			.09**(.07)		
Model 2															
Gender	.14	.07	.08*	-.01	.05	-.01	.22	.09	.12**	-.04	.15	-.02	-.28	.18	-.11
IGRT	.32	.05	.36***	.11	.03	.22**	.50	.06	.53***	.21	.10	.22*	.29	.12	.23*
Gender × IGRT	-.10	.07	-.08	-.05	.04	-.07	.06	.08	.04	-.07	.13	-.05	.10	.16	.06
<i>R</i> ² (<i>R</i> _{adjusted} ²)	.24***(.23)			.08***(.07)			.48***(.47)			.04(.02)			.09**(.07)		
Model 3															
Gender	.14	.07	.08*	-.01	.05	-.01	.25	.08	.13**	-.02	.15	-.01	-.29	.18	-.11
IGRT	.16	.06	.18**	.02	.04	.04	.35	.07	.38***	.23	.11	.23*	.21	.14	.17
Gender × IGRT	-.08	.07	-.07	-.04	.04	-.06	.10	.08	.08	-.08	.13	-.06	.08	.16	.05
Implicit Person	.02	.03	.03	.01	.02	.02	.06	.05	.08†	.07	.06	.10	.05	.07	.05
Essentialism	.27	.05	.30***	.16	.03	.29***	.24	.06	.24***	-.06	.09	-.06	.12	.11	.10
<i>R</i> ² (<i>R</i> _{adjusted} ²)	.30***(.29)			.13***(.12)			.52***(.51)			.05(.02)			.10**(.07)		

Note. All models control for age and political orientation. IGRT = Implicit Gender Role Theory.

^a Combined rounds of data collection, *n* = 506. ^b First round of data, *n* = 279. ^c Second round of data, *n* = 227.

† *p* < .10. * *p* < .05. ** *p* < .01. *** *p* < .001.

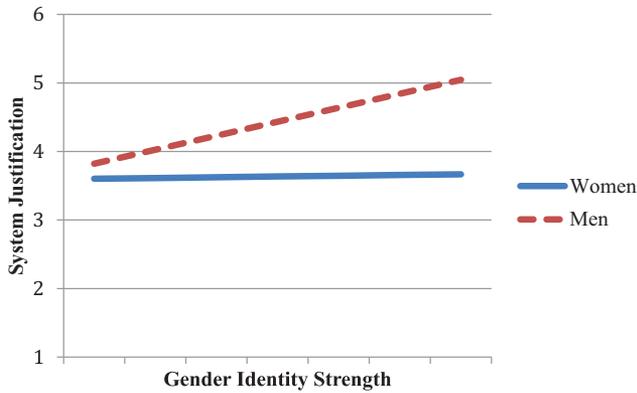


Figure 1. Relationship between Gender, Gender Identity Strength, and Gender System Justification, Study 1. Estimated values are plotted. See the online article for the color version of this figure.

on the differing positions that they occupy in the social hierarchy. As self-stereotyping is an identity process known to satisfy the system-justifying goal (Laurin et al., 2011), we measured it as an initial test that fixed gender role theories trigger men to identify more with masculine characteristics.

Method

Participants. Participants were 217 students (122 female, 94 male, 1 gender unspecified) enrolled in an undergraduate business course. They completed the online survey in partial fulfillment of a course research participation requirement. Participants ranged in age from 19 to 33 years and the median age was 22. The majority of participants (67.7%) indicated they were native English speakers. The ethnicity of the sample included: Asian (67.9%), White (20.6%), Latino/Hispanic (2.8%), African American (0.9%), Middle Eastern (2.3%), and “other” (5.5%).

Procedure. Participants consented to participate and were given up to an hour to complete an online survey that involved several unrelated surveys. The current study was embedded between demographic measures and the other surveys.

Experimental manipulation. To manipulate implicit theory, participants were instructed to read a short article carefully as they would be asked to recall details about the article throughout the study. We created two versions of the article (see the Appendix for the full text). In the entity condition, the article summarized evidence for the immutable nature of gender roles in society. For example, participants read about a research study that concluded, “The vast majority of a society’s division of labor between the sexes is due to personal factors that remain stable over time.” In the incremental condition, the article summarized evidence for the malleable nature of gender roles in society. The corresponding research study indicated, “The vast majority of a society’s division of labor between the sexes is due to environmental factors that can change over time.” The articles were matched for length and general content and simply varied whether the bulk of evidence suggested gender roles are fixed or changeable over time.

Dependent measure. We administered the BEM SRI (Bem, 1974) as in Study 1. Reliability scores for masculine attributes ($\alpha = .90$) and feminine attributes ($\alpha = .84$) were adequate. We

computed self-stereotyping in an identical manner as the previous study. We also included a manipulation check that asked participants to select the topic of the article that they read from four summary statements (e.g., “Even with training and effort most societal gender roles do not change” in the entity condition). All participants correctly identified the article topic and were thus included in the analyses below.

Results

We predicted that fixed gender roles would trigger masculine identity motives and lead men to align their self-perceptions with masculine attributes more than feminine attributes. Given the implied value of masculinity over femininity under fixed gender roles, we did not expect to see evidence of elevated self-stereotyping for women, as claiming more feminine characteristics would require distancing themselves from the more highly esteemed masculine traits. Instead, fixed gender roles might also increase women’s identification with masculine attributes over feminine attributes.

To test this hypothesis, we conducted an analysis of variance (ANOVA) with implicit theory and gender as between-subjects factors, which revealed two effects depicted in Figure 2. Overall, men ($M = .66, SD = .82$) self-stereotyped more than women did ($M = .02, SD = 1.04$), $F(1, 211) = 24.21, p < .001, d = .68, 95\% CI [.51, .86]$. The predicted Gender \times Theory interaction also emerged, $F(1, 211) = 6.79, p = .01$. Men self-stereotyped more in the entity condition ($M = .85, SD = .86$) than in the incremental condition ($M = .46, SD = .73$), $t(211) = 1.96, p = .052, d = .49, 95\% CI [.25, .70]$. By contrast, women self-stereotyped marginally less in the entity condition ($M = -.13, SD = 1.11$) than in the incremental condition ($M = .16, SD = .96$), $t(211) = -.172, p = .087, d = -.28, 95\% CI [-.56, -.04]$. The main effect for implicit theory was not significant, $F(1, 211) = .12, p = .34$.

Discussion

We established a causal link between implicit theories of gender roles and self-stereotyping for men, the advantaged group mem-

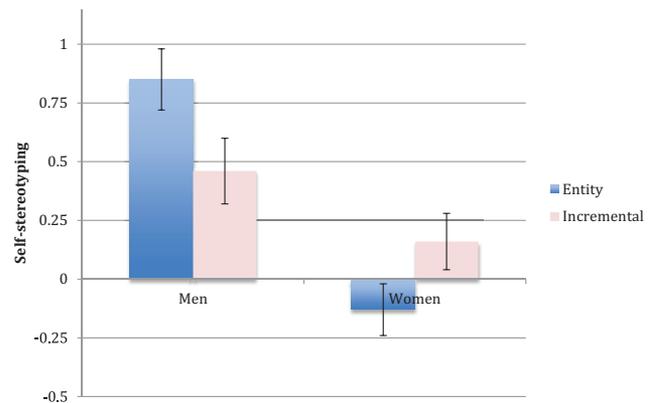


Figure 2. Differences in self-stereotyping based on gender and experimental condition for Study 2. Self-stereotyping scores calculated for men by subtracting feminine identity scores from masculine identity scores and for women by subtracting masculine identity from feminine. Error bars represent the standard errors associated with each mean. See the online article for the color version of this figure.

bers in the existing gender hierarchy. Men self-stereotyped more when holding the belief that gender roles are fixed than when gender roles were held to be changeable. By contrast, women did not self-stereotype in the fixed gender role condition; instead, they came to see themselves as somewhat more masculine, a pattern reflective of the premium placed on masculine agency under the current gender system. Next we turned to whether fixed theories of gender roles promote system-justifying attitudes in men.

Study 3

The previous study established that the holding of an entity theory of gender roles increases men's tendency to see themselves in masculine as opposed to feminine terms. We did not find evidence that self-stereotyping occurs for women in response to implicit gender role theories, which makes sense given the value of agency over communion under the current gender system. As self-stereotyping is a tendency triggered by the activation of the system justification motive (Laurin et al., 2011), Study 2's findings provide initial support for our hypothesis that a fixed gender role theory triggers men's system justification motive. Building on the idea that exposure to a fixed gender role theory will trigger men's system justification motive, we manipulated theory in an identical manner as the previous experiment and then tested its effect on beliefs about the fairness of the current state of relations between men and women in society.

Method

Participants. We attempted to recruit 200 participants from Amazon's Mechanical Turk. However, six participants consented to participate but then exited before completing any of the dependent measures and two participants did not report their gender, leaving a final sample of 192 participants (102 males and 90 females). Participants reported their age range; the median age group was 25–34 years old. Participants represented a number of ethnic and racial groups: White (78.1%), African American (8.3%), Hispanic (5.2%), Asian (5.7%), Native American (1%), and "other" (1.6%). Median income bracket was \$30,000 to \$39,999. Median level of education was a 2-year college degree. Participants also reported their political ideology using a scale from 1 (*extremely liberal*) to 6 (*extremely conservative*). Mean response was 3.02 ($SD = 1.36$).

Procedure. We manipulated implicit theories using the identical method described in Study 2. After reading the article to which they were randomly assigned, participants completed the identical measure of system justification as in Study 1 ($\alpha = .85$). We also included a seven-item manipulation check of implicit theory ($\alpha = .92$).¹ Finally, to distinguish the effect of immutability from biology, we included the identical measure of biological essentialism as in Study 1 ($\alpha = .90$) and introduced it as a covariate in secondary analyses.

Results

We utilized separate ANOVAs for each measure, including gender and essay condition (entity, incremental) as between-subjects factors.

Manipulation check. Participants in the entity condition reported more fixed beliefs about gender roles ($M = 3.96$, $SD = .99$)

than did those in the incremental condition ($M = 3.51$, $SD = 1.16$), $F(1, 188) = 6.89$, $p = .009$, $d = .42$, 95% CI [.23, .66]. This held true for men and women alike.

System justification. Overall, men ($M = 4.23$, $SD = 1.09$) reported greater gender system justification than did women ($M = 3.72$, $SD = 1.23$), $F(1, 188) = 8.78$, $p = .003$, $d = .44$, 95% CI [.23, .70]. The main effect for implicit theory was not significant, $F(1, 188) = 1.99$, $p = .16$. As depicted in Figure 3, a Gender \times Theory interaction emerged to a marginal degree, $F(1, 188) = 3.56$, $p = .06$. In the entity condition, men ($M = 4.48$, $SD = 1.10$) justified the gender system more than women did ($M = 3.67$, $SD = 1.26$), $t(188) = 3.37$, $p = .001$, $d = .69$, 95% CI [.48, .95]. In the incremental condition, men ($M = 3.93$, $SD = 1.00$) and women ($M = 3.75$, $SD = 1.22$) did not differ in gender system justification, $t(188) = 1.02$, $p = .32$, $d = .16$, 95% CI [−.03, .42]. Whereas men's system justification varied across conditions, $t(188) = -2.44$, $p = .02$, $d = -.53$, 95% CI [−.81, −.24], women's did not $t(188) = .32$, $p = .75$, $d = .07$, 95% CI [−.26, .48].

Next we examined the robustness of this effect by controlling for biological essentialism. Though participants in the entity condition ($M = 3.51$, $SD = 1.05$) endorsed biological essentialism more than participants in the incremental condition ($M = 3.16$, $SD = 1.05$), $F(1, 188) = 4.44$, $p = .037$, $d = .34$, 95% CI [.13, .55], endorsing biological explanations for gender differences could not account for the interaction between gender and implicit theory on system justification, $F(1, 187) = 3.64$, $p = .06$.

Discussion

This study provides causal evidence that believing that gender roles are fixed can trigger the system justification motive in men. By contrast, invoking an incremental theory of gender roles reduced men's rationalization of gender inequality to such a degree that the gender difference in system justification was mitigated entirely. Whereas implicit theories about gender roles predicted men's system justification, women's system justification was not affected by the implicit theory that they held. In combination with Study 2, these findings suggest that holding a fixed theory has distinct consequences for men and women, both in terms of self-perception and social perception.

In the final study, we directly measured the role of masculine identity in triggering the system justification motive in men. We expected the holding of a fixed gender role theory to increase system justification in men by increasing their psychological investment in being a man. By increasing the importance of masculinity to their overall self-concept, immutability beliefs may drive men to seek positive affirmations of their male identity through system justification and self-stereotyping. Defending the gender system as fair allows men to both bolster their group's advantaged position and assign higher value to masculine traits. Self-stereotyping allows men to confirm they belong in this elite male

¹ We used a prior seven-item version of the scale reported in Study 1, which included references to the "naturalness" and "innateness" of gender role divisions in five items. The correlation between these items with the two items that did not include these references was $r(224) = .87$, $p < .001$, providing some assurance that the implicit theory of gender roles construct does not hinge on this distinction. We also measured implicit person theory and preference for traditional gender roles in an identical manner as Study 1 but did not find any effects so we do not discuss these variables further.

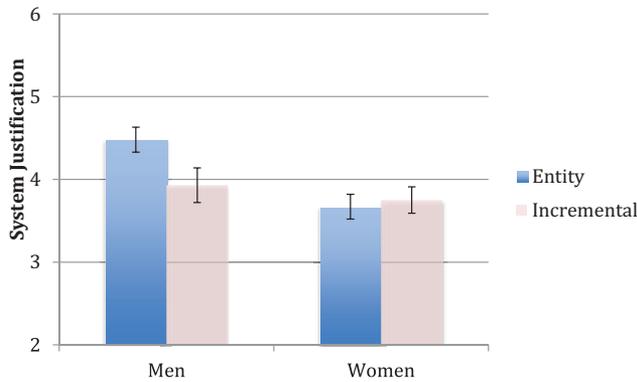


Figure 3. Differences in system justification scores as a function of experimental condition and gender for Study 3. Error bars represent the standard errors associated with each mean. See the online article for the color version of this figure.

group by assigning themselves those desirable masculine characteristics.

Study 4

Our final experiment had two purposes. First, we tested whether a fixed gender role theory triggers men’s system justification through the strengthening of their masculine identity. To do so, we manipulated implicit theories as in the two prior experiments and then measured attitudes about gender roles in society and self-stereotyping. We tested for evidence of moderated mediation, whereby increases in gender identity strength after exposure to a fixed gender role theory explain men’s but not women’s defense of the status quo.

Whereas Study 2 showed that entity theories increase men’s tendency to identify with masculine relative to feminine attributes, the present study used a finer-grained measure of gender identity that included equal degrees of positively and negatively valenced traits (Bosson & Michniewicz, 2013). Doing so allowed us to examine whether men’s self-stereotyping is selective in the sense that their increased identification with masculinity is limited to positive and not negative attributes (Biernat, Vescio, & Green, 1996), offering further evidence that this is a motivated process driven by the desire to maintain positive self-regard by associating with the desirable characteristics of a high status group. Given men’s tendency to distance their self-concept from feminine attributes (Bosson & Michniewicz, 2013), we also examined whether men selectively dis-identify with negative but not positive feminine attributes when holding a fixed gender role theory.

Method

Participants. We recruited 300 participants from Amazon’s Mechanical Turk. We excluded 16 participants who failed either a manipulation check asking them to recap the main thesis of the essay or an attention check in the system justification scale. When we reran analyses including these participants, the results did not materially change. Our final sample included 284 participants, including 144 males and 140 females. Participants reported their age range; the median age group was 25–34 years old. Participants

also represented a number of ethnic and racial groups (82.9% White, 5.3% African American, 4.3% Hispanic, 6% Asian, 0.4% Native American, 1.1% “other”). As in prior studies, participants reported their political ideology using a scale from 1 (*extremely liberal*) to 6 (*extremely conservative*). The mean response was 3.06 ($SD = 1.26$).

Procedure and dependent measures. Participants received the identical implicit theory essay manipulation from the previous experiments and then completed the following dependent measures:

Gender system justification. Participants completed the identical measures of system justification ($\alpha = .85$) used in the prior studies.

Gender identity strength. We measured gender identity strength ($\alpha = .92$) as in Study 1.

Self-stereotyping. We measured personal identity via a 36-item measure from Bosson and Michniewicz (2013). This measure included nine positively valenced masculine traits ($\alpha = .78$; e.g., adventurous, independent), nine positively valenced feminine traits ($\alpha = .86$; e.g., graceful, appreciative), nine negatively valenced masculine traits ($\alpha = .87$; e.g., boastful, arrogant), and nine negatively valenced feminine traits ($\alpha = .88$; e.g., moody, fussy).

Manipulation check and control variable. Participants completed a four-item version of the implicit theories measure reported in Study 1 ($\alpha = .91$). To further confirm that implicit gender role theories affect system justification independent of endorsement of biological essentialism ($\alpha = .88$), we included this measure as a control in secondary analyses.

Results

Manipulation check. Once again, the essay manipulation was successful. Participants in the entity condition reported more immutable beliefs about gender roles ($M = 4.30, SD = 1.59$) than did those in the incremental condition ($M = 3.49, SD = 1.31$), $F(1, 280) = 20.84, p < .001, d = .56, 95\% CI [.30, .77]$.

System justification. Men ($M = 4.35, SD = 1.15$) reported greater system justification than did women ($M = 4.06, SD = 1.08$), $F(1, 277) = 4.50, p = .04, d = .26, 95\% CI [.07, .44]$. The Gender \times Theory interaction was marginal, $F(1, 277) = 3.07, p = .075$. Replicating Study 3, in the entity condition, men reported greater system justification ($M = 4.49, SD = 1.28$) than women did ($M = 3.97, SD = 1.13$), $t(280) = 2.74, p = .007, d = .43, 95\% CI [.22, .62]$. In the incremental condition, gender system justification did not differ between men ($M = 4.19, SD = .96$) and women ($M = 4.14, SD = 1.05$), $t(280) = .22, p = .83, d = .05, 95\% CI [-.11, .22]$.

Once again we tested whether biological essentialism could account for this effect. The essay manipulation did not affect endorsement of biological essentialism, $F(1, 280) = 1.49, p = .22, d = .16, 95\% CI [-.06, .36]$ and the interaction effect slightly strengthened when controlling for biological essentialism, $F(1, 279) = 4.06, p = .045$.

Self-stereotyping. We conducted separate between-subjects ANOVAs including gender and theory condition for each aspect of personal identity.

Masculine positive. Participants in the entity condition ($M = 4.92, SD = .84$) reported stronger identification than did participants in the incremental condition ($M = 4.69, SD = .88$), $F(1,$

277) = 4.26, $p = .04$, $d = .28$, 95% CI [.13, .41]. The Gender \times Theory interaction was marginal, $F(1, 277) = 3.60$, $p = .06$. In the entity condition, men ($M = 5.07$, $SD = .83$) identified more than women did ($M = 4.73$, $SD = .83$), $t(280) = 2.33$, $p = .02$, $d = .41$, 95% CI [.23, .62]. In the incremental condition, men ($M = 4.66$, $SD = .95$) and women ($M = 4.72$, $SD = .83$) did not differ in their identification, $t(280) = -.21$, $p = .83$, $d = -.03$, 95% CI [-.27, .15]. Whereas men's identity shifted across conditions, $t(280) = 2.75$, $p = .006$, the same was not true for women, $t(280) = .17$, $p = .86$.

Masculine negative. Men ($M = 2.57$, $SD = 1.03$) reported stronger identification than did women ($M = 2.10$, $SD = .88$), $F(1, 277) = 18.48$, $p < .001$, $d = .49$, 95% CI [.32, .64]. No other effects emerged as significant.

Feminine positive. Women ($M = 5.29$, $SD = .79$) reported stronger identification than did men ($M = 4.65$, $SD = 1.01$), $F(1, 277) = 32.45$, $p < .001$, $d = -.71$, 95% CI [-.87, -.58]. No other effects emerged as significant.

Feminine negative. Women ($M = 3.11$, $SD = 1.14$) reported stronger identification than did men ($M = 2.72$, $SD = 1.12$), $F(1, 277) = 7.09$, $p = .008$, $d = -.35$, 95% CI [-.53, -.16]. Second, participants in the entity condition ($M = 4.92$, $SD = .84$) reported weaker identification than did participants in the incremental condition ($M = 4.69$, $SD = .88$), $F(1, 277) = 6.54$, $p = .01$, $d = .27$, 95% CI [.13, .41]. The interaction between gender and implicit theory was marginal, $F(1, 277) = 3.30$, $p = .07$. In the entity condition, women ($M = 3.06$, $SD = 1.16$) reported stronger identification than men did ($M = 2.46$, $SD = 1.09$), $t(280) = -3.16$, $p = .002$, $d = -.54$, 95% CI [-.78, -.25]. In the incremental condition, women ($M = 3.16$, $SD = 1.13$) and men ($M = 3.05$, $SD = 1.07$) did not differ in their identification, $t(280) = -.62$, $p = .54$, $d = -.10$, 95% CI [-.36, .15]. Whereas men's identity shifted between experimental conditions, $t(280) = -3.01$, $p = .003$, $d = -.55$, 95% CI [-.79, -.29], the same was not true for women, $t(280) = -.42$, $p = .68$, $d = -.09$, 95% CI [-.38, .16].

Gender identity strength. A between-subjects ANOVA revealed three effects. Gender identity strength was greater in the entity condition ($M = 5.43$, $SD = 1.32$) than in the incremental condition ($M = 5.13$, $SD = 1.33$), $F(1, 277) = 4.73$, $p = .03$, $d = .23$, 95% CI [.01, .45]. Unexpectedly, a main effect for gender emerged, with women ($M = 5.50$, $SD = 1.30$) reporting stronger gender identity than men ($M = 5.06$, $SD = 1.32$), $F(1, 277) = 9.49$, $p = .002$, $d = -.34$, 95% CI [-.55, -.12]. More importantly for testing our hypothesis, the Gender \times Theory interaction emerged, $F(1, 277) = 5.88$, $p = .02$.

Because women reported more identity strength overall and men and women were reporting on different aspects of their identity, it made sense to break the interaction down within gender. For men, the strength of masculinity in their self-concept was greater in the entity condition ($M = 5.38$, $SD = 1.32$) than in the incremental condition ($M = 4.67$, $SD = 1.23$), $t(280) = -3.75$, $p < .001$, $d = .56$, 95% CI [.27, .86]. For women, feminine identity strength did not differ between the entity ($M = 5.51$, $SD = 1.36$) and incremental ($M = 5.53$, $SD = 1.25$) conditions, $t(280) = -.16$, $p = .88$, $d = -.02$, 95% CI [-.35, .26].

Moderated mediation analyses. Recall that in Study 1 gender identity strength moderated the effect of gender on system justification. Whereas men's identification with manhood corre-

sponded with increased support for the gender system, women's identification with womanhood did not predict gender system justification. This makes sense given that the gender hierarchy advantages men as the dominant group and disadvantages women as the subordinate group. By identifying with the dominant group, men are more motivated to defend the status quo.

We examined whether gender identity strength is a mechanism by which exposure to a fixed gender role theory trigger's men's system justification. By increasing the importance of 'being a man' in men's personal identity, exposure to a fixed gender role theory may motivate their defense of the gender system. Conversely, incremental theories of gender roles may decrease the centrality of manhood in men's personal identity, thus reducing the motive to justify the system.

To test this account, we ran a series of moderated mediation models using Hayes's (2013) PROCESS macro (Model 7) with 5,000 biased bootstrap samples. Implicit theory (incremental = 0, entity = 1) was entered as the independent variable, gender (female = 0 and male = 1) was entered as the moderator, and gender identity strength was the mediator for each model. We examined each of the three dependent variables for which an interaction emerged above: gender system justification, positive masculine self-stereotyping and negative feminine distancing.

System justification. Gender identity strength mediated the effect of implicit gender role theory on system justification for men, indirect effect = .17, $SE = .06$, 95% CI [.08, .30]. For women, gender identity strength was not a significant mediator, indirect effect = $-.01$, $SE = .06$, 95% CI [-.12, .11]. Overall, as depicted in Figure 4a, the moderated mediation model was supported, index = .18, $SE = .08$, 95% CI [.04, .36]. Relative to

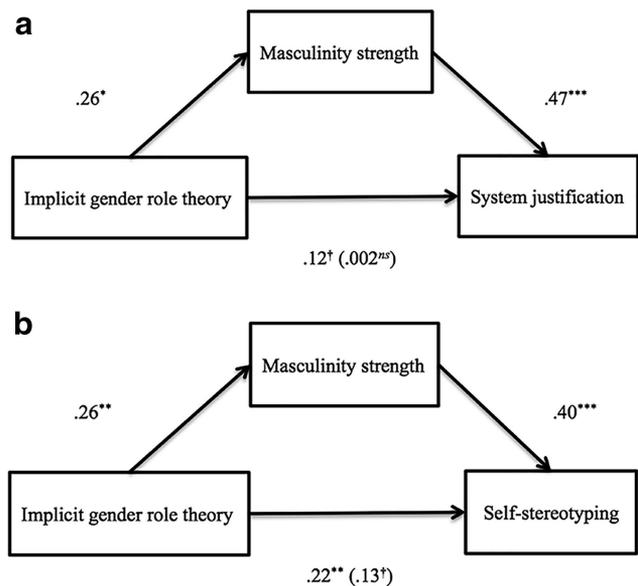


Figure 4. Mediation models showing the indirect effect of implicit gender role theory (0 = incremental, 1 = entity) on (a) men's gender system justification and (b) men's masculine positive self-stereotyping as mediated by masculinity strength. Standardized regression coefficients are shown. The value inside parentheses indicates the coefficient when the mediator was included in the model. † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

holding a fixed theory of gender roles, incremental beliefs about gender roles decreased men's justification of the gender system by decreasing the strength of their masculinity identity.

Masculine positive identity. For identification with masculine positive characteristics, the moderated mediation model was supported, $index = .07, SE = .05, 95\% CI [.01, .20]$. For men, gender identity strength mediated the effect of implicit gender role theory on system justification, indirect effect = $-.07, SE = .04, 95\% CI [.02, .17]$. For women, gender identity strength was not a significant mediator, indirect effect = $.00, SE = .02, 95\% CI [-.06, .04]$. This pattern is depicted in Figure 4b.

Feminine negative identity. We did not find support for moderated mediation when identification with feminine negative characteristics was the dependent variable, $index = .03, SE = .05, 95\% CI [-.16, .04]$.

Meta-analysis combining Studies 3 and 4. Finally, to establish the overall size of the interaction between gender and implicit theory on system justification, we performed a meta-analysis that combined Studies 3 and 4, weighting each experiment's effect by the sample size. The gender difference in system justification in the entity condition was $d = .53, 95\% CI [.32, .76]$. The gender difference in the incremental condition was $d = .09, 95\% CI [-.09, .29]$. When we broke the interaction down by gender, the implicit theory effect for men was moderate to large in size, $d = .72, 95\% CI [.52, .90]$; for women the effect was small in size, $d = -.11, 95\% CI [-.35, .08]$. With the combined sample, both the gender main effect, $F(1, 472) = 11.88, p = .001$, and the Gender \times Theory interaction emerged, $F(1, 472) = 6.34, p = .01$. The pattern of means reveals that men who were exposed to a fixed gender role theory ($M = 4.49, SD = 1.21$) engaged in more gender system justification than did participants in the remaining cells ($M_{female\ entity} = 3.86, SD = 1.18; M_{male\ incremental} = 4.09, SD = .99; M_{female\ incremental} = 3.99, SD = 1.14$).

Discussion

We observed additional support for our central hypothesis that exposure to a fixed gender role theory causes men to rationalize the status quo with regard to gender relations in society. Men in the entity condition engaged in more system justification relative to men in the incremental condition. By contrast, women's gender system justification was not affected by the implicit theory manipulation.

We also provide further evidence that implicit gender role theories affect the extent to which men self-stereotype. Exposure to an entity theory caused men to see themselves as possessing more positive masculine attributes and fewer negative feminine attributes relative to men who had been exposed to the belief that gender roles are malleable. The observation that men's increased identification with masculine traits was limited to positively valenced traits suggests a motivated effect; the same can be said about their distancing from feminine traits that were negative (but not positive) in valence. Presumably, men's identification with positive characteristics associated with their gender in-group and distancing from negative characteristics associated with their gender out-group served to secure their gender status under a gendered world portrayed as fixed. Given prior work establishing a link between self-stereotyping and system justification (Laurin et al.,

2011), this pattern offers further evidence that fixed gender roles trigger men's system justification motive.

Finally, we tested whether the link between implicit gender role theories and men's gender system justification and selective self-stereotyping could be explained by the strength of their identification with the male gender group. We found support for moderated mediation, whereby the link between exposure to an entity theory and these motivated cognitions for men can be explained by the increased centrality of masculinity in the self-concept. However, the same was not true for women. That is, fixed gender roles triggered system justification in men but not women by increasing the strength of manhood in men's self-concept. The fact that we did not observe a similar pattern with respect to men's disidentification with feminine negative attributes suggests the system justification motive may reflect men's stronger pull toward masculinity as opposed to push away from femininity (Bosson & Michniewicz, 2013), although this interpretation is speculative and thus worth testing in future research.

General Discussion

We provide converging evidence of a systematic relationship between implicit gender role theories and men's rationalization of gender inequality. Our research establishes the importance of implicit theories of gender roles for understanding when gender differences emerge in societal attitudes. In addition to showing a mean gender difference in implicit theories, with men more likely to hold an entity theory and women more likely to hold an incremental theory, the current research suggests that entity theories trigger men's attempts to achieve a masculine identity and, as such, implicit theories of gender roles provide more of an interpretive framework for understanding the attitudes of men compared with women.

We examined the relationship between implicit gender role theories and system justification across four studies. Study 1 found that holding the belief that gender roles are fixed as opposed to malleable correlated with a range of gender-relevant attitudes and beliefs that bolster the status quo, and this was true for men and women alike. However, our experimental data suggest that manipulating gender role theory toward a fixed view uniquely causes men's gender system justification. Studies 2 through 4 used an established manipulation of implicit theories tailored to beliefs about gender roles to test their causal effect on the triggering of identity and system justifying motives in men. We found that men who adopted a fixed gender role theory identified more with being a man, and this in-group identification encouraged them to see the system as fair and to see themselves as possessing more desirable masculine characteristics. Conversely, instilling the belief that gender roles are malleable reduced men's identification with the male gender group and, in turn, minimized their defense of the status quo to the point where they were in agreement with women on this issue. For women, implicit gender role theories did not affect their system justification. Taken together, these findings establish the critical role of masculine identity motives in explaining the conditions under which men and women hold differing views on the legitimacy and fairness of gender relations in society.

Theoretical Implications

Although it is critical to understand why disadvantaged groups sometimes defend systems that discriminate against them (Jackman, 1994; Jost & Banaji, 1994; Jost & Kay, 2005), we embarked on the current research to consider the identity motives that drive advantaged group members' rationalization of the current system. System justification theory (Jost & Banaji, 1994) has been positioned as an alternative to theories emphasizing ego-based (Allport, 1958; Lippmann, 1922) and group-based (Tajfel, 1981) motives for exploiting disadvantaged group members. Because society organizes men and women into a hierarchy with men as advantaged group members and women as disadvantaged group members, how men and women reconcile these sometimes competing motives differs at times, as our research suggests.

For men, we find that a fixed gender role theory can trigger a set of mutually reinforcing motives at the level of ego, group, and system, leading them to become more identified with masculine traits relative to feminine traits, more identified with their male gender group, and, ultimately, more supportive of the current system. This offers another perspective of the dynamic and mutually reinforcing relationship underlying individual motives to see the social system as fair and just. Our findings suggest a mutually reinforcing relationship for men when it comes to evaluating the fairness of the gender system, with one motive driving another.

For women to justify the gender system requires that they sacrifice ego and group motives in favor of system motives. Because an immutable world implies that masculine characteristics will continue to be more highly valued than feminine characteristics, women's motive to justify the system may conflict with their motive to fit in. Whether they were exposed to a fixed versus malleable gender role theory did not influence women's identification with feminine characteristics, their female gender group or, as a result, their system justification. Overall, these findings support the notion that implicit gender role theories may be more tightly linked to system justification for men as dominant group members who have more to prove from an identity perspective if gender roles are static.

Our research adds to our knowledge of implicit theories by considering how they apply to social roles. Whereas social role theory (Eagly & Steffen, 1984) has long recognized that beliefs about gender roles in society shape attitudes and expectations, it has more often than not been contrasted with evolutionary and biological accounts of gender differences (Buss & Schmitt, 2011; Eagly & Wood, 1999). While these important debates ensue about whether gender differences reflect nature versus nurture, less attention has been paid to the downstream consequences of differences, regardless of their biological versus sociocultural origins. A notable exception is the work of Brescoll and colleagues (2013), which found that belief in immutability mediated the effects of system threats on the endorsement of biological explanations for gender differences. We have attempted to delve further into this relationship by viewing immutability through an implicit theories lens. We find evidence that immutability beliefs may do more than fulfill system justification needs: they may actually cause them.

While exposure to biological essentialist explanations for gender differences triggers men's system justification motive (Morton et al., 2009), our research shows that immutability alone is enough

to trigger the motivate to defend the status quo. We distinguish our work from this past research as well by showing that changing gender roles are not inherently threatening. While Morton and colleagues showed that men became more supportive of gender inequality, including discriminatory policies, when they were threatened by loss of social status attributable to societal change, this prior work confounded mutability with the framing of change in terms of status loss. In the present research, we isolated the effect of mutability by simply manipulating beliefs about whether change is possible without mentioning the implications for change on status relations between men and women. Our research did not find that men were threatened by the change implied by incremental theories; instead we found that fixed roles are constraining for men. By not focusing on women's rights or a need for more status but rather on the notion that gender does not have to be a limiting factor for anyone, the notion of malleable gender roles may actually relieve men of the burden of fulfilling masculine gender roles. Past work might have predicted opposite results- that men faced with changing gender roles would be more likely to defend the gender system as change threatens their status. Although more research is needed to draw conclusions, it is possible that incremental theories are able to introduce change to gender roles without men seeing it as a threat to their status. By dissociating social roles from gender and emphasizing flexibility in roles and traits for men and women, men may also see changing roles as an opportunity rather than a cost.

Limitations and Future Directions

Implicit theories might have important implications for gender inequalities in traditionally male-dominated domains like business, leadership, and STEM (science, technology, engineering, and mathematics) fields. Just as the endorsement of stereotypes about "brilliance," an attribute revered by entity theorists, predicts women's entry into male dominated professions (Leslie, Cimpian, Meyer, & Freeland, 2015), implicit theories of gender roles may steer men away from jobs traditionally occupied by women. By adopting incremental theories of gender roles, men may experience greater freedom and choice in exploring social roles that suit their idiosyncratic life circumstances. Interventions aimed at creating more malleable views of gender roles might help alleviate tension between the pursuit of career success while still meeting domestic role obligations, possibly by promoting openness to the idea of their own career sacrifice to contribute more substantially in the domestic sphere.

All of the experiments in our research used the identical essay manipulation of implicit gender role theories that was closely modeled on prior research. By temporarily making accessible a fixed versus malleable perspective, we could assess the causal effect of such beliefs on a range of outcomes, including attitudes and self-perception. Although we have demonstrated that implicit theories of gender roles can be temporarily altered via an essay espousing a particular view, we do not know what situational cues outside of the laboratory temporarily activate one theory versus the other. More research is needed to understand how implicit gender role theories are formed, both dispositionally and situationally. From a personality standpoint, Dweck (2006) has drawn a link between how individuals are praised for success, either in terms of process or outcome, and the implicit theories they adopt. To this

end, developmental research examining how parents shape the gender role theories of their children is needed. Whether parents approve of children's counterstereotypical behavior (i.e., a boy wearing pink) may send a powerful message about whether gender roles are fixed or malleable that becomes ingrained over time. Recent work suggesting the career aspirations of young girls rise to the degree that their fathers engage in housework (Croft, Schmader, Block, & Baron, 2014) suggests that exposure to egalitarian role models may lead an incremental theory of gender roles to take hold. Among adults, it is interesting to consider how romantic relationships shape implicit gender role theories. It may be that couples who overlap in their implicit gender role theories experience less relationship conflict compared with those who have conflicting theories. We also do not know whether couples converge over time in their belief in the immutability of gender roles. By introducing a new measure of this novel construct, we aim to stimulate future research that identifies a broader range of situational cues that send the message that gender roles are malleable, as doing so may increase the pace of progress to a more gender equitable society.

Another limitation of the current research is that we only examined the downstream consequences of implicit theories in terms of self-reported attitudes and self-perception. Future research is warranted to better understand whether implicit gender role theories have behavioral consequences, possibly influencing men's support for timely issues such as equal pay legislation and paid parental leave policies in the workplace. Given other recent research showing similar effects for attitudinal and behavioral measures of system justification (Kosakowska-Berezecka et al., 2016), we are optimistic that our results have important real world consequences, but this is an empirical question. Expanding our dependent measures to include willingness to donate to gendered causes, to vote in favor of a woman candidate, or to hire a woman employee, would be a worthwhile direction for future research. If holding a fixed gender role theory strengthens masculinity, as we have shown, then it may very well influence how men self-present and how they evaluate the fit of women for leadership or other traditionally masculine roles.

Conclusions

This research seeks greater understanding of the impact of implicit gender role theories for self-perception and system justification. Given the relationship between fixed gender role theories and system justification for men, this work suggests that a shift in the perception of gender roles from being static to malleable could allow for greater openness and creativity in debates surrounding the gendered organization of society. Although men and women both contribute to perpetuating the current gender system, men's position of status may allow their efforts to be especially impactful. By increasing understanding of the factors that contribute to men's system justification motives, we aim to identify ways to counteract them. We find that one reason why gender roles remain such a restrictive force in determining which social roles men in particular pursue is that a fixed gender role theory reinforces the status quo. By stressing the importance of belonging to the most desirable group in the social hierarchy, the idea that gender roles are fixed leads men to identify with masculine attributes and their gender

in-group, thus increasing their sense that the current state of relations between men and women in society is fair and just. By recognizing how implicit theories provide a lens through which the self and the social world are perceived, this research offers hope that, by instilling the belief that gender roles can change and are in fact changing, men and women are better positioned to set aside their differences to promote gender equality.

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Appendix

Essay Manipulation Used in Studies 2–4

[Incremental Essay]

Societal Gender Roles Are Changeable

Social roles refer to the expectations, responsibilities, and behaviors we adopt in certain situations. Given the importance of social roles to every day life, it is perhaps not surprising that a great deal of research has been conducted to identify the key determinants of the roles adopted by women and men within and across societies. While it used to be believed that sex-typed gender roles were a fixed feature of societies, experts in the field comparing various cultures across the globe now believe that how society divides labor between the sexes is a dynamic feature of societies that can change over time and across contexts.

In a recent paper (Smith & Wilson, 2011) summarizing a wide range of longitudinal studies that address this question it was determined that the vast majority of a society's division of labor between the sexes is due to environmental factors that can change over time. For example, geopolitical conditions, educational opportunities, access to healthcare, and institutional policies were determined to account for up to 88% of a society's division of labor between the sexes. About 10% of gender role divisions seem to be influenced by idiosyncratic preferences within families. This means that only about 2% of a society's division of labor between the sexes can be traced to stable gender characteristics.

Consistent with this view is a presentation given in July, 2012 at the International Gender Research Forum (IGRF) in Washington D.C. by Dr. Terry Batter, a Harvard Business School professor specializing in gender role research in the workplace. In his talk, Dr. Batter argued that "no society's gender role division is hard like a rock that cannot be changed. Only for some, greater effort and determination are needed to effect changes." He reported numerous large longitudinal studies showing that societies can mature and change how women and men divide up labor in the home and the workplace. He also reported research findings showing that even the gender roles of mature societies can be changed with enough effort. For example, in a recent study of senior-level government officials from societies around the world who engaged in intensive diversity training, 95% of their respective societies increased their flexibility in social role assignments between women and men by a noticeable amount in the 2-year period following the training. The bottom line is that a voluminous body of evidence indicates that the manner in which societies divide labor between the sexes is changeable.

[Entity Essay]

Societal Gender Roles, Like Plaster, Are Pretty Stable Over Time

Social roles refer to the expectations, responsibilities, and behaviors we adopt in certain situations. Given the importance of social roles to every day life, it is perhaps not surprising that a great deal of research has been conducted to identify the key determinants of the roles adopted by women and men within and across societies. While it used to be believed that how society divided labor between the sexes was a bundle of potentialities, each of which could be developed and customized, experts in the field now believe that societies possess a finite set of rather fixed sex-typed social role divisions.

In a recent paper (Smith & Wilson, 2011) summarizing a wide range of longitudinal studies that address this question it was determined that the vast majority of a society's division of labor between the sexes is due to personal factors that remain stable over time. For example, gender differences in intelligence, internal motivation, and preferences were shown to account for up to 88% of a society's gender roles. About 10% of gender role divisions seem to be determined by patterns of interactions set early in life with one's family. This means that the division of labor between the sexes may be increased or decreased by only about 2% per generation.

Consistent with this view is a presentation given in July, 2012 at the International Gender Research Forum (IGRF) in Washington D.C. by Dr. Terry Batter, a Harvard Business School professor specializing in gender role research in the workplace. In his talk, Dr. Batter argued that "in most societies, gender roles are set like plaster early in its founding and will never soften again." He reported numerous large longitudinal studies which show that societies "gain experience and develop, but they do so on the foundation of enduring divisions of labor between the sexes." For example, in a recent study of senior-level government officials from societies around the world who engaged in diversity training, 95% failed to modify social role assignments between women and men by a noticeable amount in the 2-year period following the training. The bottom line is that a voluminous body of evidence indicates that the manner in which societies assign roles to men and women is not changeable.

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