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Uncovering the Underlying Essence of Fatherhood: Psychological Essentialism and Perceptions of Fathers

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Uncovering the Underlying Essence of Fatherhood:

Psychological Essentialism and Perceptions of Fathers

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Abstract

Psychological essentialism is defined as the tendency to view entities as if they have an underlying, and often invisible, essence that makes them what they are (Medin & Ortony, 1989) and these essentialist conceptions about a group can be heightened when there is an assumed biological basis to group membership (Dar-Nimrod & Heine, 2011). The present study addresses this concept and asks whether or not essentialist perceptions of fathers can be manipulated when participants are shown the biological changes that occur when men become fathers. It was hypothesized that (1) on average, mothers would be essentialized more than fathers, (2) the difference in essentialism ratings between mothers and fathers within each of the four conditions would follow a linear trend, and (3), participants in the conditions that focused on fathers would support work-related policies that affect parents more than the other conditions. The current study was able to confirm all three of these hypotheses and goes onto further discuss what these findings mean in a real-world setting.
Uncovering the Underlying Essence of Fatherhood:

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Psychological essentialism has been defined as the tendency to view entities as if they have an underlying, and often invisible, essence that makes them what they are (Medin & Ortony, 1989). These groups are also viewed as being difficult for a person to move in or out of (permeability), to have discrete or clear boundaries that separate that particular group from other groups (variability/uniformity), and be naturally constructed versus socially constructed (naturalness). Being a member of an essentialized groups allows outsiders to believe that this membership can lead to informative inferences about that individual with no additional information (inductive potential) and that the characteristics of the members are persistent over time (stability). When an individual is a member of one of these groups, they are perceived as sharing a common fate and to pursue common goals (shared agency and goals) (Dar-Nimrod & Heine, 2011; Park, Banchefsky, & Reynolds, 2015).

A study conducted by Park, Smith, and Correll (2010) used a “Go/No-Go Task” to show how participants implicitly associated males and females as well as fathers and mothers with certain roles. The Go/No-Go Task presented the participants with nine categories of stimuli, including six focal categories (mom, dad, parent, professional, female, male) and three distractor categories. They were instructed to press the “go” button whenever an item from one of the two focal categories appears (e.g., “dad” and “parent”) and to make no response, or “no-go”, when the item is not from one of the categories. The strength of the participants’ associations or fit between the two focal categories was measured by the ease of performing the task. From this study, they found that the role of “mom” is more inherently tied to the category female than the
role of “dad” is tied to the category male. Additionally, moms were strongly associated with parenting behaviors while dads were more strongly associated with professional, work-related behaviors. These findings show how the group of mothers is viewed as being a more “real” category for women to be associated with compared to the category of father for men.

Dar-Nimrod and Heine (2011) argue that people’s understanding of genes may serve as an essence placeholder which allows people to infer others’ characteristics and behaviors. This concept is known as genetic essentialism and once a person creates this genetic foundation of a group, their psychological essentialist perceptions are activated. One such group that this pertains to is the group of mothers. In the third study of a series conducted by Park, Banchefsky, and Reynolds (2015), they focused on how when a genetic basis underlies group membership, the group differences are more likely to be viewed as “real” and meaningful. In this study, participants learned about a fictional “intelligent” species from another planet, the Naloneons, and about their reproductive process. For those who decide to reproduce, they are assigned the role of Nesters (build a nest and lay an egg in it) or the role of Duster (blanket the egg with fertilizing dust to begin the growth process). Participants were then randomly assigned to one of four storybooks which varied in their description of how the Nester was depicted across the reproductive process (as undergoing physical changes throughout the process or not). It was found in this study that when Nesters were observed as undergoing a salient physical transformation in the process of producing offspring, the participants had more essentialist conceptions of the group compared to the group that did not undergo a physical transformation. This finding can help explain how mothers are naturally more essentialized than fathers due to
the physical changes that women experience when they become mothers. They also argue that these physical changes that people witness may also alter their essentialist perceptions because they are viewed as being driven by underlying biological/biochemical changes, which may also explain why they found that mothers are essentialized significantly more than fathers.

The current study asked the question of whether or not this phenomenon of essentializing mothers based on the biological changes that occur when a woman becomes a mother that Park et al. (2015) demonstrated can be applied to fathers as well. Recent studies have demonstrated that men experience biological changes when they become fathers, as do women when they become mothers (Feldman, 2012; Gordon et al., 2010; Naber et al., 2010; Feldman et al., 2009). Such changes include an influx of the hormone Oxytocin when men interact with their child as well as changes in the activity and structure of various brain regions such as the amygdala, hypothalamus, and prefrontal cortex. These changes have been associated with fathers having more empathic concern for their children and becoming more protective and motivated to help them thrive. Thus, the primary goal of the current study was to assess if participants’ essentialist perceptions of fathers could be manipulated by exposing them to information about these real biological changes that fathers experience.

Four conditions were created and participants were randomly assigned to one. These conditions were called BioMom, BioDad, SocialDad, and Control. Those in the BioMom condition read an article that outlined the biological changes that occur in women when they become mothers and how those changes affect their parenting behaviors. Similar to the BioMom condition, those in the BioDad condition read an article about the biological changes that men experience when they become fathers and how those changes affect their parenting behaviors.
Participants in the SocialDad condition read an article that talked about how men have taken on a more involved parenting role throughout time and how that has changed their relationship with their children. This condition was created to see if social changes could also elicit changes in essentialist perceptions of fathers. The Control condition was not given an article to read and instead were asked to think about the target groups, and to write about what people in that group are like and how being a member of that group affects their lives.

Prior research has found that when there is an assumed biological basis to group membership, essentialist conceptions about that group are heightened (Dar-Nimrod & Heine, 2011; Park, Banchefsky, & Reynolds, 2015). Based on these findings, the current study predicted that the difference between how participants in each of these conditions rated mothers and fathers on essentialism would be the largest in the BioMom condition, followed by the Control condition, the SocialDad condition, and the smallest difference to be in the BioDad condition. When participants are presented with information about the biological changes in men when they become fathers, there should be an increase in their essentialist conceptions about fathers, thus decreasing the gap between essentialism ratings for mothers and fathers in the BioDad condition. In the SocialDad condition, we expected the next largest difference because the participants were presented with information about how dads have taken on an increasingly active role in parenting similar to mothers. The Control condition was assumed to follow because no information about mothers or fathers were included, which should mean that the difference should reflect the general population’s natural essentialist perceptions of mothers and fathers. This means that the difference in ratings between mothers and fathers in this condition should be larger than the differences in the BioDad and the SocialDad condition since the gap is not being closed by
heightening their essentialist beliefs about fathers, but less than the difference in the BioMom condition since their essentialist perceptions of mothers are not being further exaggerated. In the BioMom condition, it is expected the largest difference in essentialism ratings would be found because the participant’s essentialist conceptions about mothers should be heightened when the biological changes of women are discussed, which would exacerbate the difference in essentialist ratings between mothers and fathers.

Another goal of this study was to examine how essentialist beliefs about mothers and fathers affect participants’ view of other aspects of parenthood. In particular, this study focused on how manipulation of the participants’ essentialist perceptions of mothers and fathers would influence their support of work-related policies that directly effect working parents. The policies that were analyzed were in regards to paid parental leave, the enforcement of employers to provide on-site daycare, and offering flextime options to parents. It was hypothesized that support for these policies would be heightened in the BioDad condition as a result of the participants’ increased essentialist beliefs about fathers, which would cause them to think of them as a more real and meaningful group with an underlying essence, similar to perceptions of mothers. By viewing fathers in this way, it may further lead the participants to view them as an equal contributor to the parenting of their children and therefore, should also benefit from work-related policies that effect parents. It was also predicted that participants in the SocialDad condition would also be in favor of these policies since they were shown how fathers today have taken on a more active parenting role compared to fathers in the past. Since fathers in this condition are considered to be as essential as mothers in terms of the caring of their child,
participants may support policies that would allow them to be better able to fulfill their role as a father.

With what prior research has found about psychological essentialism and how individuals view essentialized groups, the following hypotheses were derived:

Hypothesis 1. On average, mothers would be essentialized more than fathers.

Hypothesis 2. The difference in essentialism ratings between mothers and fathers would be ordered as follows: The largest difference should occur in the BioMom condition, followed by the Control condition, the SocialDad condition, and BioDad condition should show the smallest difference in essentialized perceptions of mothers relative to fathers.

Hypothesis 3. The SocialDad and BioDad conditions will have an increase in policy support since participants will view fathers as being more active in their parenting role in the SocialDad condition and the group of fathers will be viewed as more similar to mothers in the BioDad condition.

Methods

Overview

For this study, participants took an online survey that consisted of reading a brief article, or simply thinking about the relevant target groups, and then rating 12 items that measured the extent to which they essentialized four target groups (mothers, fathers, cigarette smokers, and people who are chronically depressed). The last two target groups were included to give the survey a broader context. For the participants randomly assigned to one of the experimental groups (BioDad, BioMom, SocialDad), they were asked to read one of the three articles that
were created specifically for this study. These articles presented them with information from previous research about either the biological changes men or women experience when they become parents or how the social role of fathers have changed through the years. Those who were assigned to the control condition were not given an article to read and instead were asked to think about each of the four target groups and briefly write about what kind of person members of those groups were and how being a member of the group effects their lives. All participants were also asked to rate how much they supported specific work-related policies that directly impact working parents. The design of the study was a 4 (condition: BioMom, BioDad, SocialDad, Control) x 2 (participant sex: male, female) x 2 (target: mothers, fathers) with repeated measures on the last factor.

Participants

There were a total of 455 participants who were recruited through Amazon’s Mechanical Turk marketplace. There were 47 participants (10%) who failed to correctly respond to the two attention checks that were incorporated into the survey (described below), so their responses were excluded from the analysis, leaving a final total of 408 participants. Included in this sample were 191 males and 217 females ages 18 to 69 ($M = 38.7$, $Mdn = 36$). On average participants identified as somewhat liberal ($M = 3.34$; a rating of 1 being extremely liberal and a rating of 7 being extremely conservative) and 228 of the participants were parents (either biological, adoptive, or step). The sample was primarily White (337 participants), followed by Asian (31 participants), Black (27 participants), Latino (19 participants), Native American (8 participants), and the remainder identified as Other (3 participants). Those who were included in the final sample were paid $1.00 for their participation.
Materials

Three articles were created for the active conditions (BioMom, BioDad, and SocialDad) using data and findings from research studies examining the biological and social changes men and women experience in the transition to parenthood (see Appendix A). By using factual information about the transformation males and females experience when they become parents, it allows us to see just how much these real processes can affect an individual’s perceptions. For the BioMom and BioDad articles, the main focus was on the association between becoming a parent and increased levels of the hormone Oxytocin as well as changes in the structure and activity of certain brain regions (the amygdala, hypothalamus, and prefrontal cortex). Other than the gender pronouns that were used, these articles were identical to one another. This was done to help decrease any confounding factors that would account for the differences in responses between the participants in the BioMom condition and the BioDad condition. The articles described the brain as being “remarkably plastic” in terms of the way that its structure and activity can change when an individual’s circumstances change. The participants were then told about how the changes in Oxytocin and the structure of the brain are associated with changes in a parent’s (mother or father, depending on condition) mood regulation and parenting behavior. The parenting behaviors outlined were increases in empathic concern and helping behavior, protectiveness of their child, and an increased motivation to help their child thrive. It was then explained how when mothers or fathers spend more time with their babies, they strengthen the connection with them, which is thought to be partially due to the increased flow of Oxytocin when they interact. An image of Oxytocin bound to its carrier protein, neurophysin, was also included in the articles to make them appear more credible to the participants.
The SocialDad article focused on the dramatic changes that men have undergone in their role as fathers in recent times. Although this article differed from the ones from the BioDad condition and the BioMom condition, the wording was similar to them. As was emphasized with the brains of parents, the social role of fathers was also described as flexible. Participants were given information about how fathers today are taking on a more active parenting role than ever before. For example, the article provided comparisons such as “fathers today spend 2.5 times as many hours a week with their children as they did in 1985” and “fathers spend more time interacting with their child and actively participating in parenting behavior”. The SocialDad article, like the other condition’s articles, explained how more time spent with their child is associated with the parent reporting an increase in level of empathic concern, increased feelings of protectiveness of their child, and become more motivated to help them thrive. To exemplify the changes in parenting for fathers during the past 40 years, a timeline was created using fathers from television shows that represent what a “typical” father was like during that time period.

Procedure

This study used a survey format to collect data from the participants. Once the participant initiated the survey, they were randomly assigned to one of the four possible conditions: BioMom, BioDad, SocialDad, or Control. There were 101 participants assigned to the BioMom condition (50 males, 51 females), 105 to the BioDad condition (44 males, 61 females), 103 to SocialDad (55 males, 48 females), and 99 participants were in the Control condition (42 males, 57 females). The first three conditions are considered “active” conditions because the participants were asked to read an article that was said to have recently appeared in a major news outlet. Participants in the Control condition did not read an article and instead were asked to
think about four different groups of people, cigarette smokers, those who are chronically depressed, mothers and fathers. Using an open-answer format, they were told to write a sentence or two about what people in those groups were like and how much being a part of that group affects their lives.

Using past research that identified the six dimensions of essentialism (Dar-Nimrod & Heine, 2011; Park, Banchefsky & Reynolds, 2015), 12 items were developed to measure essentialism: inductive potential, permeability, variability/uniformity, shared agency and goals, stability, and naturalness. These dimensions were measured in regards to four target groups: mothers, fathers, cigarette smokers, and people who are chronically depressed. The last two target groups were incorporated to provide a broader context for the survey. For mothers and fathers, two items were created to measure each of the dimensions of essentialism (one reverse-worded item). These same two items were asked for the filler groups but in order to reduce the total number of items and make the survey length more manageable, one item was asked about cigarette smokers and one about the chronically depressed (rather than two items for each group). This resulted in a total of 36 items measuring essentialism (see Table 1 for all 12 items in the form they were asked for the target group mothers). The dimensions of essentialism are: (1) inductive potential, or how informative group membership is and the magnitude of the inferences that can be made based on group inclusion, (2) permeability, or how difficult it is for one to move in or out of the group, (3) variability/uniformity, or how discrete and clear the boundaries that separate the groups are and the degree of homogeneity within a group, (4) shared agency and goals, or the extent to which the members of a group share a common fate or pursue common goals, (5) stability, or the persistence of the group’s characteristics over time, and
naturalness, or the perceived naturalness versus the social construction of the group. For each item, participants were asked to rate how much they agreed with the statement from (1) strongly disagree to (7) strongly agree. Intermixed within the 36 essentialism items were two attention checks (“It is important in surveys like this to make sure that people are actually reading the questions. Please mark the strongly disagree button for this item”) used to determine whether or not the participant’s responses would be included in the final sample.

Table 1

**Essentialism Items for Target Group Mother**

<table>
<thead>
<tr>
<th>Dimension of Essentialism</th>
<th>Survey Question</th>
<th>Survey Question (Reverse-Worded)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inductive Potential</td>
<td>If I learn that a woman is a mother, I will know a lot about what her life is like</td>
<td>It would be very difficult to know how a woman spends her day if the only thing I knew about her is that she is a mother</td>
</tr>
<tr>
<td>Permeability</td>
<td>Once a woman is a mother, she’ll always be a mother—it is impossible to leave that behind</td>
<td>Just because a person thinks of herself as a mother at one point in her life doesn’t mean she will always think of herself as a mother</td>
</tr>
<tr>
<td>Variability/Uniformity</td>
<td>As a group, women who are mothers are very distinct and different group from women who are not mothers</td>
<td>Women who are mothers are more similar than different from each other</td>
</tr>
<tr>
<td>Shared Agency and Goals</td>
<td>The things that are important to women who are mothers seem to be very similar for all mothers</td>
<td>Thinking about mothers, it seems like there is a lot of variation in what they want out of life</td>
</tr>
</tbody>
</table>
The defining characteristics of mothers have stayed pretty much the same over the course of history. The qualities we bring to mind today when we think about a mother are likely to be very different from those that people will bring to mind 50 years from now when they think about a mother.

Some categories are very natural, whereas others are created by society. I think the category of “mothers” as a natural category.

Some categories are created by society, whereas others are more natural. I think of the category “mothers” as a category created by society.

**Note.** Essentialism items for the target group mother. Each dimension of essentialism is measured using two items, one of which is reverse worded. Items for other target groups (father, cigarette smokers, chronically depressed) differ only in terms of the group that they are referring to.

The participants were then asked to rate how much they supported three work-related policies that affect workers with families. These policies were (1) paid parental leave that would require six weeks of mandatory paid parental leave for either the mother, the father, or split between the two, (2) on-site daycare for both large and small companies, and (3) flextime, which allows an employee to be able to work hours outside the normal nine-to-five range or being able to work from home (see Table 2). For each of these policies, participants rated the extent of their support from (1) strongly oppose to (7) strongly support.
Table 2

Policy Items

<table>
<thead>
<tr>
<th>Policy</th>
<th>Survey Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid Leave</td>
<td>Currently in the U.S. there is no mandatory paid paternal leave (some companies offer leave, typically maternity leave to mothers, but it is not required. To what extent would you support a policy requiring 6 weeks of mandatory paid paternal leave in the U.S. that can be taken by either the mother, the father, or split between the two?</td>
</tr>
<tr>
<td>Daycare</td>
<td>Some employers say they would be willing to provide on-site daycare if the government would help subsidize or pay for it. To what extent would you support using taxpayer dollars to help pay for onsite daycare for both large and small companies in the U.S.?</td>
</tr>
<tr>
<td>Flextime</td>
<td>Some people favor Flextime (being able to work hours outside the normal 9-5 range; or being able to work from home) as a way to make work-life balance more attainable for new parents. What about you? To what extent would you support companies providing Flextime so that parents can work nontraditional hours or work from home rather than the office?</td>
</tr>
</tbody>
</table>

Note. Policy items and the questions that were included in the survey. Participants were asked to rate from 1 to 7 each individual policy in terms of to what extent they support them, 1 meaning strongly oppose and 7 meaning strongly support.
questions including their sex, age, ethnicity, educational attainment, political orientation, marital status, and parental status.

Results

To begin the analysis, the item-whole correlations for each of the essentialism items compared to the others within the targets of mother and father were examined. This was done to see if each item correlated well with the set as a whole and to ensure that they were all measuring the same thing (essentialism). The items for the mother target group were found to be highly reliable (12 items; $\alpha = .80$) as well as those for the father target group (12 items; $\alpha = .76$).

The next analysis was in regards to the first hypothesis; mothers are essentialized more than fathers. The design of this analysis was a 4 (condition; BioDad, SocialDad, Control, BioMom) x 2 (participant sex; male, female) ANOVA with the dependent variable of MomDadDiff, which was calculated by subtracting the average essentialism ratings for fathers from the average essentialism ratings for mothers. It was found that the difference in the average essentialism ratings between mothers and fathers was greater than zero ($\text{MomDadDiff} = 0.32$), which means that there was a difference in essentialism ratings between mothers and fathers ($F(1, 400) = 105.61, p < .001$) with mothers ($M = 4.46$) having significantly higher ratings compared to fathers ($M = 4.15$) (see Figure 1).
Figure 1. Average essentialism ratings for the targets mother and father where higher numbers indicate higher perceived essentialism. For mothers, $M = 4.46$ and for fathers, $M = 4.15$. MomDadDiff = 0.32 (difference between average essentialism means for Mothers and Fathers).

When examining condition difference in terms of the dependent variable MomDadDiff, it was predicted in hypothesis 2 that a linear contrast would be found with the largest difference in average essentialism ratings between mothers and fathers in the BioMom condition ($M = 0.48$), followed by the Control condition ($M = 0.33$), then the SocialDad condition ($M = 0.26$), and the smallest difference in the BioDad condition ($M = 0.20$). This hypothesis was supported and a significant linear contrast was found and followed the hypothesized ordering of conditions ($F(1, 400) = 11.04, p < .001$) (see Figure 2). There was no significant quadratic or cubic orthogonal contrasts found ($Fs < 1$).
Figure 2. Difference between the average essentialism ratings of mothers and fathers. Reflects the hypothesized linear contrast between the conditions with the largest difference in ratings (MomDadDiff) being in the BioMom condition ($M = 0.48$), followed by the Control condition ($M = 0.33$), then the SocialDad condition ($M = 0.26$), and the smallest difference in the BioDad condition ($M = 0.20$).

There was also a significant main effect of participant sex on MomDadDiff ($F(1, 400) = 10.36$, $p < .05$). The difference between essentialism ratings for mothers and fathers was, on average, greater amongst the female participants (female MomDadDiff = 0.42) compared to the average rating difference for the male participants (male MomDadDiff = 0.22). Specifically, females essentialized fathers less ($M = 4.06$) than males did ($M = 4.24$), but both essentialized mothers in a relatively similar manner (females $M = 4.48$, males $M = 4.45$) (see Figure 3). There were no significant orthogonal contrasts or interaction between subject sex and condition (all Fs < 1).
Figure 3. The difference between essentialism ratings for mothers and fathers was larger for the female participants (female MomDadDiff = 0.42) compared to the rating difference for the male participants (male MomDadDiff = 0.22). Females essentialized fathers less ($M = 4.06$) than males did ($M = 4.24$), but both essentialized mothers in a relatively similar manner (females $M = 4.48$, males $M = 4.45$).

Thus far, support for the first and second hypotheses have been found. The analysis of the essentialism ratings for mothers versus the ratings for fathers concluded that participants across all four conditions essentialized mothers more than they essentialized fathers (hypothesis 1). This difference in essentialism ratings between mothers and fathers within each condition was found to follow the pattern that was predicted in the second hypothesis, with the largest difference being in the BioMom condition, followed by the Control condition, the SocialDad condition, and the smallest difference in the BioDad condition.
But where are the effects happening? Are participant’s perceptions of fathers or mothers changing? To examine this, the essentialism ratings for mothers and fathers separately across the conditions. When doing so, it was observed that essentialism ratings were higher in the Control condition compared to the other three conditions. This was true not only for ratings of mothers and fathers, but of cigarette smokers and depressed individuals as well. This may have been due to participants in the Control condition explicitly being asked to think and to write about how being a member of each group affected the lives of the members of those groups. That is, participants in the Control condition began by bringing to mind ways that membership in the group is meaningful and real, and this may very well have resulted in higher overall levels of perceived essentialism of the groups.

To test whether participants in the Control condition rated the four target groups on average significantly higher than those in the other three conditions, each of the “active” condition’s (BioDad, SocialDad, and BioMom) average essentialism scores were compared against that of the Control condition (see Figure 4). The dependent variable for this analysis was labeled AverageEss, which was calculated by combining the average essentialism ratings of all four of the target groups (mothers, fathers, cigarette smokers, and chronically depressed) and then dividing by four. The Control condition was found to have an AverageEss score significantly different from BioDad ($F(1, 400) = 4.51, p < .05$), SocialDad ($F(1, 400) = 5.81, p < .05$), and BioMom ($F(1, 400) = 7.71, p < .05$). All of the other conditions did not differ from each other in terms of AverageEss (all $Fs < 1$).
Figure 4. Combined average essentialism ratings for the targets mothers, fathers, cigarette smokers, and chronically depressed (AverageEss), for each condition. The Control condition was found to have an AverageEss score significantly different from BioDad ($F(1, 400) = 4.51, p < .05$), SocialDad ($F(1, 400) = 5.81, p < .05$), and BioMom ($F(1, 400) = 7.71, p < .05$).

Initially the goal was to use ratings in the Control condition as a baseline for perceptions of each target group (mothers and fathers) and to examine how the manipulations altered perceptions relative to this baseline. However, the fact that the Control condition resulted in much greater ratings for all groups meant that although it was fine to use when looking at the difference in ratings for mothers versus fathers (because the condition mean differences are eliminated in these difference scores), it was not useful as a baseline for comparisons within each target group. Because of this, essentialism ratings within each target were examined by performing a new analysis where only the three active conditions (BioDad, SocialDad, and BioMom) were included. Before testing the effects for each target group, however, an analysis
on the MomDadDiff variable was performed to make sure that the linear contrast reported above persisted. It did: The linear effect for condition was still found to be significant even when the Control condition was excluded ($F(1, 303) = 10.60, p < .001$) and there was no significant quadratic or cubic orthogonal effect ($Fs < 1$). The significant main effect of target was also still present ($F(1, 303) = 72.17, p < .001$), which means that mothers continued to be essentialized more than fathers. The significant main effect of participant sex remained present ($F(1, 303) = 4.39, p < .05$) with females MomDadDiff ratings higher than that of males. Finally, there was also no significant interaction between participant sex and condition ($F < 1$). Thus all of the principle effects from the analysis of the MomDadDiff score were still present even with the exclusion of the Control condition.

Next, to assess whether the condition changes in the MomDadDiff ratings was due to a change in participants’ perceptions of mothers, of fathers, or of both, ratings within each target were examined, again including just the three active conditions (see Figure 5). When comparing the conditions using the dependent variable MomEssentialism (average essentialism ratings for mothers), there were no significant difference between the three conditions (all $Fs < 1$). This means that participants’ essentialism ratings of mothers were similar to each other, regardless of which condition they were in. With the dependent variable of DadEssentialism (average essentialism rating for fathers), there was a significant linear contrast ($F(1, 303) = 7.28, p < .05$) with the lowest DadEssentialism in the BioMom condition ($M = 3.99$), followed by SocialDad ($M = 4.09$), and the highest in BioDad ($M = 4.28$) (see Figure 5). This supports the hypothesis of how each condition would compare to one another in terms of the difference in essentialism ratings between mothers and fathers. It was also found that participants’ perceptions of fathers
were changing rather than their perceptions of mothers. This means that by presenting participants with the biological changes that actually happen when men become fathers, the group becomes a deep, meaningful category, with an underlying “essence”, which answers the study’s original question of if it is possible to manipulate essentialist perceptions of fathers.

Figure 5. Average essentialism ratings for mothers and fathers within each of the three active conditions. There was no significant difference in the average essentialism ratings for mothers between each condition. For the average essentialism ratings for fathers, there was a significant linear contrast \(F(1, 303) = 7.28, p < .05\) with the lowest average rating in the BioMom condition \(M = 3.99\), followed by SocialDad \(M = 4.09\), and the highest in the BioDad condition \(M = 4.28\). This shows how the BioDad condition was successfully able to increase perceived essentialism for fathers and making this category viewed as a more “real” and meaningful group with an underlying “essence”.

![Essentialism Ratings: Condition x Target](image-url)
There was also a marginally significant quadratic effect between participant sex and condition \( (F(1, 303) = 3.10, p = .08) \) where males in the BioDad condition rated dads particularly high on essentialism \( (M = 4.48) \) and females in the BioMom condition rating dads particularly low on essentialism \( (M = 3.86) \) (see Figure 6). Given that this effect only approached significance, future research will need to be conducted to see if this effect is replicated.

**Figure 6.** Average essentialism ratings for fathers (DadEssentialism) separated by participant sex and condition. A marginally significant quadratic effect was found between participant sex and condition \( (F(1, 303) = 3.10, p = .08) \) where males in the BioDad condition rated dads particularly high on essentialism \( (M = 4.48) \) and females in the BioMom condition rating dads particularly low on essentialism \( (M = 3.86) \).

Participants’ levels of support for each of the four work-related policies was the final step in the analysis. Although this was an exploratory variable and it was not clear what trends would
be found, it was hypothesized that participants in the BioDad and SocialDad condition would have a relatively high level of support for each of the policies. This is because in both conditions, the articles that the participants read in the BioDad condition alluded to fathers being similar to mothers in terms of biological changes and in the SocialDad condition, fathers were described as playing a more active parenting role than before. The three policies were analyzed individually with the dependent variable being the level of support for the policy and the independent variables of condition and participant sex (see Figure 7 and 8). Condition differences for each of the three policies were analyzed using a pairwise comparison. The first policy looked at was paid leave and a marginally significant main effect of condition \( (F(3, 400) = 14.88, p = .08) \) with a significant cubic contrast \( (p < .05) \) was found. The highest level of support for this policy was in the BioMom condition \( (M = 6.09) \) and the SocialDad condition \( (M = 6.03) \) and and the lowest level of support in the BioDad condition \( (M = 5.63) \) and Control condition \( (M = 5.64) \). There was also a significant main effect of participant sex \( (F(1, 400) = 14.88, p < .001) \) where on average, females \( (M = 6.17) \) supported paid leave policies more than males \( (M = 5.53) \). Support for daycare at the workplace was then analyzed. There was a marginally significant main effect of condition \( (F(3, 400) = 2.46, p = .06) \) with a significant cubic contrast \( (p < .05) \). Participants in the SocialDad condition \( (M = 5.47) \) supported daycare policies significantly more than those in the BioDad condition \( (M = 4.94) \), the Control condition \( (M = 4.80) \), and the BioMom condition \( (M = 4.87) \). There was also a significant main effect of participant sex \( (F(1, 400) = 15.09, p < .001) \) where females were more in favor of daycare policies \( (M = 5.40) \) than males were \( (M = 4.64) \). The last policy analyzed was flextime, which only resulted in a main effect of participant sex \( (F(1, 400) = 5.59, p < .05) \) where females supported flextime policies \( (M = 6.47) \) more than
males ($M = 6.20$). There was no effect of or interactions with condition for flextime policies ($F < 1$).

*Figure 7.* Average support ratings of each condition for the three work-related policies. For paid leave policies, the highest amount of support was in the SocialDad condition ($M = 6.03$) and BioMom condition ($M = 6.09$) and the lowest amount of support in the BioDad condition ($M = 5.63$) and Control condition ($M = 5.64$). For policies that would require employers to provide workers with on-site daycare, the highest level of support was in the SocialDad condition ($M = 5.47$), which was significantly more than the BioDad condition ($M = 4.94$), the Control condition ($M = 4.80$), and the BioMom condition ($M = 4.87$). There was no significant difference between the conditions in regards to support for flextime policies.
Figure 8. Male and Female participants’ average support ratings for each of the three work-related policies. For paid leave policies, females had higher support ratings ($M = 6.17$) than males ($M = 5.53$). For daycare policies, females had higher support ratings ($M = 5.40$) than males ($M = 4.64$). Females, again, had higher support ratings for flextime policies ($M = 6.47$) than males ($M = 6.20$).

**Discussion**

The concept of psychological essentialism has gained the interest of numerous researchers and has been applied to how people perceive various social groups (i.e., race, gender, sexuality). By being able to understand the process of and the reasons for essentializing certain groups, one is better able to understand the social dynamics within and between groups. The present study focused on how people differently essentialize mothers and fathers and whether or not it is possible to manipulate essentialist perceptions and how these perceptions affect other judgments about mothers and fathers.
This study was able to confirm all three of the originally stated hypotheses. In regards to the first hypothesis, mothers were essentialized more than fathers were across all four conditions and for both female and male participants. The extent to which each condition essentialized mothers over fathers was also in conjunction with the second hypothesis, where the largest difference between essentialism ratings was found in the BioMom condition, followed by the Control condition, then the SocialDad condition, and the smallest difference being in the BioDad condition. In regards to the third hypothesis, the results for policy support adhered to what was expected by the SocialDad condition demonstrating the most positive effect on participants’ support for each work-related policy.

One of the main goals of this study was to determine if essentialist perceptions of fathers were able to be manipulated. By showing that the gaps in essentialism ratings between mothers and fathers was different within each condition and was caused by changes in the ratings of fathers rather than of mothers, it was concluded that essentialist perceptions of fathers could indeed be manipulated. Therefore, the group of fathers can be made to be viewed as more “real”, meaningful, and having an underlying “essence”. Dar-Nimrod and Heine (2011) have come to many conclusions about the relationship between genetics and psychological essentialism. The process of genetic essentialism, they explain, is the process by which people’s understandings of genetics with relation to life outcomes is shaped by their psychological essentialist biases. The significantly higher level of essentialist perceptions for fathers amongst the participants in the BioDad condition as a result of enhancing the participants’ understanding of the biological changes that occur when men become fathers exemplifies this process that Dar-Nimrod and Heine outlined.
By informing people about the biological changes that men experience when they become father, people’s perception of that group may be altered. Many people view women as being naturally nurturing and caregiving, especially when compared to men. Cole, Cecchi, Feldbaum, and Petty (2007) argue that this is the result of the connection between these traits and women’s biological capacity to bear and nurse children. It could be expected that when fathers are described as undergoing biological changes as a function of having and caring for children, they too could be viewed as nurturing and caregiving. According to Gaunt (2006), essentialist beliefs and attitudes towards fathers affects what people believe to be the father’s role in regards to the allocation of child care responsibilities. Therefore, by viewing fathers in more essentialist terms, it may be possible to view the roles of mothers and fathers as more similar than they currently are.

An interesting trend that was found when assessing the participants’ answers to whether or not they understood the article that they just read and if they believed the information to be true was that in the BioDad condition, many participants talked about the similar changes that happen when women become mothers. This trend was not found in the BioMom condition in regards to the participants relating the information they read to fathers. Examples of such answers from the BioDad condition included, “I know when mothers nurse they produce this chemical [oxytocin], so it seems logical that males could have [a] similar effect” and “as there are with new mothers, I’m certain there would be changes in emotional characteristics when a man becomes a new father”. This exemplifies how when biological changes that men experience when they become fathers is discussed, participants also reflect on the biological changes that women experience when they become mothers. This means that any discussion of biological
changes that either parent experiences can lead to an increase in essentialist perceptions of mothers.

Although individuals have a tendency to explain what determines the characteristics of others in terms of biological causes, they also base their explanations on social causes (Rangel & Keller, 2011). To assess how social information affects the participants’ essentialist conceptions of fathers, this study also included the SocialDad condition. In accordance with Rangel and Keller’s argument, the participants’ in this condition did rate fathers with a high level of essentialism similar, although not as much as, those in the BioDad condition. This exemplifies the social component of essentialism and demonstrates that an increased activeness in parenting could be associated with increases in essentialist perceptions.

An interesting finding from the analysis of support for work-related policies was that participants in the BioMom condition were in favor of paid leave, but less supportive of daycare being provided by employers. Many researchers have made the argument that increased essentialist perceptions are associated with an increased endorsement of stereotypical beliefs about that group (Keller, 2005; Yzerbyt, Rogier & Fiske, 1998, Dar-Nimrod & Heine, 2011). Dar-Nimrod and Heine have also argued that explaining behaviors of a group in biological terms is one of the stronger predictors of stereotyping. With that in mind, this could explain why the participants in the BioMom condition were less in favor of daycare policies. The role of mothers has historically deemed them as the primary caretakers of their children, so by making the association between maternal behaviors and biological causes, this stereotypical view of a mother’s role is further strengthened. Therefore, mothers should stay at home with their children instead of handing that responsibility over to a daycare.
Another trend that was found in the analysis of participants’ level of policy support was the relatively high levels of support for paid leave and daycare policies that was found in the SocialDad condition. Participants in the SocialDad condition supported paid leave policies as much as those in the BioMom condition and supported daycare policies the most out of all of the conditions. It seems that showing participants how fathers are taking on an increasingly more active role in parenting had the most positive effect on policy support. The high level of support for paid leave policies in this condition was an especially important finding because it may demonstrate that the participants in the SocialDad condition believe that both mothers and fathers should be offered paid leave when their child is born.

A limitation of this study was the difference in survey format for the Control condition compared to the other three conditions. Unlike in the BioDad, BioMom, and SocialDad conditions, the Control condition required the participants to actively reflect about mothers and fathers, while the other three conditions only reflected about one of the target groups. This resulted in higher overall essentialism ratings for all of the target groups, making it unusable for comparing against the other conditions to determine where the changes in essentialist perceptions was occurring. Future research could fix this by providing the Control condition participants with a “control article” to make the survey more similar to those in the other three “active” conditions.

A trend that was found in the present study that could be further assessed in future research is why females essentialize fathers significantly less than men. A potential reason for this could be that females view a mother’s role as more active and necessary for a child’s well-being compared to the role fathers play in parenting. It could also be easier for females to understand the natural and instinctive connection mothers have with her child through the bond
created during pregnancy compared to the connection a father may have with his child after it is born. It would be interesting to see if this trend could be replicated and better explained with more research.

By essentializing a group of individuals, such as mothers or fathers, people view them as being a real and naturally occurring category with some kind of underlying essence. Previous research has demonstrated that by describing the biological changes that occur when women become mothers, peoples’ essentialist perceptions of the category of mother become heightened. The current study applied that concept to the category of fathers and found that when participants are told about the biological changes that men experience when they become fathers, this group also is viewed in more essentialist terms. This exemplified just how influential individuals’ understanding of the biological basis of a certain category is on how the group is essentialized.
References


BioDad Article

New research shows that men undergo dramatic change as they take on the role of father. Specifically, scientists have found that they experience hormonal changes and that their brains change in structure and activation. This finding is not necessarily surprising. Scientists have known for some time that the brain is “remarkably plastic,” meaning that its structure and activity can change when circumstances change. Specifically, when men care for and interact with their newborn child, they experience an influx of the hormone oxytocin. This hormone, known as the “love drug”, changes the brain and is related to changes in mood regulation and parenting behavior.

In the past, oxytocin levels could only be assessed by direct measurement in the brain or spinal fluid (a very invasive procedure). But recent developments now permit easy and instantaneous assessment of oxytocin levels through a simple blood draw. This development has
revealed remarkable changes in men following the birth of a child. Oxytocin enhances empathic concern and helping behavior. In part due to these changes, most fathers become more protective of their child and motivated to help them thrive. According to studies, almost any kind of interaction with the baby can increase oxytocin: physical contact, verbal interactions, even just directing the infant’s attention to an object. Not surprisingly, fathers who spend more time with their babies report having a stronger connection with them. This is likely in part because of the oxytocin that flows when they interact, deepening the bonds between a father and his child.

Oxytocin (ball-and-stick) bound to its carrier protein, neurophysin (ribbons)

In addition to the hormonal changes that men experience when they become fathers, the structure as well as activity of various brain regions begin to adapt. In particular, the amygdala, hypothalamus, and prefrontal cortex (PFC), have all been shown to increase in volume and/or activity during a man’s transition into fatherhood. Ongoing research will further explore the role of each of these brain regions to changes that men experience in their behavior as a function of becoming a father.
New research shows that women undergo dramatic change as they take on the role of mother. Specifically, scientists have found that they experience hormonal changes and that their brains change in structure and activation. This finding is not necessarily surprising. Scientists have known for some time that the brain is “remarkably plastic,” meaning that its structure and activity can change when circumstances change. Specifically, when women care for and interact with their newborn child, they experience an influx of the hormone oxytocin. This hormone, known as the “love drug”, changes the brain and is related to changes in mood regulation and parenting behavior.

In the past, oxytocin levels could only be assessed by direct measurement in the brain or spinal fluid (a very invasive procedure). But recent developments now permit easy and instantaneous assessment of oxytocin levels through a simple blood draw. This development has revealed remarkable changes in women following the birth of a child. Oxytocin enhances empathic concern and helping behavior. In part due to these changes, most mothers become more
protective of their child and motivated to help them thrive. According to studies, almost any kind of interaction with the baby can increase oxytocin: physical contact, verbal interactions, even just directing the infant’s attention to an object. Not surprisingly, mothers who spend more time with their babies report having a stronger connection with them. This is likely in part because of the oxytocin that flows when they interact, deepening the bonds between a mother and her child.

![Oxytocin (ball-and-stick) bound to its carrier protein, neurophysin (ribbons)](image)

In addition to the hormonal changes that women experience when they become mothers, the structure as well as activity of various brain regions begin to adapt. In particular, the amygdala, hypothalamus, and prefrontal cortex, have all been shown to increase in volume and/or activity during a woman’s transition into motherhood. Ongoing research will further explore the role of each of these brain regions to changes that women experience in their behavior as a function of becoming a mother.
New research shows that men have undergone a dramatic change in their role as fathers. Specifically, social scientists have found that men now spend nearly 2.5 times as many hours with their children as they did in 1985. This finding is not necessarily surprising. Social scientists have for some time documented that social roles are flexible, meaning that they can change when circumstances change. Specifically, as societal expectations and patterns have shifted over the past 30-40 years, so too have expectations and patterns of behavior for new fathers. Men now spend more time interacting with their newborn child, and actively participating in parenting behavior.

In the past, researchers have measured time spent with children through cumbersome “time-use” diaries. But recent developments in mobile technology now permit easy and instantaneous assessment not only of how individuals spend their time, but of thoughts and emotional reactions.
they are experiencing. This development has revealed remarkable changes in men following the birth of a child. Overall, men report high levels of empathic concern, feeling protective of their child and motivated to help him or her thrive. Importantly, however, studies that utilize mobile-technology with real-time tracking of fathers’ reactions show that these feelings are especially strong immediately following a direct interaction with the baby whether it is physical contact, verbal interactions, even just directing the infant’s attention to an object. Not surprisingly, fathers who spend more time with their babies report having a stronger connection with them. This is likely in part because of the connection that derives from interaction, deepening the bonds between a father and his child.

Portrayal of Fathers on Television Shows Depicting Various Historical Time Points
In addition to the changes in time spent with children that men have experienced as fathers, the nature of their interactions with their children has also changed. In particular, it is now common for a hurt child to run to his or her father for comfort, to see fathers at the playground with their children, and for fathers to help with a school costume or class project. Ongoing research on societal trends will explore the effects of these role changes to the long-term bonds formed between fathers and their children.

**Control Condition**

Participants in the control condition were asked the following: To begin, we would like you to think about four different groups (cigarette smokers, people who are chronically depressed/ have persistent and pervasive feelings of sadness, mothers, and fathers). How much does being a member of that group affect these people’s lives? In the space below, write 1-2 sentences about what the people in each group are like and how being in the group affects their lives.
### Division of Tasks Items

<table>
<thead>
<tr>
<th>Typical Mother Behaviors</th>
<th>Typical Father Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be a stay-at-home parent</td>
<td>Provide financially for the family</td>
</tr>
<tr>
<td>Comfort a crying a baby</td>
<td>Make an upset toddler laugh and smile</td>
</tr>
<tr>
<td>Change a baby’s diaper</td>
<td>Teach children to stick up for themselves</td>
</tr>
<tr>
<td>Discipline a misbehaving 2-year-old</td>
<td>Get their kids to do their chores</td>
</tr>
<tr>
<td>Comfort a 7-year-old whose best friend has just moved away</td>
<td>Improve kids’ school performance</td>
</tr>
<tr>
<td>Arrange school activities for children</td>
<td>Make sure the family lives in a nice neighborhood</td>
</tr>
<tr>
<td>Help organize a school function</td>
<td>Teach kids how to handle teasing</td>
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</tbody>
</table>

Participants were asked to assess each of the division of tasks items and rate them from 1 to 7 where 1 indicated that the task was easier for a mother to do and 7 indicated that the task was easier for a father to do.

Using the dependent variable of BehaviorDiff (average ratings of Typical Father Behaviors – average ratings of Typical Mother Behaviors) there was a significant quadratic contrast \( p < .05 \) for condition, where the largest difference in ratings was found in the Control condition \( (M = 1.35) \), followed by the SocialDad condition \( (M = 1.24) \), the BioDad condition \( (M = 1.13) \), and the smallest difference in the BioMom condition \( (M = 1.02) \). Therefore, the participants in the BioMom condition were found to have the smallest difference in what they believed was easier for mothers versus fathers to do.

Looking at just the average ratings for Typical Mother Behaviors (BehaviorsMom), there was a significant cubic contrast \( p < .05 \) where the highest ratings were found in the BioMom condition.
condition ($M = 3.24$), followed by the BioDad condition ($M = 3.16$) and the SocialDad condition ($M = 3.20$), and the lowest ratings in the Control condition ($M = 3.00$). Overall, all participants believed that the Typical Mother Behaviors were equally as easy for mothers and fathers with participants in the BioMom condition rating them as slightly easier for mothers to do compared to fathers.

For the average ratings of Typical Father Behaviors (BehaviorsDad), there was a significant quadratic contrast for condition ($p < .05$) where the highest ratings were in the SocialDad condition ($M = 4.43$), followed by the Control condition ($M = 4.34$), then the BioDad condition ($M = 4.29$), and the lowest ratings in the BioMom condition ($M = 4.26$). This means that overall, the participants believed that the Typical Father Behaviors were easier for fathers to do compared to mothers.

### Topnotch Items

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Survey Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNMomPro</td>
<td>If a woman is a successful mother of a preschooler, how easy is it for her to also be a topnotch professional?</td>
</tr>
<tr>
<td>TNDadPro</td>
<td>If a man is a successful father of a preschooler, how easy is it for him to also be a topnotch professional?</td>
</tr>
<tr>
<td>TNProMom</td>
<td>If a woman is a successful professional, how easy is it for her to also be a topnotch mother of a preschooler?</td>
</tr>
<tr>
<td>TNProDad</td>
<td>If a man is a successful professional, how easy is it for him to also be a topnotch father of a preschooler?</td>
</tr>
</tbody>
</table>

Participants were asked to rate each of the topnotch items from 1 to 7, with 1 meaning that the item would be quite easy and 7 meaning the item would be quite difficult. The dependent variable used for the analysis was the average rating of the four items combined and the
independent variables were the participant sex (female or male), condition (BioDad, SocialDad, Control, BioMom), the target (mother or father), the direction (ParentPro or ProParent).

There was a significant main effect of participant sex ($F(1, 400) = 11.03, p < .05$) where male participants had higher average topnotch ratings ($M = 4.18$) compared the female participants ($M = 3.71$). This means that male participants, on average, found all item situations as being more difficult compared to the female participants.

There was a significant main effect of target ($F(1, 400) = 48.30, p < .001$) where the items involving mothers were rated as being more difficult ($M = 4.15$) than the items involving fathers ($M = 3.75$). This means that the participants viewed fathers as more capable of both of the item situations compared to mothers.

There was a significant main effect of direction ($F(1, 400) = 9.59, p < .05$) where ProParent was rated as being more difficult ($M = 4.02$) than ParentPro ($M = 3.88$). This means that participants believed that work interferes with being a topnotch parent more than being a parent interferes with being a topnotch professional.

There was a marginally significant interaction between condition and direction ($F(3, 400) = 2.38, p = .07$) where in the BioDad condition, there was the largest difference ($M$ Diff $= 0.27$) between the average ratings of ParentPro ($M = 3.74$) and ProParent ($M = 4.01$), followed by the difference in ratings in the Control condition ($M$ Diff $= 0.26$, ParentPro $M = 3.98$, ProParent $M = 4.24$), then the difference in ratings in the BioMom condition ($M$ Diff $= 0.10$, ParentPro $M = 3.91$, ProParent $M = 4.00$), and the smallest difference in ratings in the SocialDad condition ($M$ Diff $= 0.26$, ParentPro $M = 3.87$, ProParent $M = 3.83$). With the exception of the SocialDad condition,
condition, where there was a very small difference, participants in all conditions responded that work interferes with family more than family interferes with work.

There was a significant interaction between target and direction \((F(1, 400) = 13.13, p < .001)\) where for mothers, participants rated work as interfering with family \((M = 4.16)\) slightly more than family interferes with work \((M = 4.13)\) and for fathers, rated work as interfering with family \((M = 3.89)\) more than family interferes with work \((M = 3.62)\).

There was a marginally significant three-way interaction between condition, target and direction \((F(3, 400) = 2.24, p = 0.08)\) where in the BioDad condition, participants believed that for mothers, work interfered with family \((M = 4.02)\) more than family interfered with work \((M = 4.00)\) and for fathers, work also interfered with family \((M = 4.00)\) more than family interfered with work \((M = 3.48)\). In the SocialDad condition, participants believed that for mothers, family interfered with work \((M = 4.07)\) slightly more than work interfered with family \((M = 3.98)\) and for fathers, work interfered with family \((M = 3.69)\) about the same amount that family interfered with work \((M = 3.67)\). For the Control condition, participants believed that for mothers, work interfered with family \((M = 4.46)\) slightly more than family interfered with work \((M = 4.36)\) and for fathers, work interfered with family \((M = 4.02)\) more than family interferes with work \((M = 3.61)\). In the BioMom condition, for mothers, there was no significant difference between family interfering with work \((M = 4.10)\) versus work interfering with family \((M = 4.17)\) and for fathers, it was believed that work interfered with family \((M = 3.84)\) slightly more than family interfered with work \((M = 3.71)\).
Dependent Variables for Explicit Role Associations

<table>
<thead>
<tr>
<th>Dependent Variable Name</th>
<th>Variable Description</th>
</tr>
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<tbody>
<tr>
<td>HoursType</td>
<td>(Hours Father Works for Pay + Hours Mother Works for Pay) – (Hours Father Cares for Child + Hours Mother Cares for Child)</td>
</tr>
<tr>
<td>HoursTarget</td>
<td>(Hours Mother Works for Pay – Hours Father Works for Pay) + (Hours Mother Cares for Child – Hours Father Cares for Child)</td>
</tr>
<tr>
<td>HoursInteraction</td>
<td>(Hours Mother Works for Pay – Hours Father Works for Pay) – (Hours Mother Cares for Child + Hours Father Cares for Child)</td>
</tr>
</tbody>
</table>

Participants were asked the question “in an ideal world, how much do you think mothers and fathers would spend on work (for pay) and how much on caring or attending to children?” and then asked to respond to the question by entering the ideal number of hours in a typical workday that mothers and fathers (separately) would work for pay and caring or attending to children.

For the dependent variable of HoursType (work hours versus child hours), there were no significant main effects or interactions. This means that the participants responded, on average, similar number of hours for both working for pay and caring or attending to children. For HoursTarget (total number of hours for fathers versus mothers), there was a significant main effect of participant sex ($F(1, 399) = 17.03, p < .001$). For HoursInteraction, there were no significant interaction between target (mothers or fathers) and type (work hours or child hours).