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Implicit Gender Stereotypes Underlie Child Custody Decisions

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# IMPLICIT STEREOTYPES IN CUSTODY DECISIONS

## Abstract

Using hypothetical divorce cases we examine the role of gender stereotypes in decisions about child custody. In Experiment 1, good mothers received greater custody allocations than did good fathers across a tightly-matched pair of vignettes. Moreover, in Experiment 2, the proportion of maternal-primary custody was predicted by the tendency to implicitly associate warmth-related traits – such as friendliness, generosity or trustworthiness – to female over male nouns. Together, these results may shed light on the persistence of maternal-primary custody in judicial systems today, even when these contain gender-neutral parenting laws.

*Keywords:* implicit bias, child custody, benevolent sexism, gender stereotypes, warmth.

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### Implicit Gender Stereotypes Underlie Child Custody Decisions

In the 20<sup>th</sup> century, the belief in women's "natural superiority" with regard to child-rearing frequently served as a legal argument for the attribution of sole custody to mothers. As traditional gender roles were called into question, parenting laws in socially progressive states were subsequently revised and gender-neutral custody laws prioritizing "the child's best interests" are now the norm (Parkinson, 2015). But have such gender-neutral laws given rise to more egalitarian custody allocations in practice?

Some evidence suggests not, at least not immediately. In Brazil, where the present research is conducted, custody was granted to mothers in 86.3% of divorce cases involving minor children in 2013 (IBGE, 2014), and similar percentages have been observed in the United States (Braver, Ellman, Votruba, & Fabricius, 2011; Cancian & Meyer, 1998). Numerous factors may contribute to this disproportion: First, mothers may have handled a majority of care-taking functions prior to divorce. In line with this, a recent survey finds that women still exercise greater household and childcare duties than men even in dual-earner households (LeanIn & McKinsey, 2015). Second, nationally representative studies show higher rates of domestic violence (e.g., Tjaden & Thoennes, 2000) and substance abuse (van Etten, Neumark, & Anthony, 2001) by men than by women. Finally, the above percentage aggregates litigious and non-litigious custody decisions, and fathers may voluntarily forfeit parenting rights more frequently than do mothers. These considerations may account for much of the aforementioned disproportion in child custody outcomes.

In this study, we consider an additional factor which may have eluded the attention of legal scholars (but see Fabricius, Braver, Schenck, & Diaz 2010; Warshak, 1996). Namely, could latent gender stereotypes in the judge's mind shape custody awards, even under gender-neutral custody laws? A wealth of past research reveals

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gender stereotypes and their real-world consequences, which we review below in order to contextualize our present research question.

A prominent psychological theory – the *stereotype content model* – argues that stereotypes about social groups can be arranged on a two-dimensional plane (Fiske, Cuddy, & Glick, 2007; Fiske, Cuddy, Glick, & Xu, 2002). A first dimension, *warmth*, refers to our immediate assessments about whether we generally ‘like’ someone or their social group. Characteristics like trustworthiness, friendliness, kindness, and benign intentions are components of the warmth dimension. A second dimension, *competence*, encapsulates whether we generally ‘respect’ the person or social group, and commonly depends on the attribution of virtues like intelligence, success, and organization. Warmth and competence are independent dimensions of social perception, such that individuals and groups may be perceived as both competent and warm, as warm but incompetent, and so on.

The stereotype content model may help to characterize the nature of sexist prejudice. On one hand, competence traits seem to be more readily attributed to men (see Abele, 2003). For instance, a United Kingdom survey showed that parents estimated significantly higher IQs for their sons than for their daughters (Furnham, Reeves, & Budhani, 2002). This stereotype is equally present in professional environments: In a recent study, science faculty from research universities rated one of two applications for a laboratory manager position, which differed only in the candidate’s name (“Jennifer” vs. “John”). The male candidate was rated significantly more competent and hireable, and was offered a higher starting salary than the female candidate, even though their CVs were identical (Moss-Racusin, Dovidio, Brescoll, Graham, & Handelsman, 2012).

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In contrast, warmth traits appear to be more strongly associated to women: People exhibit more favorable attitudes towards women than towards men (Nosek & Banaji, 2001), and a closer look at the content of these positive evaluations reveals that women are perceived as more helpful, gentle, supportive, kind, understanding, and/or committed than men (Eagly, Mladinic, & Otto, 1991; Rudman & Kilianski, 2000). Critically, the association of benevolent characteristics to women – and in particular, to women who occupy mother, wife and caretaker roles – may constitute a subtle, and relatively overlooked, form of sexism (Glick & Fiske, 1996 1997). Though sexism typically connotes the oppression and unequal recognition of women, Glick and Fiske (1996 1997) highlight the complementary role of subjectively *positive* stereotypes about women.

A number of studies document negative effects linked to apparently benevolent attitudes reinforce traditional gender roles: First, a study in nine nations revealed that the endorsement of benevolent sexism (e.g., “A good woman ought to be set on a pedestal by her man”) predicts sex-typed mate preferences in both men and women: i.e., in men, the desire for a younger mate who is a “good cook and housekeeper”; in women, the desire for an older mate who should have “good financial prospects” (Lee, Fiske, Glick, & Chen, 2010; see also Montañés, et al., 2012). Furthermore, lab studies have shown that benevolent, but not hostile, forms of sexism undermine women’s performance on mock job applications (Dardenne, Dumont & Bollier, 2007), professional ambitions (Rudman & Heppen, 2003), and support for gender equality movements (Becker & Wright, 2011) – consistent with the theory that benevolent stereotypes reinforce a patriarchal *status quo* just as much as unabashed forms of oppression, but are not as strongly resisted by victims of gender inequality.

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Collectively, these studies demonstrate the existence of gender stereotypes that associate competence more easily to men and warmth more easily to women, with each reifying existing gender roles and occupational differentiation. In the present study, we examine whether stereotypes regarding warmth and gender contribute also to the persistence of maternal-primary custody, even in judicial systems with gender-neutral parenting law.

### **Experiment 1**

In Experiment 1, we probe both explicit and implicit preferences regarding child custody. To assess *explicit* beliefs, we ask participants whether in general “all rights and responsibilities concerning the children should be shared equally by both parents in case of divorce”. Participants also report their endorsement of benevolent sexism, employing the *Ambivalent Sexist Inventory* (Glick & Fiske, 1997). Since benevolent sexism involves stereotyped beliefs about women which may bring to bear on mothering (“Women, compared to men, tend to have a superior moral sensibility”), individuals who hold such attitudes may be more likely to grant primary custody to mothers and not fathers.

However, preferences may also take an *implicit* form, even when these conflict with explicit ideals – a dissociation widely documented in the study of racial prejudice (Dovidio & Gaertner, 2000; Pearson, Dovidio & Gaertner, 2009). Consider for instance, an overtly progressive (egalitarian) employer evaluating CVs from black and white candidates. The employer may hire the white candidate and justify the decision on the basis of non-racial differences, such as, more work experience, a unique skill set, and so on. And yet, through experimental comparison, we might detect implicit racial prejudice in the hiring decision: Namely, what would the outcome have been had their qualifications been reversed? Specifically, would the employer have hired the black

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candidate in that case? In Study 1, we adopt this experimental paradigm to evaluate whether implicit preferences arise in the context of custody awards when contrasting the parenting qualifications of mothers and fathers.

### **Methods**

#### ***Participants***

Eighty undergraduate law students (39 female,  $age_{mean} = 24.5$  years) at the Faculdades Integradas de Caratinga, a private four-year college in Minas Gerais, Brazil, were invited to participate in a short study after class. One participant did not complete our primary dependent measures and was therefore excluded from all analyses.

#### ***Procedure***

After providing informed consent, participants viewed two cases describing a married couple in the midst of divorce, battling over child custody in court. In order to motivate unequal custody assignments, vignettes were written so that one parent was somewhat warmer than the other parent (i.e., kinder towards the children, more unselfish, and so on).

Case 1 read as follows:

*Katie and Matt have two children, Alice and Gabe, who are 8 and 10 years old respectively. Both parents have stable jobs: Matt is a nutritionist, while Katie is a history professor. They contribute equally to household and child-related expenses. Their dynamic in the daily care of the children was always well-established. Katie prepared breakfast and lunch for the kids, and took them to school before heading to work. Matt would pick the kids up from school after work, make them dinner and take them to swimming lessons.*

*After several years being married, the couple decided to divorce for a few reasons: they weren't supporting each other as much anymore, and they*

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*were in disagreement about basic aspects of their children's education. Both parents are contesting custody over their children in court. They were, however, determined to do so in such a way to cause the least harm to Alice and Gabe.*

*Katie is known among family friends to be more affectionate and caring with the kids. She loves to tell them bedtime stories, and readily shows them affection through hugs and kisses. Matt, in contrast, has a colder personality. He doesn't normally show affection, and doesn't deal well with the children's emotional needs. He prefers to handle matter-of-fact and routine issues, like overseeing the children's homework and meals.*

*Katie, in turn, sometimes travels on weekends to conferences and talks, and misses out on important events with the kids, such as ballet shows and piano recitals.*

Case 2 involved a bus driver and a cashier, in which the bus driver had been selfish and dishonest with home finance and the cashier was more caring towards the children (see Supplementary Materials).

In order to determine whether participants exhibit an implicit preference, we compared custody awards in Cases 1 and 2 to awards in identical versions with parents' names transposed (so the fathers were warmer than the mothers). However, the test of an asymmetry in custody allocations precluded presenting both versions of the same case to our subjects. So, we paired levels of *better parent* with a different *case* on each trial: In other words, participants did not see the same case twice, but saw one case with a better father and one case with a better mother.

In a balanced, incomplete block design, *better parent* gender (1: better mother; 0: better father), and *case* (1, 2) were entered as within-subject factors. Cases were also presented in a counterbalanced order, and *case order* (1: Case<sub>1</sub> before; 2: Case<sub>2</sub> before),



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and *better-parent order* (1: better-mom first; 2: better-dad first) were coded as between-group factors (see Table 1).

Table 1: Between-Group Factors and Trial Content.

B/G factors	Case order:	1	1	2	2
	Better-parent order:	1	2	1	2
Trial content	Trial 1:	Case 1 Mom	Case 1 Dad	Case 2 Mom	Case 2 Mom
	Trial 2:	Case 2 Dad	Case 2 Mom	Case 1 Dad	Case 1 Mom

Custody was assigned for each case on a 7-point Likert scale from -3: “*Sole custody to [worse parent]*”, to 0: “*Shared custody*”, to 3: “*Sole custody to [better parent]*”. Next, participants completed the *Ambivalent Sexism Inventory* (Glick & Fiske, 1997) and reported their views on shared custody using two separate measures (see Supplementary Materials). Lastly, participants optionally provided basic demographic information: age, gender, political orientation and their parents’ marital status.

### Results

One-way ANOVAs revealed no difference in age, distribution by gender, political orientation, or parental marital status, by group, all  $ps > .3$ . Summary statistics of custody allocations on both cases are reported in Table 2 below.

Table 2: Summary Statistics by Case and Better-Parent.

	Better Mother		Better Father	
	N	M (SD)	N	M (SD)
1. <i>Nutritionist &amp; Professor</i>	40	0.48 (1.04)	39	-0.03 (0.63)
2. <i>Bus Driver &amp; Cashier</i>	39	0.69 (0.92)	40	0.13 (1.07)

Shared custody was the most popular decision, resulting in leptokurtic distributions, particularly on Case 1. So, we conducted Wilcoxon rank sum tests to

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assess the influence of our better-parent inversion, revealing significant differences on both cases: Case 1,  $z = 2.57$ ,  $p = .010$ ,  $r = .29$ ; Case 2,  $z = 2.29$ ,  $p = .023$ ,  $r = .26$ . We also report the *common language effect size* (CL) for both tests, i.e., the probability that a value randomly sampled from one condition (better mother) will be greater than a randomly sampled value from the other condition (better father): Case 1 CL = 64.0%, Case 2 CL = 63.7%.

To provide a general estimate of the effect, while controlling for differences in order, we also conducted a mixed-effects ordered logistic regression, with subject nested within case and case order and better-parent order as fixed effects. The effect of better-parent gender remained significant, OR = 3.14, 95% CI = 1.23 - 8.03,  $p = .017$ , after controlling for case and better-parent order,  $ps > .7$ . In subsequent models we therefore ignore both measures of order.

### ***Ambivalent Sexism Inventory.***

Excluding participants who left any blanks, we averaged hostile and benevolent items in order to generate separate hostile sexism (HS;  $\alpha = .72$ ) and benevolent sexism (BS;  $\alpha = .69$ ) scores for our participants.

Consistent with past research (Glick & Fiske, 1996), endorsement of hostile sexism positively correlated with a conservative political orientation,  $r(67) = .24$ ,  $p = .050$ , age,  $r(66) = .30$ ,  $p = .015$ , and was greater among males than among females,  $t(66) = 2.44$ ,  $p = .017$ , Cohen's  $d = .60$ . No corresponding relationships with benevolent sexism were observed, all  $ps > .5$ . Together, these results echo past perspectives suggesting that hostile sexism is antithetical to a progressive egalitarian ideology, but attitudes of benevolent sexism are not as strongly opposed.

*Does the asymmetry in custody allocations depend on benevolent sexist beliefs?*

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We employed a mixed-effects ordered logistic model to examine whether benevolent sexism moderated the effect of the gender manipulation on custody decisions, entering condition (1: better mom; 0: better dad), case (1; 2), BS score (centered) and their interaction as predictors. The main effect of the parent-gender manipulation was the only significant predictor in the model,  $OR = 3.51$ ,  $95\% CI = 1.34 - 9.19$ ,  $p = .011$ . In contrast, the interaction between benevolent sexism and parent gender was not significant,  $OR = -.37$ ,  $p = .49$ , suggesting that the observed asymmetry in custody allocations does not depend on the endorsement of benevolent sexist views.

### *Abstract support for shared custody.*

We included two items in order to determine whether participants' explicitly defend shared custody in the abstract. Our first question asked whether participants would approve or reject Brazil's current law on shared custody on a 4-point scale. Most participants (90.9%;  $n = 70/77$ ) approved the current formulation of shared custody in Brazil's civil code with "some" or "no" modifications.

Our second question asked participants whether they agreed or disagreed with the statement "In case of divorce, all rights and responsibilities concerning the children should be shared equally by both parents," using a 6-point scale. In line with past research (Braver et al., 2011; Fabricius et al., 2010), most participants agreed with the principle of shared custody (97.2%,  $n = 72/74$ ;  $M = 5.57$ ,  $SD = .81$ ).

### *Does endorsement of shared custody reduce the maternal preference?*

As with benevolent sexism, we examine whether our single item of support for shared custody moderates the observed asymmetry in custody awards in a mixed-effects model.<sup>1</sup> As with benevolent sexism, we entered condition (1: better mom; 0: better dad), case (1; 2), support for shared custody score (centered) and their interactions as

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<sup>1</sup> Similarly, isolating participants who approved the law with "no" modifications (55.8%  $n = 43$ ), we observed the asymmetry in custody allocations on both cases,  $ps < .04$ .

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predictors. The main effect of the parent-gender manipulation was the only significant predictor in the model,  $OR = 2.98$ ,  $95\% CI = 1.06 - 8.34$ ,  $p = .038$ . In contrast, neither a main effect of support for shared custody,  $OR = 1.17$ ,  $p = .63$ , nor an interaction with parent gender,  $OR = .79$ ,  $p = .78$ , were observed.

Since support for shared custody was highly skewed, it is also useful to examine its moderating role by filtering participants according to the strength of their agreement with the shared custody principle. Table 3 displays the pairwise test of asymmetry (rank sum) for each case and each filter: Excluding participants who disagreed, and those who agreed only slightly, with shared custody did not reduce the asymmetry in custody allocations. At the strongest level of agreement with shared custody, however, the maternal preference was not statistically significant.

Table 3: Support for Shared Custody and Maternal Preference.

	Shared custody agreement: filter								
	Slight			Moderate			Strong		
	<i>n</i>	<i>Z</i>	CL	<i>n</i>	<i>Z</i>	CL	<i>n</i>	<i>Z</i>	CL
<i>Case 1</i>	72	2.06*	61.6%	66	2.16*	63.0%	53	1.64	60.9%
<i>Case 2</i>	72	2.17*	63.6%	66	2.42*	65.9%	53	1.53	61.4%

\*:  $p < .05$ .

### Discussion

Public opinion (Braver et al., 2011) and legal scholarship (Stamps, 2002; Warshak, 1996) have attributed a maternal preference to family court. To our knowledge no past studies have sought to provide evidence for this claim in an experimental setting. By simply transposing the names of parents across tightly-matched pairs of cases, we found an asymmetry in custody allocations: Namely, good mothers received greater custody allocations than did good fathers.

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We tested two potential moderators of maternal preference, neither of which proved to be explanatory. First, we predicted that the attribution of subjectively benevolent traits to women, such as purity and sweetness, would moderate the asymmetry in custody allocations. This prediction, however, was not supported. Second, the emergence of a maternal preference in our sample co-existed with overwhelming support for the doctrine of shared child custody in the abstract. A vast majority of participants approved shared custody legislation, and agreed with the principle of shared custody. Only the most stringent filter – isolating participants who expressed strong agreement with the principle of shared custody – rendered the maternal preference non-significant. Still, even among this subsample of strongly egalitarian participants, common language effect size indicated that custody allocations to mothers remained greater than custody allocations to fathers in approximately 60% of cases.

Neither the explicit rejection of shared custody, nor the maintenance of benevolent sexist views, moderated the observed maternal preference in child custody. These results tentatively suggest that the preference for maternal-primary child custody may depend not on explicit beliefs, but rather on implicit stereotypes – the focus of Experiment 2.

### **Experiment 2**

The gold standard for measuring implicit stereotypes – the so-called *Implicit Attitudes Test* (IAT; Greenwald, McGhee, & Schwartz, 1998) – is a timed sorting task which computes the average speed at which individuals associate pairs of concepts. Past research shows that people implicitly hold stereotypical attitudes that they either do not endorse or do not consciously recognize (Banaji & Hardin, 1996; Inbar, Pizarro, Knobe, & Bloom, 2009), and which influence behavior in a manner independent of explicit goals and intentions (Greenwald et al., 1998; Nosek et al., 2009).

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The IAT has proven a useful tool in the study of gender stereotypes as well: An influential study asked participants to complete an IAT pairing scientific terms (e.g., ‘equation’, ‘physics’, ‘NASA’) and artistic terms (e.g., ‘symphony’, ‘sculpture’, ‘drama’) to either male or female nouns. The researchers found that science was associated to male nouns, while the arts were associated to female nouns (Nosek, Banaji, & Greenwald, 2002). These implicit associations have profound consequences outside the lab: A subsequent study showed that country-level differences in the strength of the male-science association correlated with differences in male versus female performance on standardized math and science tests (Nosek et al., 2009).

In essence, Experiment 1 demonstrated that good fathers were largely awarded shared custody, but good mothers were sometimes awarded primary custody, consistent with the mechanism of implicit stereotyping outlined earlier (see also Dovidio & Gaertner, 2000): In the presence of independent grounds to award primary maternal custody, an implicit stereotype may modulate the extent to which maternal-primary custody is awarded, even in a sample that explicitly favors ideals and legislation for shared custody. In Experiment 2, we test this explanation closely: Participants are asked to judge cases in which maternal-primary custody could be justified on independent grounds (e.g., more financially responsible, more invested in child-rearing), and examine whether differences in custody awards are predicted by scores on a Gender-Warmth IAT.

### **Methods**

#### ***Participants***

Fifty-six undergraduate law students (37 female,  $age_{mean} = 21.8$  years) at the Pontifical Catholic University of Rio de Janeiro were invited to participate in a lab study in exchange for course credit.

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### *Procedure*

Experiment 2 employed a set of three hypothetical custody disputes, presented in a random order (see Supplementary Materials). The cases described mothers who were *either* warmer (i.e., less selfish) or more competent (i.e., more disciplined, more successful at work) overall than fathers. For instance, in one case, the mother a non-profit worker and the father a chamber orchestra musician were battling child custody, after the father had lost his job and started drinking. Participants made custody allocations on a seven-point scale from -3: “*Sole custody to [father]*”, to 0: “*Shared custody*”, to 3: “*Sole custody to [mother]*”.

In the second part of the experiment, participants completed a Gender-Warmth IAT using *Inquisit* by Millisecond Software. Participants associated gender categories (*Male*: “man”, “boy”, “husband”, vs. *Female*: “woman”, “girl”, “wife”) to warmth characteristics (*Warm*: “kind”, “trustworthy”, “patient”, vs. *Cold*: “hostile”, “selfish”, “insensitive”). Based on past research (Rudman & Killianksi, 2000), we hypothesized that participants would associate Warm adjectives to Female nouns faster than to Male nouns. The order of presentation of the blocks was counterbalanced (and coded as a dichotomous variable), so half of the participants viewed the hypothesis-inconsistent block first while the other half viewed the hypothesis-consistent block first.

Concerns about demand characteristics of Experiment 2 led us to a fixed order for the experiment. Since the IAT is relatively less susceptible to desirable responding than the set of custody decisions, custody cases always preceded the IAT. Taking part in the IAT could lead participants to an apprehensive role, compensating for their perceived bias on the custody allocation task. By contrast, custody allocations would likely exert a smaller effect, if any, on IAT behavior.

### **Results**

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In one sample *t*-tests, we observed greater custody allocations to mothers on all three cases, i.e., a significant difference from shared custody ( $M_1 = .71$ ,  $SD_1 = 1.07$ ;  $M_2 = 1.41$ ,  $SD_2 = 1.11$ ;  $M_3 = .68$ ,  $SD_3 = 1.03$ ; all  $p$ s < .001). In order to evaluate the relationship with implicit attitudes about gender and warmth, we averaged all three custody allocations generating a subject-level mean custody judgment.

### ***Gender-Warmth IAT.***

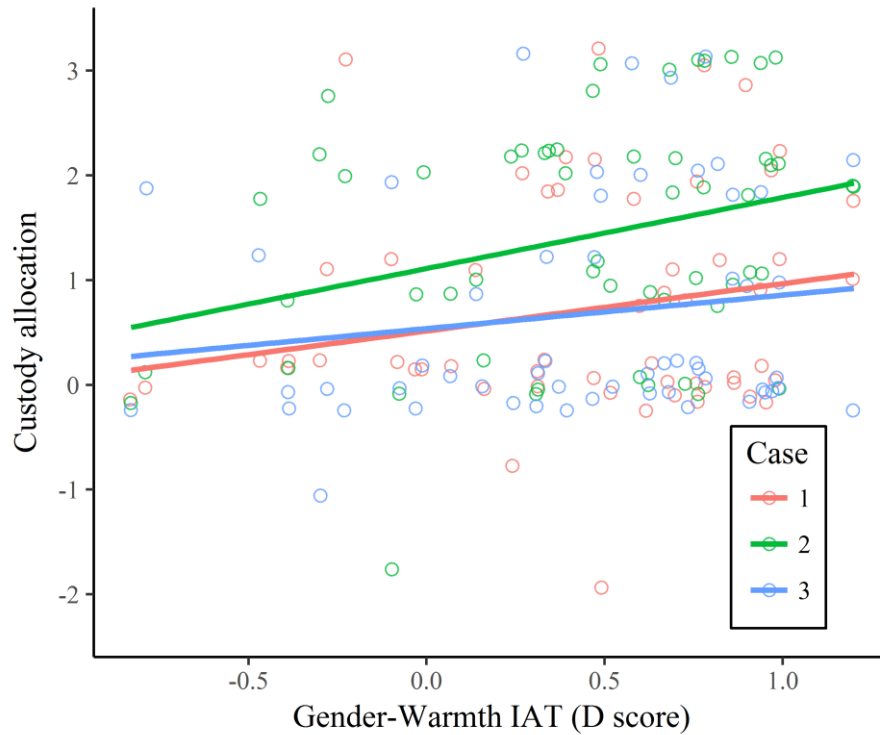
First, we examined the distribution of reaction times to stereotype-consistent and stereotype-inconsistent blocks. We eliminated one outlier whose average response time to stereotype-inconsistent pairings was over three standard deviations above the group mean. Mean untreated response times for our sample were 900 *ms* for the stereotype-consistent block versus 1124 *ms* for the stereotype-inconsistent blocks.

*D*-scores were calculated using the improved scoring algorithm in Greenwald, Nosek, and Banaji (2003). Block order had no effect on *D*-scores,  $p > .15$ . Mean *D*-score ( $M = .44$ ,  $SD = .49$ ) revealed a moderate Female-Warm association,  $t(55) = 6.72$ ,  $p < .0001$ .

### *Do implicit stereotypes about gender predict custody allocations?*

A mixed-effects ordered logistic model was conducted to assess the influence of *D*-scores on custody decisions, with random intercepts for each subject and case, and allowing a random slope of *D*-score by case. The fixed effect of *D*-score was significant,  $OR = 2.66$  [95%  $CI = 1.26 - 5.60$ ],  $z = 2.57$ ,  $p = .010$ . A closer look at correlations separately by case revealed that only one relationship was statistically significant (Case 2), Case 1  $\rho = .23$ ,  $p = .09$ ; Case 2  $\rho = .28$ ,  $p = .04$ ; Case 3  $\rho = .16$ ,  $p = .25$ , but remaining correlations trended in the predicted direction. Finally, *D*-scores predicted mean custody allocations for the three cases,  $\rho(56) = .35$ ,  $p = .007$  (see Figure 1),





*Figure 1.* Custody allocations by Gender-Warmth IAT scores. (A small amount of random jitter has been added to aid in visualization.)

***Discussion***

Experiment 2 documented a moderate implicit association between warmth and gender, in line with past research (see also Rudman & Killianksi, 2000). Namely, female terms (mother, lady, girl) were more easily associated to warmth-related attributes (gentle, kind, trustworthy), while male terms (father, boy, guy) were associated to low warmth (cruel, rude, hostile). Furthermore, the strength of the female-warm association predicted the proportion of mother-primary custody across three cases of divorce and custody dispute.

Two limitations of Experiment 2 are worth noting: First, our study was restricted to cases in which greater custody allocations to mothers could be independently justified. Thus, whether the relationship between implicit gender stereotypes and custody decisions holds in other circumstances is not addressed directly by this experiment.

Second, in order to avoid socially desirable responding on our custody cases, the Gender-Warmth IAT was completed *after* the custody cases. Whether implicit attitudes are influenced by short in-lab tasks is uncertain, with some studies finding modest reductions in the strength of pre-existing associations (Blair, Ma & Lenton, 2001; Dasgupta & Greenwald, 2001; Dasgupta & Asgari, 2004) while others show no effect (Gawronski & Strack, 2004; Gregg, Seibt, & Banaji, 2006; Petty, Tormala, Briñol, & Jarvis, 2006). Thus, we acknowledge the possibility that exposure to our divorce cases influenced subsequent responding on the IAT. However, considering that mothers in our custody cases exhibited average warmth but greater than average competence (see manipulation check in Appendix), we doubt that our custody cases inflated the association between women and warmth (see also Rudman & Glick, 1999).

### Meta-Analysis

In closing, we meta-analyze our primary findings in order to assess the overall statistical power and effect size of the observed effect, including an unreported replication of Study 1 (see Table 4). Our approach is based on the method outlined by Hedges and Olkin (1985): For each experiment and individual custody case, we first convert effect sizes to standard deviation units ( $d$ ), which are then corrected for bias in small samples:

$$d_{corrected} = \left(1 - \frac{3}{4(N - 2) - 1}\right) \times d$$

Since our studies involve repeated measures, we calculated variance,  $\overline{\sigma^2}$ , for the experiment-level effect size,  $\overline{d}$ , using the method proposed by Borenstein and colleagues (2009) for dealing with statistical dependence:

$$\overline{\sigma^2} = \left(\frac{1}{m}\right)^2 \left( \sum_{i=1}^m \sigma^2_i + \sum_{i \neq j} \left( r_{ij} \sqrt{\sigma^2_i} \sqrt{\sigma^2_j} \right) \right)$$

where an effect  $d_i$  has variance  $\sigma^2_i$  for several repeated measures  $i = 1, \dots, m$ .

Table 4: Meta-Analysis: Data Table.

	Case	Outcome			Experiment		
		r	Cohen's <i>d</i>	$\sigma^2$	$\bar{d}$	$\overline{\sigma^2}$	1- $\beta$
Experiment 1 (n = 79)	1		0.58	0.05	0.57	0.02	.71
	2		0.55	0.05			
Replication (n = 40)	1		0.74	0.11	0.53	0.06	.37
	2		0.32	0.10			
Experiment 2 (n = 56)	2	.21	0.43	0.07	0.46	0.03	.39
	3	.30	0.65	0.07			
	4	.15	0.31	0.07			
Meta-analysis (n = 175)					0.52	0.04	.93

A random-effects model ( $k = 3$ ), fit by restricted maximum likelihood, was estimated using the metaphor package for R (Viechtbauer, 2010). The intercept was significant, yielding an estimate of our true effect size: Cohen's  $d = .52$  (95% CI = .45 - .60),  $z = 13.8$ ,  $p < .001$ . Finally, a *post hoc* power analysis ( $\alpha = .05$ ,  $N = 175$ ) revealed very good power for our meta-analysis,  $1-\beta = .93$ , despite limited statistical power of our individual studies.

### General Discussion

In two experiments, we observe evidence of a preference for maternal-primary custody based on implicit stereotypes about gender. In Experiment 1, a maternal preference was observed across tightly-matched pairs of custody disputes, such that good mothers received greater custody allocations than did good fathers. In Experiment 2, we found that implicit associations of female nouns to warmth-related traits captured variability in custody allocations. Together these results suggest that the maternal

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preference discussed in the literature on child custody depends in part on implicitly-held stereotypes which are not reflectively endorsed.

Past work on the folk psychology of custody decisions emphasizes the widespread endorsement of shared custody (Braver et al., 2011), which may seem inconsistent with our attention on maternal preference. However, a closer look at Braver and colleagues' results reveals a maternal preference in their data as well: For instance, in one of their studies, "of those who did not select the 'equal living' alternative, far more (28%) favored maternal primary custody than paternal (3%), a huge and significant difference,  $t(35) = -3.0, p = .01$ " (2011, p. 227). Likewise, our results support Braver et al.'s central conclusion: In both experiments, shared custody was the most popular decision, despite a bias on which to deem one parent as clearly more suitable than the other. So, though at first glance our findings may seem at odds, our results are remarkably consistent.

From the perspective of ambivalent sexism (Glick & Fiske, 1996), the present phenomenon might be construed as an obstacle toward gender equality. Positive stereotypes about women have been shown to reduce women's professional aspirations (Montañés et al., 2012; Peach & Glick, 2013; Rudman & Heppen, 2003) and support for women's rights (Becker & Wright, 2011). The maternal preference documented in this study may further aggravate gender imbalance in the workplace, by reinforcing and incentivizing women's involvement in child-rearing roles.

Although our sample consisted of law students, we have some empirical basis to suspect that judges are not entirely insulated from these phenomena. Few studies have directly evaluated whether judges' thinking is equally susceptible to bias and heuristic reasoning (Guthrie, Rachlinski, & Wistrich, 2001; Rachlinski, Johnson, Wistrich & Guthrie, 2009). One experiment tested for the use of typical heuristics in judicial

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decisions using a sample of magistrate judges: Judges behaved much like laypeople with respect to anchoring, hindsight bias, and egocentric bias, but fared better in response to framing and were less reliant on the representativeness heuristic (Guthrie et al., 2001). Another study looked for implicit racial prejudice in a sample of 133 United States judges (Rachlinski et al., 2009). The study found that White judges particularly harbored a racial bias against Black Americans comparable to that of non-judges. Moreover, judges' implicit biases somewhat influenced their assessment of juvenile defendants, when the defendant's race was subliminally manipulated. Although the evidence for cognitive bias among professional judges is thus far limited, the above studies alert us of the distinct possibility that implicit attitudes shape outcomes in the courtroom as well.

The present findings should not be construed as a defense of shared custody or as evidence in its favor. Separate and more extensive analyses of child outcomes, parental satisfaction, and parent-child relationships evaluate whether shared custody is altogether desirable (Amato, 1993; Bauserman, 2002). Rather, our main contributions are psychological: First, we highlight the dissociation between implicit preferences and explicit endorsement of gender equality and shared custody laws. Second, we document the role of gender stereotypes in judicial contexts, extending and linking two influential research programs on implicit attitudes and ambivalent sexism. Together with past studies illustrating the effects of judge's ideology (Epstein, Parker & Segal, 2012; Miles & Sunstein, 2008) and personal experience (Glynn & Sen, 2015) on their professional decisions, our current findings cast doubt on strictly formalist models of judicial reasoning and call for a detailed grasp of the psychology behind the interpretation and application of legal norms.

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