

# Real Men Don't Eat Quiche: Regulation of Gender-Expressive Choices by Men

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## Abstract

Everyday items are imbued with subtle yet pervasive gender associations. For instance, sour dairy products and products with rounded edges tend to be perceived as relatively feminine, whereas meat and products with sharp edges tend to be perceived as relatively masculine. In a series of studies, we find that men are more likely to choose gender-congruent options (masculine foods and angular-shaped items) when they have unconstrained time and attentional resources than when these resources are constrained. In contrast, women's choices tend to not be affected by time or attentional resource availability. Our findings suggest that men experience a conflict between their relatively intrinsic preferences and gender norms and that they tend to forgo their intrinsic preferences to conform to a masculine gender identity (when they have sufficient resources to incorporate gender norm information in their choices). Women, on the other hand, appear to be less concerned with making gender-congruent choices.

## Keywords

gender differences, gender norms, choice, self-regulation

Both informal experience and academic research reveal that everyday items are imbued with gender associations (e.g., Boroditsky, Schmidt, & Phillips, 2003; Grohman, 2009). It is commonly accepted, for instance, that pink-colored items are feminine whereas dark blue-colored items are masculine. Similarly, dolls and flowers are typically perceived as feminine whereas action figures and video games are typically perceived as masculine.

Other associations are just as pervasive, if less focal. For instance, Counihan and Kaplan (2004) have found that maleness and femaleness in all cultures are associated with specific foods and rules controlling their consumption. Even more subtle, the shape of objects (i.e., rounded vs. angular) has also been shown to be associated with gender (e.g., Franck & Rosen, 1949; Osgood, Suci, & Tannenbaum, 1957; Harkey, 1982; Van Rompay, Pruyn, & Tieke, 2009).

A question that naturally arises is how these pervasive gender associations affect individuals' decision making? Furthermore, do such associations affect the decision making of men and women differently? This research attempts to provide preliminary insight into these questions.

## Gender Differences in Sensitivity to Gender Norms

Research demonstrates that in addition to biological factors (e.g., Berenbaum & Snyder, 1995) societal and cultural norms have a powerful influence in molding identity and shaping behavior. Beginning as early as age 2, information about

gender-role norms becomes incorporated into one's self-concept (e.g., Martin, 1991, 1993; Martin, Wood, & Little, 1990; Thompson, 1975). Furthermore, throughout development individuals continuously learn social expectations about personality traits and behaviors that men and women should adopt and enact (e.g., Cross & Madson, 1997; Deaux & Major, 1987; Eagly, 1987; Wood, Christensen, Hebl, & Rothgerber, 1997). Whereas meeting gender expectations can lead to reward (e.g., Wood et al., 1997), research has shown that failure to meet these expectations often leads to negative psychological (e.g., Crocker & Major, 1989; Crocker, Major, & Steele, 1998; Major & O'Brien, 2005; Pleck, Sonenstein, & Ku, 1993) and economic (e.g., Crocker et al., 1998; Rudman 1998; Rudman & Glick, 1999, 2001) consequences because of the social stigma attached to gender-norm transgressions.

Although both men and women are likely to be judged less positively when failing to conform to gender-role stereotypes, research has found that male transgressors tend to be perceived more negatively than female transgressors do, regardless of the transgressor's age (e.g., Carter & McClosky, 1984; Costrich, Feinstein, Kidder, Maracek, & Pascale, 1975; Feinman, 1984; Jackson & Sullivan, 1990; Martin, 1990; McCreary, 1994;

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L. C. Moller, Hymel, & Rubin, 1992). For instance, parents (fathers, in particular) tend to reward boys more (relative to girls) for displaying gender-congruent forms of play and punish boys more severely (relative to girls) for gender-norm deviation (Langlois & Downs, 1980; Lytton & Romney, 1991). Furthermore, gay men have been perceived more negatively than lesbians have been in numerous domains (e.g., Herek, 1994, 2000). Moreover, related research has shown that the psychological consequences for gender-norm transgressions tend to be greater for men than for women (e.g., Aube & Koestner, 1992; O'Heron & Orlofsky, 1990).

The aforementioned literature suggests that the path of least resistance for many individual choices is to choose options that best conform to gender norms. This strategy would seem particularly pertinent for men because men should be more motivated than women to make gender-consistent choices to avoid the threats associated with gender-norm transgression.

### Choice Regulation in Accordance With Gender Norms

The notion that gender norms might influence men's choices is consistent with research showing that individuals often regulate their choices and behavior in accordance with norms, rules, and expectations. For instance, it has been shown that individuals regulate their choices and behavior to comply with an experimenter's expectations (A. Moller, Deci, & Ryan, 2006), to comply with the norm that one should behave in a nonprejudiced manner toward minority groups (Richeson & Trawalter, 2005), and to comply with high-level goals to maintain weight and eat healthily (e.g., Shiv & Fedorikhin, 1999; Ward & Mann, 2000). Of note, it has been argued that even when individuals comply with self-imposed goals, such as internalized demands to eat healthily, they often feel as if they are complying with coercive external rules because, unlike visceral desires, such high-level goals tend to be "less well integrated with the self" (A. Moller et al., 2006, p. 1025; see also Frederick, 2003; Trope & Fishbach, 2005).

However, self-regulation is costly both in terms of demanding processing resources (Aspinwall, 1998; Shiv, Fedorikhin, & Nowlis, 2005; Trope & Fishbach, 2005; Ward & Mann, 2000) and diminishing executive function on subsequent tasks (A. Moller et al., 2006; Richeson & Trawalter, 2005). To illustrate the former, Shiv and Fedorikhin (1999) asked experimental participants to choose between a healthy fruit salad and a chocolate cake subsequent to manipulating participants' cognitive resource availability (performed by having participants memorize either a 2-digit or a 7-digit number). They found that individuals were more likely to choose the healthy fruit salad over the chocolate cake when they had a relatively high level of processing resources available (i.e., had memorized a 2-digit number), which suggests that choosing the healthy option demanded resources (i.e., to incorporate information related to participants' high-level health goals in their decisions). In an example of diminished executive function following self-regulation, Richeson and Trawalter (2005) found that

Whites performed relatively poorly on a Stroop task after engaging in an interracial interaction in which participants regulated their behavior to avoid manifesting prejudice.

Similar to other situations in which individuals regulate their behavior and choices to conform to norms and rules, we posit that individuals will regulate their choices of gender-expressive items by selecting options that conform to gender norms. Thus, we contend that the availability of processing resources will influence the decision making of individuals such that they will tend to make more choices that are congruent with gender norms as the opportunity to include normative information in their decision making increases (i.e., as processing resources become sufficiently available). Furthermore, given the greater threat of larger sanctions for men (relative to women) for gender-norm transgressions, we posit that men will be more likely than women to make more gender norm congruent choices as processing resource availability increases. Likewise, we contend that making choices from choice sets involving items that vary in their feminine and masculine associations will tend to diminish men's executive function as a consequence of men regulating their choices toward more gender-congruent options.

We examine the proposition that men, more so than women, will tend to regulate their choices of mundane items to conform to gender norms in four experiments. Specifically, our first three experiments seek to provide evidence that men tend to regulate their choices of gender-expressive items by examining the effect of processing resource availability on choices of gender-congruent options by men and women (Experiments 1 and 2) and by examining the effect of making choices from choice sets with mixed-gender options on the executive function of men and women (Experiment 3). Experiment 4 seeks to illuminate individuals' motives for regulating their gender-expressive choices by examining how the motivation to maintain one's gender identity (manipulated by a threat versus affirmation to one's gender identity) affects choices of gender-congruent options.

### Experiment 1: Food Choice

The purpose of Experiment 1 was to test the hypothesis that resource availability affects gender-expressive choices. Specifically, Experiment 1 examined how gender associations of food items affect the choices of men and women.

As mentioned above, research has shown that different food items are associated with gender (Counihan & Kaplan, 2004). Meat, alcohol, and hearty portion sizes are typically associated with masculinity, whereas vegetables, fruit, fish, and sour dairy products (e.g., yogurt) are associated with femininity (Jensen & Holm, 1999; Sellaeg & Chapman, 2008; Sobal, 2005; White & Dahl, 2006). Given the strong gender associations that food elicits, this domain is promising for examining the role of processing resources in gender choice.

### Method

Participants were 163 undergraduates (51 males, 112 females). The experiment had a 2 (gender: male and female)  $\times$  2

(resource availability: high and low) between-subjects design. Participants made 16 choices from pairs of food items descriptively listed on a menu (see Table 1). For each pair, participants chose the food option preferred. Participants were randomly assigned to complete this task with either high or low resource availability. Time constraints were used to operationalize resource availability (e.g., Kruglanski & Freund, 1983; Sanbonmatsu & Fazio, 1990). Specifically, those assigned to the low resource-availability condition were given 10 seconds to make a choice before the next pair would automatically appear. Participants in the high resource-availability condition were given as much time as they wanted to make each choice.

Each pair consisted of a masculine and a feminine dish. Gender associations were manipulated via ingredients listed (e.g., a masculine dish might contain gravy whereas a feminine dish might contain red wine sauce), food descriptions (e.g., a masculine dish might be described as “hearty” whereas a feminine dish might be described as “luscious”) and name of dish (e.g., “Western Salad” vs. “Nature Salad”). Pretesting confirmed that our dish manipulations were effective (i.e., both male and female pretest subjects rated our masculine dishes as more masculine than our feminine dishes). Furthermore, to preclude effects of resource availability on choices of healthy versus less healthy options, we paired items together that differed in their gender associations but that were similar in their perceived healthiness (e.g., “Rutherford Ribeye” and “Filet Paulette”). Moreover, participants were asked to assume that the nutritional content for each item within a pair were roughly equivalent.

## Results

Our dependent variable was the share of feminine dishes chosen by each participant (e.g., if a participant chose eight feminine and eight masculine dishes, the participant’s choice share of feminine dishes was 50%). This choice share was analyzed in a 2 (participant gender: male and female)  $\times$  2 (resource availability: high and low) univariate analysis of variance (ANOVA).

The main effect of gender was significant,  $F(1, 162) = 23.83, p < .001, d = .87$ , indicating that those food items containing feminine features were chosen, on average, more by females ( $M = 63.6\%, SD = 19\%$ ) than by males ( $M = 45.3\%, SD = 23\%$ ). As hypothesized, this main effect was qualified by a significant Gender  $\times$  Resources Available interaction,  $F(1, 162) = 6.14, p = .014$ . As shown in Figure 1, males in the high resource-availability condition ( $M = 37.9\%, SD = 19\%$ ) chose significantly fewer feminine dishes than did males in the low resource-availability condition ( $M = 55.9\%, SD = 24\%$ ),  $F(1, 160) = 13.51, p < .001, d = .83$ . In contrast, females in the high ( $M = 63\%, SD = 18\%$ ) and low ( $M = 64.1\%, SD = 21\%$ ) resource-availability conditions did not differ in their choices  $F(1, 160) = 0.05, p = .821, d = .06$ .

## Discussion

The main finding of Experiment 1 was that the proportion of gender-congruent choices increased as more processing

resources were available for men but not for women. That is, whereas men chose a greater share of dishes with masculine features when processing resources were more available, women’s choices remained stable across resource conditions. This suggests that men (more so than women) use available processing resources to regulate their choices in a manner conforming to gender norms.

In our second experiment, we sought to extend the findings of Experiment 1 to a context with more subtle gender associations. Specifically, building on research showing that objects with angled edges tend to be perceived as masculine whereas objects with rounded edges tend to be perceived as feminine (e.g., Franck & Rosen, 1949; Harkey, 1982; Osgood et al., 1957; Van Rompay et al., 2009), Experiment 2 examined how the shape of products influence how men and women make choices.

## Experiment 2: Product Shape

The purpose of Experiment 2 was to further explore the role of processing resources in gender choice. Furthermore, distraction (e.g., Petty, Wells, & Brock, 1976) rather than time constraints operationalized the availability of processing resources.

## Method

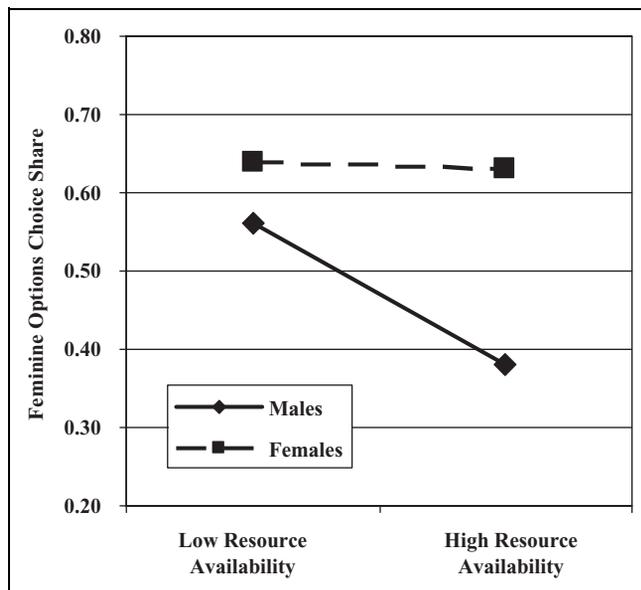
Participants were 274 undergraduates (117 males, 157 females). The experiment had a 2 (gender: male and female)  $\times$  2 (resources available: high and low) between-subjects design. Under the guise that the experiment was intended to examine how well people performed tasks that involved different senses, participants concurrently completed both a visual and listening task. For the visual task, participants viewed a series of two products side by side from 10 different product categories and chose the preferred item from each pair. Each pair consisted of an option with predominantly rounded features and an option with predominantly angled features (see Appendix). Pretesting confirmed that both male and female participants judged the angular-shaped products to be more masculine than the round-shaped products. These judgments did not differ by gender.

For the listening task, subjects were told that a song (“Here It Goes Again” by Ok Go) would be playing in the background while the visual task took place. This task served as a manipulation of resource availability. Depending on random assignment, subjects either listened (high resource availability) or listened and counted the number of times the word “goes” was sung (low resource availability) while making their product choices. Upon the song’s completion, subjects in the low resource-availability condition recorded the number of times the word “goes” was sung. To ensure that these subjects were sufficiently motivated to complete both tasks, subjects whose counts were within 5 of the actual number (33) were entered into a raffle for a \$25 gift certificate. Subjects were given 3.5 minutes to complete both tasks.

**Table 1.** Experiment 1 Stimuli: Menu Options With Descriptions

Set	Menu Item	Description
Set 1	*Key Lime Margarita Chicken Jackson's Smoked Chicken	Chicken breast, grilled and served over Spanish rice with fresh avocado pico de gallo and Key lime aioli Hickory smoked, marinated chicken breast served with a side of homemade coleslaw
Set 2	*Grilled Raspberry Chicken Pit Rotisserie Chicken	Fresh grilled chicken finished with fresh sage, cherry peppers, and the house raspberry sauce; served with a side of garden vegetables Chicken, slow cooked to perfection in our pit, seasoned with our Special Blended Spices, served with a side of Boston baked beans
Set 3	Pork Tenderloin Oppolusas	Blackened pork tenderloin medallions over a Cajun andouille sausage hash with sweet peppers, potatoes, and onions topped with a roasted garlic sauce
Set 4	*Lemongrass Pork Tenderloin *Martha's Vineyard Salad	Pork Tenderloin with fresh herbs and rosemary prepared on a bed of lemongrass Mixed baby greens and fresh spinach with toasted pine nuts, dried cranberries, cucumber, red onion, and a warm Vermont goat cheese crouton with a balsamic vinaigrette
Set 5	D'Angelo Salad Antipasto Salad	Crisp romaine and iceberg lettuce, tomatoes, our special house dressing, chopped egg, and topped with real bacon Genoa salami, pepperoni, provolone cheese, fresh mozzarella, mortadella ham, romaine lettuce, and fresh vegetables served with our house balsamic vinaigrette
Set 6	*Mediterranean Salad Chef Salad	Romaine lettuce, garden vegetables, pine nuts, sun-dried tomatoes, artichoke hearts, and Gorgonzola cheese served with a balsamic house dressing Premium ham, oven roasted turkey breast, Swiss, cheddar, tomatoes, and hard-boiled egg slices on mixed salad greens
Set 7	*Chicken Pasta Salad Western Salad *Nature Salad	Grilled chicken and penne pasta tossed with romaine lettuce, kalamata olives, and garden vegetables tossed in a homemade pesto sauce Chunks of barbecued chicken with shredded American cheese served on greens with a side of Ranch dressing Organic field greens, grapes, chicken breast, feta cheese, walnuts, dried cranberries, pumpkin seeds, and organic apples; served with Leo's balsamic vinaigrette
Set 8	*Roma Spaghetti	Spaghetti with sundried tomatoes, fresh basil, extra virgin olive oil and garlic
Set 9	Spaghetti With Homemade Meatballs *Applewood Chicken Penne Spicy Italian Penne	Spaghetti topped with hearty marinara or meat sauce served with big homemade Italian meatballs Applewood smoked chicken, sun-dried tomatoes with a walnut cream sauce Ground spicy Italian sausage, tomato, and roasted garlic oil
Set 10	*Tuscan Chicken Pasta Three-Cheese Chicken Parmesan	Sautéed chicken breast over angel hair pasta with a red wine sauce, parsley, herbs, tomatoes, and scallions Sautéed chicken breast coated with Italian breadcrumbs, topped with marinara sauce and melted mozzarella, provolone, and Gorgonzola cheese served over spaghetti
Set 11	Grilled Blackened Porterhouse Steak	Choice Porterhouse cut with peppercorn red wine reduction, caramelized onion mashed potatoes, and grilled marinated summer vegetables
Set 12	*Vitello Carciofi and Asparagus *Filet Paulette	Beef medallions sautéed with asparagus and artichoke in a light demi-glace sauce Tender filet mignon lightly coated with pepper sautéed in a butter cream sauce with fresh julienne tomato, onion, and bell pepper
Set 13	Rutherford Ribeye *Greenwich Village Pizza Italian Works Pizza	Aged, Black Angus beef, rubbed with Italian herbs and spices, flame grilled, and topped with a garlic brown butter Bonnie Blue Farm feta, Gorgonzola, and Asiago cheese with basil walnut pesto Pepperoni, sausage, Canadian bacon, onions, bell peppers, and mozzarella cheese
Set 14	Damon's Specialty Pizza *San Francisco Pizza	Ground hamburger, red onions, roasted peppers, and mozzarella cheese Sun-dried tomatoes, ricotta cheese, and roasted garlic
Set 15	*Cloud Nine Ice Cream	Premium vanilla and chocolate ice cream with a cherry and almond center enrobed in fine chocolate and served with walnuts and fresh whipped cream
Set 16	Chunky Fudge Cake Ice Cream *Very Berry Cheesecake	Vanilla ice cream, smothered in hot fudge with chunks of chocolate fudge cake, whipped cream, and peanuts A lighter, fluffier version of its New York cousin, our cheesecake is nestled in a vanilla wafer crust and garnished with fresh, sweet berries and a luscious strawberry sauce, topped with a sugar crust
	Peanut Butter Cheesecake	A filling cheesecake swirled with caramel and peanut butter

\*Indicates feminine option.



**Figure 1.** Proportion of feminine foods chosen by resource availability and gender (Experiment 1)

## Results

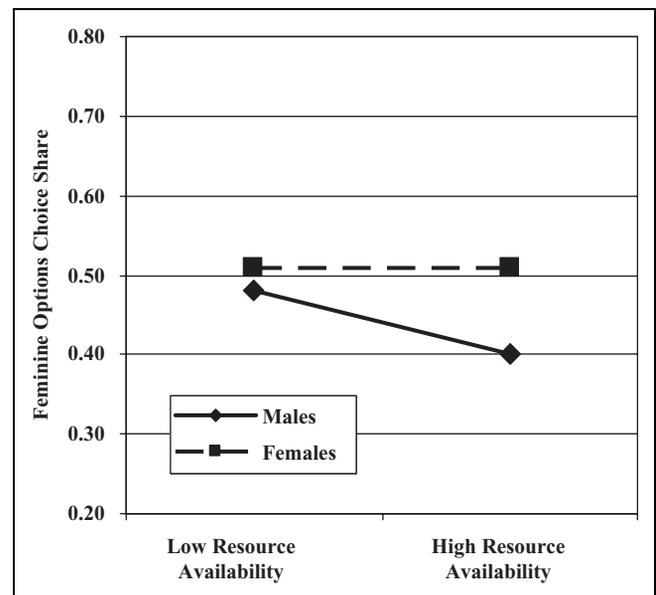
Our dependent variable was the share of feminine (i.e., rounded) items chosen by each participant. This choice share was analyzed in a 2 (gender: male and female)  $\times$  2 (resource availability: high and low) univariate ANOVA.

The main effect of gender was significant,  $F(1, 273) = 13.84, p < .001, d = .47$ , indicating that rounded products were chosen, on average, more by females ( $M = 51.3\%$ ,  $SD = 16\%$ ) than by males ( $M = 43.5\%$ ,  $SD = 17\%$ ). As hypothesized, this main effect was qualified by a significant Gender  $\times$  Resource Availability interaction,  $F(1, 273) = 4.05, p = .045$ . As shown in Figure 2, males in the high resource-availability condition ( $M = 40\%$ ,  $SD = 16\%$ ) chose fewer rounded products than did males in the low resource-availability condition ( $M = 47.7\%$ ,  $SD = 18\%$ ),  $F(1, 273) = 7.72, p = .006, d = .45$ . In contrast, females in the high ( $M = 51.4\%$ ,  $SD = 14\%$ ) and low ( $M = 51.1\%$ ,  $SD = 17\%$ ) resource-availability conditions did not differ in their choices,  $F(1, 273) = 0.11, p = .743, d = .02$ .

## Discussion

The main finding of the first two experiments is that males, but not females, tend to make more gender-congruent choices as processing resources become available. This tendency arose in two distinct domains, providing converging evidence for the proposition that men tend to regulate their choices in a gender-congruent manner more so than women.

Experiment 3 was intended to provide additional evidence for this proposition by examining how making choices among gender-expressive options affects subsequent executive function. Research on ego depletion has shown that regulating behavior tends to lead to a depletion effect (i.e., less persistence and/or poorer performance on subsequent tasks; e.g.,



**Figure 2.** Proportion of feminine products chosen by resource availability and gender (Experiment 2)

Baumeister, Bratslavsky, Muraven, & Tice, 1998; A. Moller et al., 2006). Thus, it is hypothesized that if men actively attempt to regulate their choices of gender-congruent and gender-incongruent options, then male cognitive performance should subsequently suffer following choices from mixed-gender choice sets (relative to all-masculine choice sets). Conversely, if women tend to not regulate their choices of gender-associated options, then subsequent female cognitive performance should not be affected by the type of gender options that a choice set contains.

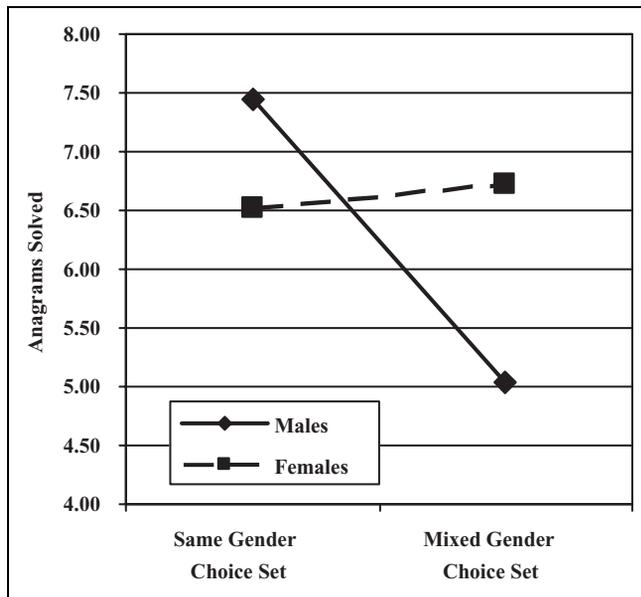
## Experiment 3: Resource Depletion

The purpose of Experiment 3 was to provide additional evidence that men, more so than women, regulate their choices of gender-expressive items. It is proposed that this can be tested by examining the effect of choices on resource depletion for the different sexes. In addition, a more general population than that studied in the previous two experiments was used to explore these effects.

## Method

Participants were 151 Americans recruited from a social networking website (57 males, 94 females) with an average age of 25.2 years ( $SD = 4.0$  years).

Participants were informed that the experimental session consisted of several experiments from different experimenters but that the general purpose of each was to investigate how people make choices. In actuality, the experiment featured two choice tasks and a task to measure depletion. Similar to Experiments 1 and 2, the choice tasks consisted of choosing between products and food items on a menu. Unlike the previous experiments, however, participants were randomly assigned to make



**Figure 3.** Anagrams solved after making choices from mixed versus same-gender choice sets by gender (Experiment 3)

choices from either same-gender choice sets (i.e., males [females] made choices between paired masculine [feminine] items) or mixed-gender choice sets (i.e., one masculine and one feminine item within each pair).

To preclude the possibility that any observed effect might be due to differences in the degree of difficulty between making choices from the masculine and mixed-choice sets than between making choices from the feminine and mixed-choice sets, we also included a condition in which 45 women made choices from an all-masculine set. We hypothesized that women making choices from the masculine set would exhibit a similar level of depletion as would women making choices from the feminine set, thereby ruling out the possibility that choosing from the feminine set substantially differed in difficulty from choosing from the masculine set.

Following the choice tasks, participants were given 5 minutes to solve up to 13 anagrams. This type of manipulation has previously served as a successful means to acquire a measure of ego depletion (Baumeister et al., 1998, Experiment 2).

## Results

First, consistent with the notion that men were more likely to choose masculine items, men chose a higher proportion of masculine items than did females (55% vs. 45%) in the mixed-choice sets,  $F(1, 55) = 4.20, p = .045$ .

The amount of anagrams solved was analyzed in a 2 (gender: male and female)  $\times$  2 (choice set: same and mixed gender) univariate ANOVA. Consistent with our hypothesis that males but not females would be particularly depleted by choosing between masculine and feminine options, the interaction between choice sets and gender was significant,  $F(1, 150) = 4.08, p = .045$ . As predicted, males who received

mixed-gender choice sets ( $M = 5.04, SD = 3.86$ ) solved significantly fewer anagrams than did males who received masculine choice sets ( $M = 7.45, SD = 3.68$ ),  $F(1, 150) = 5.66, p = .019, d = .64$  (see Figure 3). Furthermore, there was no difference in the number of anagrams solved for females who received mixed-gender choice sets ( $M = 6.73, SD = 3.96$ ) and females who received feminine choice sets ( $M = 6.52, SD = 3.68$ ),  $F(1, 150) = 0.02, p = .897, d = .05$ . An additional analysis indicated that females who received masculine choice sets ( $M = 6.60, SD = 3.12$ ) did not differ from females in the other choice set conditions, thereby ruling out the possibility that it was more difficult to choose from the masculine choice set than the feminine choice set.

## Discussion

The main finding of Experiment 3 was that males making choices from mixed choice sets exhibited greater resource depletion (i.e., solved fewer anagrams) than did men making choices from masculine choice sets. Conversely, females exhibited the same level of resource depletion (i.e., solved the same number of anagrams) across choice set conditions. These findings are consistent with our account that men regulate their choices in a manner conforming to their gender identity. In contrast, women appear to be less concerned about regulating their choices on a gender-identity basis and, hence, do not exhibit diminished executive function subsequent to making choices between items that differed in gender associations.

Furthermore, the finding that men's ability to solve anagrams is impaired following mixed-gender choice sets but women's ability cannot be explained by a general difference in men's and women's ability to process food and shape information. This is because, absent gender-identity-maintenance concerns, there is no reason to believe that mixed-gender choice sets are inherently more difficult to process than are same-gender choice sets.

## Experiment 4: Threat Versus Affirmation of Gender Identity

To gain additional insight into why making gender-expressive choices is cognitively taxing for men, Experiment 4 examined the effects of resource availability on choices of gender-expressive food options when the choices followed either an affirmation or threat to one's gender identity. Research has found that a threat to men's gender identity leads to derogation of females and greater explicit identification with a masculine gender identity (Maass, Cadinu, Guarnieri, & Grasselli, 2003; Schmitt & Branscombe, 2001). We hypothesized that men would similarly be more likely to make gender-congruent choices after a threat to their gender identity than after an affirmation of their gender identity because threat (relative to affirmation) would enhance the need to maintain their masculine gender identity through their choices. However, in line with our previous findings, we predicted that

**Table 2.** Experiment 4 Stimuli: Menu Options With Descriptions

Set	Menu Item	Description
Set 1	*Café Latte	Espresso with steamed milk and foam
	Cup of "Joe" (Coffee)	Fresh-brewed cup of coffee
Set 2	*Diet Coke	A diet version of Coca-Cola Classic
	Coke Zero	A zero-calorie version of Coca-Cola Classic
Set 3	Irish Breakfast Tea	Hearty, malty black tea noted for its strength, body, and color
	*Linden Flower Tea	<i>Tilleul</i> in French, this herbal tea is light and buttery with a soft aroma and honey-like sweetness
Set 4	Classic Martini	Gin, Vodka, and Vermouth served with an olive
	*Cosmopolitan	Vodka, Cointreau, cranberry juice, and lime juice
Set 5	*Cloud Nine Ice Cream	Premium vanilla and chocolate ice cream with a cherry and almond center enrobed in fine chocolate and served with walnuts and fresh whipped cream
	Chunky Fudge Cake Ice Cream	Vanilla ice cream smothered in hot fudge with chunks of chocolate fudge cake, whipped cream, and peanuts
Set 6	*Very Berry Cheesecake	A lighter, fluffier version of its New York cousin, our cheesecake is nestled in a vanilla wafer crust and garnished with fresh, sweet berries and a luscious strawberry sauce, topped with a sugar crust
	Peanut Butter Cheesecake	A filling cheesecake swirled with caramel and peanut butter

\*Indicates feminine option.

this effect would be attenuated as resources became restricted. Moreover, based on the findings of the first three experiments, we did not expect to find an effect of gender affirmation or threat on women's choices.

## Method

Experiment 4 had a 2 (gender identity: affirmation and threat)  $\times$  2 (resources available: high and low)  $\times$  2 (gender: male and female) design, where gender identity and resources available were manipulated between subjects. Participants were 387 individuals (100 males with a mean age of 35 and 287 females with a mean age of 37) recruited online from throughout the United States. Participants were randomly assigned to conditions.

As part of a series of studies about consumer behavior, participants listed either four things that they do with their (platonic) girl friends that they would not do with their (platonic) guy friends or to list four things that they do with their (platonic) guy friends that they would not do with their (platonic) girl friends. Pretesting confirmed that the former manipulation served as a threat to gender identity for males (i.e., males expressed feeling less masculine after the manipulation) and an affirmation of gender identity for females; this was reversed for the latter manipulation.

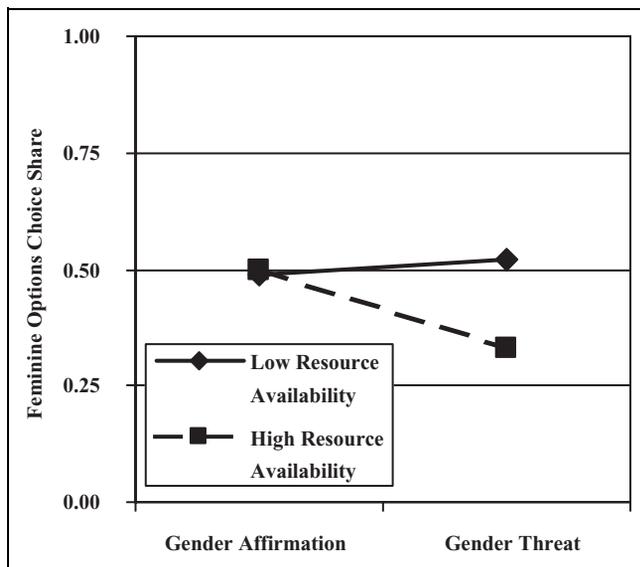
After completing this task, participants took part in an ostensibly unrelated experiment in which they were to examine people's dessert and beverage preferences. Participants were given a description of two desserts or drinks on a menu and asked to choose the more preferred option (see Table 2). The task consisted of six choice sets containing items that pretesting indicated had different gender associations. For instance, participants chose between a Café Latte, described as an espresso with steamed milk and foam, or a Cup of "Joe," described as a fresh brewed cup of coffee.

Participants were told to assume that items in a choice set were approximately the same portion size. Similar to Experiment 1, participants in the low resource-availability conditions were provided 10 seconds to make their choices, whereas participants in the high resource-availability conditions were provided as much time as they wanted. No participants indicated that they believed the ostensibly separate studies were related or inferred the purpose of the experiment.

## Results

Our dependent variable was the share of feminine items chosen by each participant. Consistent with our categorization of items as masculine or feminine, there was a main effect of gender on choice, with men tending to choose fewer feminine items ( $M = 42\%$ ,  $SD = 0.20$ ) than females did ( $M = 54\%$ ,  $SD = 0.20$ ),  $t(385) = 4.94$ ,  $p < .001$ ,  $d = .60$ .

As predicted, there was a significant three-way Gender Identity  $\times$  Resources Available  $\times$  Gender interaction  $F(1, 379) = 5.57$ ,  $p = .019$ . To better understand this interaction, we look at the results separately for males and females. As hypothesized, among males, there was a significant Gender Identity  $\times$  Resources Available interaction,  $F(1, 96) = 6.53$ ,  $p = .012$ . Decomposing this interaction revealed that with high resource availability men were more likely to choose feminine items following an affirmation of their gender identity ( $M = 50\%$ ,  $SD = 17\%$ ) than following a threat to their gender identity ( $M = 33\%$ ,  $SD = 20\%$ ),  $t(52) = 3.22$ ,  $p < .002$ ,  $d = .91$  (see Figure 4). As hypothesized, this effect was not observed in the low resource-availability conditions ( $M = 52\%$ ,  $SD = 23\%$  vs.  $M = 49\%$ ,  $SD = 18\%$ ,  $t < 1$ ,  $d = .15$ ). Furthermore, as predicted, females did not differ in the choices of desserts and beverages across any conditions ( $ts < 1$ ).



**Figure 4.** Proportion of feminine food choice among men by affirmation versus threat and resource availability (Experiment 4)

## Discussion

The main finding of Experiment 4 was that the effect of threatening relative to affirming gender identity resulted in men choosing more masculine dessert and beverage items. Consistent with our theorizing, this effect was attenuated when men had few resources available, suggesting that men attempt to regulate their choices to maintain their gender identity when sufficient resources are available. Consistent with the findings of our first three experiments, we did not observe an effect of threatening versus affirming gender identity among women's choices. This provides additional support to the notion that women are less concerned than men are with gender identity maintenance in the context of self-expressive choices.

## General Discussion

Across four studies, we find that men's but not women's choices of gender expressive items tend to be influenced by processing resource availability. In Experiments 1 and 2, men chose significantly more masculine options as processing resources became more available. Women's choices, on the other hand, were not affected by processing resource availability. Experiment 3 suggests that men (but not women) tend to regulate their choices in accordance to gender norms. This was illustrated by the greater depletion that men (but not women) exhibited following choices made between masculine and feminine options relative to choices made between sets containing only masculine options. Women's performance on the depletion measure (i.e., anagram task) was not affected by the type of sets they previously chose from. Together, this suggests that varying items' gender associations tends to influence choice regulation within men but not within women.

Experiment 4 provided more explicit support for the contention that the effect of resource availability on men's choices of gender-expressive items was a consequence of men's need to maintain a masculine gender identity. In particular, men's choices of gender-expressive food items were more likely to be affected by processing resource availability when their masculine gender identity was threatened than when it was affirmed. No effect of threatening versus affirming gender identity was observed for women.

Despite vast literatures on choice and on gender, little research has examined the impact of gender on choice. The main finding of research on choice that incorporates gender as a moderator is that individuals make gender-congruent choices (e.g., Dolich, 1969; Fry, 1971). To illustrate, Fry (1971) found that men are more likely to choose more masculine and women are more likely to choose more feminine cigarette brands.

Our findings contribute to the literature on gender and choice in two main respects. First, we find that men are more likely than are women to regulate their choices of gender-expressive items. Prior research has suggested that diverging from gender norms may be especially costly for men relative to women in terms of the self-concept. Our findings support this notion by illustrating that men but not women tend to be concerned with their gender identity when making self-expressive choices of mundane, everyday items.

Second, our finding that choosing gender-congruent options can be costly for men in terms of cognitive resources provides insights into men's motivations for choosing gender-congruent options. Prior research has viewed the choice of gender-congruent options as a form of positive self-expression (Fournier, 1998; Freimuth & Hornstein, 1982; Sirgy, 1982). However, research suggests that self-regulation tends to be costly only when it feels more externally enforced (e.g., as in a need to conform to rigid or coercive internalized demands) rather than when arising from more intrinsic sources of motivation (A. Moller et al., 2006; Trope & Fishbach, 2005). Thus, our finding that regulation of gender-expressive choices is costly for men suggests that the choice of gender-congruent options should not be viewed merely as a form of positive self-expression but that the choice of such options might also be a means of conformity.

## Authors' Note

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## Declaration of Conflicting Interests

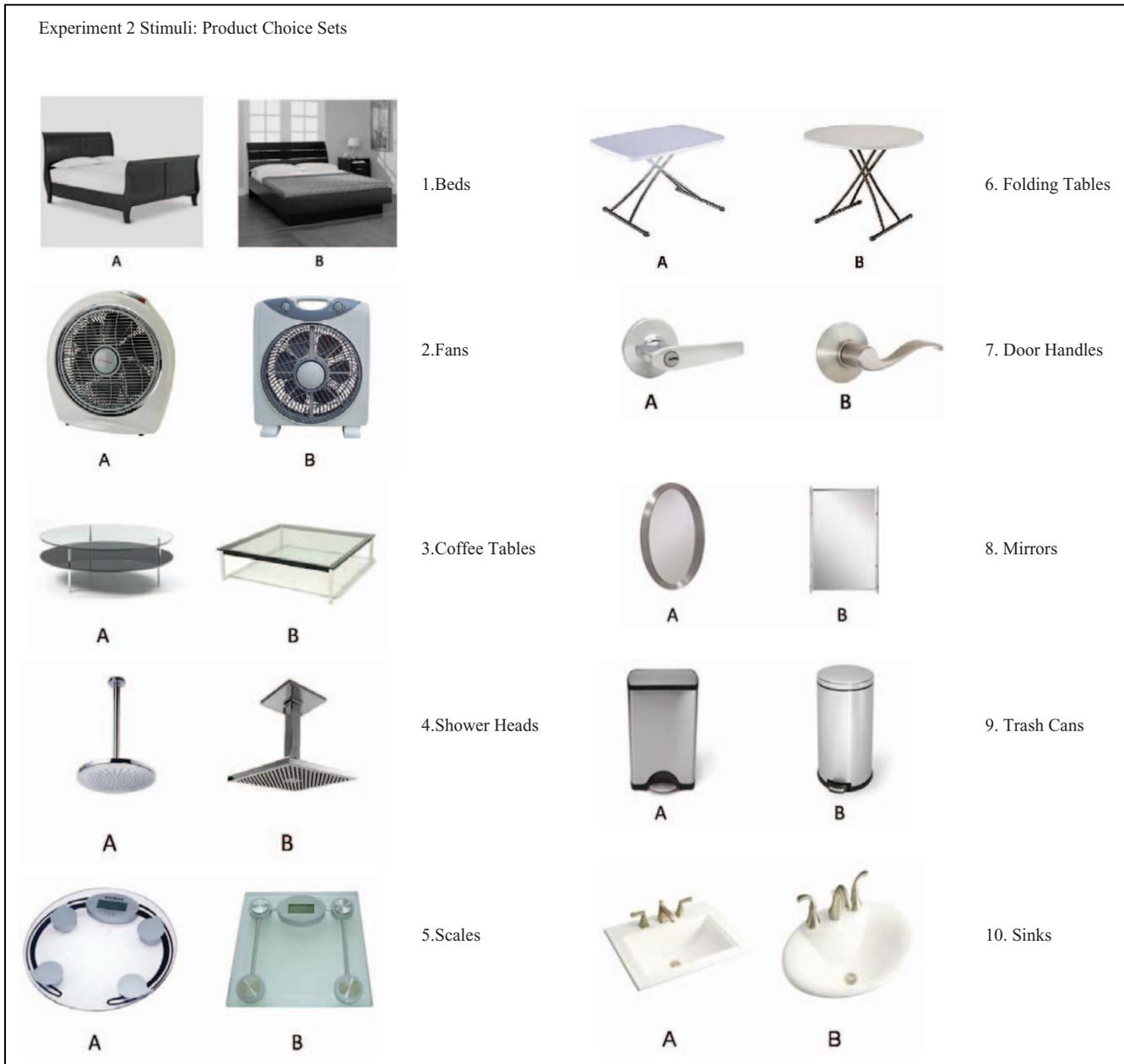
The author(s) declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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## Appendix

### Experiment 2 stimuli



## References

- Aspinwall, L.G. (1998). Rethinking the role of positive affect in self-regulation. *Motivation and Emotion, 22*, 1-32. doi: 10.1023/A:1023080224401.
- Aube, J., & Koestner, R. (1992). Gender characteristics and adjustment: A longitudinal study. *Journal of Personality and Social Psychology, 63*, 485-493. doi: 10.1037/0022-3514.63.3.485.
- Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology, 74*, 1252-1265. doi: 10.1037/0022-3514.74.5.1252.
- Berenbaum, S. A., & Snyder, E. (1995). Early hormonal influences on childhood sex-typed activity and playmate preferences: implications for the development of sexual orientation. *Developmental Psychology, 31*, 31-42. doi: 10.1037/0012-1649.31.1.31.
- Boroditsky, L., Schmidt, L., & Phillips, W. (2003). Sex, syntax, and semantics. In D. Gentner & S. Goldin-Meadow (Eds.), *Language in mind: Advances in the study of language and cognition* (pp. 59-80). Cambridge, MA: MIT Press.
- Carter, D. B., & McCloskey, L. A. (1984). Peers and the maintenance of sex-typed behavior: The development of children's conceptions of cross-gender behavior in their peers. *Social Cognition, 2*, 294-314.

- Costrich, N., Feinstein, J., Kidder, L., Marecek, J., & Pascale, L. (1975). When stereotypes hurt: Three studies of penalties for sex-role reversals. *Journal of Experimental Social Psychology, 11*, 520-530. doi: 10.1016/0022-1031(75)90003-7.
- Counihan, C. M., & Kaplan, S. L. (2004). *Food and gender: Identity and power*. London, UK: Routledge.
- Crocker, J., & Major, B. (1989). Social stigma and self-esteem: The self-protective properties of stigma. *Psychological Review, 96*, 608-630. doi: 10.1037/0033-295X.96.4.608.
- Crocker, J., Major, B., & Steele, C. (1998). Social stigma. In S. Fiske, D. Gilbert & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 504-553). Boston, MA: McGraw-Hill.
- Cross, S. E., & Madson, L. (1997). Models of the self: Self-construals and gender. *Psychological Bulletin, 122*, 5-37. doi: 10.1037/0033-2909.122.1.5.
- Deaux, K., & Major, B. (1987). Putting gender into context: An interactive model of gender-related behavior. *Psychological Review, 94*, 369-389. doi: 10.1037/0033-295X.94.3.369.
- Dolich, I. J. (1969). Congruence relationships between self-images and product brands. *Journal of Marketing Research, 6*, 80-84. doi: 10.2307/3150001.
- Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Hillsdale, NJ: Erlbaum.
- Feinman, S. (1984). A status theory evaluation of sex-role and age-role behavior. *Sex Roles, 10*, 445-456. doi: 10.1007/BF00287561.
- Fournier, S. (1998). Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research, 24*, 343-373. doi: 10.1086/209515.
- Franck, K., & Rosen, E. (1949). A projective test of masculinity-femininity. *Journal of Consulting Psychology, 13*, 247-256. doi: 10.1037/h0057315.
- Frederick, S. (2003). *Time preference and personal identity*. New York, NY: Russell Sage.
- Freimuth, M. J., & Hornstein, G. A. (1982). A critical examination of the concept of gender. *Sex Roles, 8*, 515-532. doi: 10.1007/BF00287716.
- Fry, J. N. (1971). Personality variables and cigarette brand choice. *Journal of Marketing Research, 8*, 298-304. doi: 10.2307/3149566.
- Grohman, B. (2009). Gender dimensions of brand personality. *Journal of Marketing Research, 46*, 105-119. doi: 10.1509/jmkr.46.1.105.
- Harkey, N. J. (1982). The Franck Drawing Completion Test: A tool for research in sex-role identification. *Journal of Personality Assessment, 46*, 32-43. doi: 10.1207/s15327752jpa4601\_7.
- Herek, G. M. (1994). Assessing attitudes toward lesbians and gay men: A review of empirical research with the ATLG scale. In B. Greene & G. M. Herek (Eds.), *Lesbian and gay psychology: Theory, research, and clinical applications* (pp. 206-228). Thousand Oaks, CA: Sage.
- Herek, G. M. (2000). The psychology of sexual prejudice. *Current Directions in Psychological Science, 9*, 19-22. doi: 10.1111/1467-8721.00051.
- Jackson, L. A., & Sullivan, L. A. (1990). Perceptions of multiple role participants. *Social Psychology Quarterly, 54*, 274-282. doi: 10.2307/2786965.
- Jensen, K. O., & Holm, L. (1999). Preferences, quantities and concerns: Socio-cultural perspectives on the gendered consumption of foods. *European Journal of Clinical Nutrition, 3*, 351-359. Retrieved from <http://www.nature.com/ejcn/journal/v53/n5/index.html>
- Kruglanski, A. W., & Freund, T. (1983). The freezing and unfreezing of lay-inferences: Effects on impression primacy, ethnic stereotyping, and numerical anchoring. *Journal of Experimental Social Psychology, 19*, 448-468. doi: 10.1016/0022-1031(83)90022-7.
- Langlois, J. H., & Downs, A. C. (1980). Mothers, fathers, and peers as socialization agents of sex-typed play behaviors in young children. *Child Development, 51*, 1237-1247. doi: 10.2307/1129566.
- Lytton, H., & Romney, D. M. (1991). Parents' differential socialization of boys and girls: A meta-analysis. *Psychological Bulletin, 109*, 267-296. doi: 10.1037/0033-2909.109.2.267.
- Maass, A., Cadinu, M., Guarnieri, G., & Grasselli, A. (2003). Sexual harassment under social identity threat: The computer harassment paradigm. *Journal of Personality and Social Psychology, 85*, 853-870. doi: 10.1037/0022-3514.85.5.853.
- Major, B., & O'Brien, L. T. (2005). The social psychology of stigma. *Annual Review of Psychology, 56*, 393-421. doi: 10.1146/annurev.psych.56.091103.070137.
- Martin, C. L. (1990). Attitudes and expectations about children with nontraditional and traditional gender roles. *Sex Roles, 22*, 151-165. doi: 10.1007/BF00288188.
- Martin, C. L. (1991). The role of cognition in understanding gender effects. In H. Reese (Ed.), *Advances in child development and behavior* (pp. 113-147). San Diego, CA: Academic Press.
- Martin, C. L. (1993). New directions for investigations of children's gender knowledge. *Developmental Review, 13*, 184-204. doi: 10.1006/drev.1993.1008.
- Martin, C. L., Wood, C. H., & Little, J. K. (1990). The development of gender stereotype components. *Child Development, 61*, 1891-1904. doi: 10.1111/1467-8624.ep9103040647.
- McCreary, D. R. (1994). The male role and avoiding femininity. *Sex Roles, 31*, 517-530. doi: 10.1007/BF01544277.
- Moller, A., Deci, E. L., & Ryan, R. (2006). Choice and ego-depletion: The moderating role of autonomy. *Personality and Social Psychology Bulletin, 32*, 1024-1036. doi: 10.1177/0146167206288008.
- Moller, L. C., Hymel, S., & Rubin, K. H. (1992). Sex typing in play and popularity in middle childhood. *Sex Roles, 26*, 331-353. doi: 10.1007/BF00289916.
- O'Heron, C. A., & Orlofsky, J. L. (1990). Stereotypic and nonstereotypic sex role trait and behavior orientations, gender identity, and psychological adjustment. *Journal of Personality and Social Psychology, 58*, 134-143. doi: 10.1037/0022-3514.58.1.134.
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). *The measurement of meaning*. Urbana: University of Illinois Press.
- Petty, R. E., Wells, G. L., & Brock, T. C. (1976). Distraction can enhance or reduce yielding to propaganda: Thought disruption versus effort justification. *Journal of Personality and Social Psychology, 34*, 874-884. doi: 10.1037/0022-3514.34.5.874.
- Pleck, J. H., Sonenstein, F. L., & Ku, L. C. (1993). Masculinity ideology: Its impact on adolescent males' heterosexual relationships. *Journal of Social Issues, 49*(3), 11-29.

- Richeson, J. A., & Trawalter, S. (2005). Why do interracial interactions impair executive function? A resource depletion account. *Journal of Personality and Social Psychology, 88*, 934-947. doi: 10.1037/0022-3514.88.6.934.
- Rudman, L. A. (1998). Self-promotion as a risk factor for women: The costs and benefits of counterstereotypical impression management. *Journal of Personality and Social Psychology, 74*, 629-645. doi: 10.1037/0022-3514.74.3.629.
- Rudman, L. A., & Glick, P. (1999). Feminized management and backlash toward agentic women: The hidden costs to women of a kinder, gentler image of middle-managers. *Journal of Personality and Social Psychology, 77*, 1004-1010. doi: 10.1037/0022-3514.77.5.1004.
- Rudman, L. A., & Glick, P. (2001). Prescriptive gender stereotypes and backlash toward agentic women. *Journal of Social Issues, 57*, 743-762. doi: 10.1111/0022-4537.00239.
- Sanbonmatsu, D. M., & Fazio, R. H. (1990). The role of attitudes in memory-based decision making. *Journal of Personality and Social Psychology, 59*, 614-622. doi: 10.1037/0022-3514.59.4.614.
- Schmitt, M. T., & Branscombe, N. R. (2001). The good, the bad, and the manly: Threats to one's prototypicality and evaluations of fellow ingroup members. *Journal of Experimental Social Psychology, 37*, 510-517. doi: 10.1006/jesp.2001.1476.
- Sellaeg, K., & Chapman, G. E. (2008). Masculinity and food ideals of men who live alone. *Appetite, 51*(1), 120-128. doi: 10.1016/j.appet.2008.01.003.
- Shiv, B., & Fedorikhin, A. (1999). Heart and mind in conflict: The interplay of affect and cognition in consumer decision making. *Journal of Consumer Research, 26*, 278-292. doi:10.1086/209563.
- Shiv, B., Fedorikhin, A., & Nowlis, S.M. (2005). Interplay of the heart and mind in decision making. In R. Ratneshwar & D. Mick (Eds.), *Inside consumption: Frontiers of research on consumer, motives, goals, and desire* (pp. 166-184). London, UK: Routledge.
- Sirgy, M. J. (1982). Self-concept in consumer behavior. *Journal of Consumer Research, 9*, 287-300. doi: 10.1086/208924.
- Sobal, J. (2005). Men, meat, and marriage: Models of masculinity. *Food and Foodways, 13*(1), 135-158. doi: 10.1080/07409710590915409.
- Thompson, S. K. (1975). Gender labels and early sex-role development. *Child Development, 46*, 339-347. doi: 10.2307/1128126.
- Trope, Y., & Fishbach, A. (2005). Going beyond the motivation given: Self-control and situational control over behavior. In R. R. Hassin, J. Uleman & J. A. Bargh (Eds.), *The new unconscious* (pp. 537-565). New York, NY: Oxford University Press.
- Van Rompay, T. J., Pruyn, A. T., & Tieke, P. (2009). Symbolic meaning integration in design and its influence on product and brand evaluation. *International Journal of Design, 3*(2), 19-26. Retrieved from <http://www.ijdesign.org/ojs/index.php/IJDesign/article/view/566/257>
- Ward, A., & Mann, T. (2000). Don't mind if I do: Disinhibited eating under cognitive load. *Journal of Personality and Social Psychology, 78*, 753-763. doi: 10.1037/0022-3514.78.4.753.
- White, K., & Dahl, D.W. (2006). To be or not be: The influence of dissociative reference groups on consumer preferences. *Journal of Consumer Psychology, 16*, 404-413. doi: 10.1207/s15327663jcp1604\_11.
- Wood, W., Christensen, P. N., Hebl, M. R., & Rothgerber, H. (1997). Conformity to sex-typed norms, affect, and the self-concept. *Journal of Personality and Social Psychology, 73*, 523-535. doi: 10.1037/0022-3514.73.3.523.

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