

# Evaluating Claims of Intersectionality

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Over the last 40 years, scholars have adopted many different approaches to studying intersectionality. A common refrain in the literature is that one cannot evaluate the implications of an intersectional theory with an interaction model. In this article, we demonstrate that a large class of claims regarding intersectionality, whether quantitative or qualitative in nature, can only be evaluated within an interactive framework. There is some uncertainty among those who adopt quantitative methods in their intersectional research about how interaction models work. In addition to outlining the necessary evidence to support claims of intersectionality, we provide useful advice on how to appropriately specify and interpret interaction models to better evaluate these types of claims. We believe that considerable progress can be made in our empirical and theoretical understanding of intersectionality if scholars follow the advice provided in this article.

It remains a common refrain that one cannot or should not evaluate claims of intersectionality with an interaction model. Reingold, Haynie, and Widner (2020, 13) state that interaction “models are too rigid for intersectional analysis.” Weldon (2006, 243) criticizes quantitative scholars for incorrectly assuming “that *intersectional* effects are the same as multiplicative effects.” Similarly, Hancock (2007, 67) makes an explicit distinction between intersectionality approaches and multiplicative or interactive approaches. Many of these claims stem from uncertainty about how interaction models work and, indeed, on what constitutes an interaction model. In this article, we demonstrate that a large class of intersectional claims, whether quantitative or qualitative in nature, can only be evaluated within an interactive framework. We also provide advice on how to interpret interaction models and present results in the context of quantitative intersectionality research.

What is intersectionality? Intersectionality rejects the separability of categories of difference such as gender, race, sexuality, and class (Collins 1990; Crenshaw 1989, 1991; McCall 2005; Simien 2007; Weldon 2006). It represents a challenge to a form of group essentialism that emphasizes one common identity category above all others and that marginalizes the experiences of group members who differ in other aspects of their identity (Alexander-Floyd 2012). It conceptualizes “categories not as distinct but as always permeated by other categories” (Cho, Crenshaw, and McCall 2013b, 795). The intellectual origins of intersectionality research, which are rooted in Black feminist thought, multi-racial feminism, and critical race theory, are based on challenging the overlapping structures of oppression that legitimize existing power relations and that affect particular marginalized groups such as Black women.<sup>1</sup> The objective of intersectionality research is not so much to highlight the

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1. Intersectionality has a long history as an activist orientation that has shaped academic thinking (Gines 2011). While Crenshaw (1989, 1991) is typically credited with the term “intersectionality,” Patricia Hill Collins has long made the study of “intersecting oppressions” the focus of her research agenda (Collins 1990). Earlier research by scholars such as hooks (1984), Moraga and Anzaldúa (1984), Smith (1983), and Spelman (1988) expressed similar sentiments. Intersectionality-adjacent arguments have an even longer history. Much of the theoretical foundation for contemporary work on intersectionality can be traced

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different identity groups that are created by the multiple combinations of overlapping categories of difference but rather to uncover how structures of power interact to create and perpetuate inequalities among these different groups (Cho et al. 2013b; Else-Quest and Shibley-Hyde 2016; May 2015). As Crenshaw recently put it, intersectionality is “a lens, a prism, for seeing the ways in which various forms of inequality often operate together and exacerbate each other. We tend to talk about race inequality as separate from inequality based on gender, class, sexuality, or immigrant status. What’s often missing is how some people are subject to all of these, and the experience is not just the sum of the parts” (Steinmetz 2020). Many have begun to view intersectionality as a general theoretical framework or “analytic sensibility” (Cho et al. 2013b, 795) that can be applied to a much wider range of contexts and categories of difference than those that motivated the foundational work on intersectionality.<sup>2</sup> The focus on structural factors highlights that analyses of intersectional claims are necessarily context dependent and contingent on the characteristics of a given scenario. We simply note here that interaction models are commonly acknowledged to be well suited for taking account of structure, context, and causal complexity (Brambor, Clark, and Golder 2006; Clark, Gilligan, and Golder 2006; Clark and Golder 2023; Kam and Franzese 2007).

McCall (2005, 1773) argues that scholars have adopted three broad approaches to the study of intersectionality. Those who adopt the anticategorical approach emphasize the importance of deconstructing categories of difference and argue that the social world is “too irreducibly complex . . . to make

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back to the ideals of the National Council of Negro Women founded in 1935 (Hosford 2012), the notion of Black women experiencing “multiple jeopardy” because of racism, classism, and sexism (Beale 1970; King 1988), and the concept of “simultaneity” developed in the 1970s by the Combahee River Collective. As Cooper (2016), Hancock (2013), and May (2015) remind us, intersectional thinking goes back much further than even this. Sojourner Truth’s 1851 “Ain’t I a Woman” speech is widely acknowledged for laying the foundation for intersectional feminism. Harriet Ann Jacobs (1861) also demonstrates an early awareness of intersectionality when she laments that “Slavery is terrible for men; but it is far more terrible for women. Superadded to the burden common to all, they have wrongs, and sufferings, and mortifications peculiarly their own.” Along similar lines, Anna Julia Cooper (1892) characterizes Black women as contending with both a “woman question” and a “race problem.”

2. The legitimacy of this development is contested to some extent by those who wish to maintain the focus of intersectionality research on particular oppressed groups. Black women, for example, are often considered to be the “prototypical intersectional subjects” (Nash 2008, 4), and recent work considers the potential dangers, challenges, and opportunities associated with expanding the conceptual and empirical focus of intersectionality research beyond Black women and the United States (Alexander-Floyd 2012; Carbado et al. 2013; Cho, Crenshaw, and McCall 2013a; Choo and Ferree 2010; Dhamoon 2011; Davis and Zarkov 2017).

fixed categories anything but simplifying social fictions.” The anticategorical approach largely rejects attempts at categorization. Those who adopt the intracategorical approach recognize that categories of difference, while constructed, are often “real” in that they tend to be stable and socially acknowledged, with important real-world consequences. Intracategorical scholars tend to focus on the inequalities felt by particular groups, such as Black women, who live at the intersections of “traditional” identity categories and whose lived experiences have historically been marginalized or erased. Intracategorical research tends to be dominated by qualitative personal narratives and single-group case studies. Those who adopt the intercategorical approach also recognize the utility of accepting existing categories of difference but set out to explain relationships of inequality among these categories. Intercategorical scholars adopt an explicitly comparative approach with the goal of determining if, when, how, and why inequalities exist across identity groups. Intercategorical scholars commonly produce both qualitative and quantitative research.

While we recognize the dangers of homogenization and simplification that can come when engaging in identity group categorization (Rhodes and Baron 2019), we assume that categorization is both necessary and useful for evaluating how structures of power create and maintain differences and inequalities between social groups. As such, our upcoming discussion does not address the types of intersectional claims made by scholars who adopt the anticategorical perspective. Instead, our attention is primarily focused on how to evaluate the types of intersectional claims found in the intercategorical and, to some extent, intracategorical traditions.

## THE IMPORTANCE OF ADOPTING AN INTERACTIVE FRAMEWORK

While there are different approaches to studying intersectionality, there is a broad consensus that “a fundamental tenet of intersectionality” is that it denies the separability of categories of difference (Bowleg and Bauer 2016, 339). As the editors of *Politics and Gender* put it ahead of their 2007 symposium on intersectionality, “viewing [a category of difference such as] gender as a stand-alone factor necessarily distorts reality. . . . The integrated, mutually constitutive nature of identities is the central premise of intersectionality” (Beckwith and Baldez 2007, 229). While this premise, which can be considered a necessary condition for a claim to be intersectional, is often taken as given, it is, in fact, a falsifiable claim that can be evaluated in a given setting. An empirical analysis of a particular scenario, for example, might reveal that some outcome of interest is driven solely by gender, solely by race, or separately by both gender and race. Any of these results

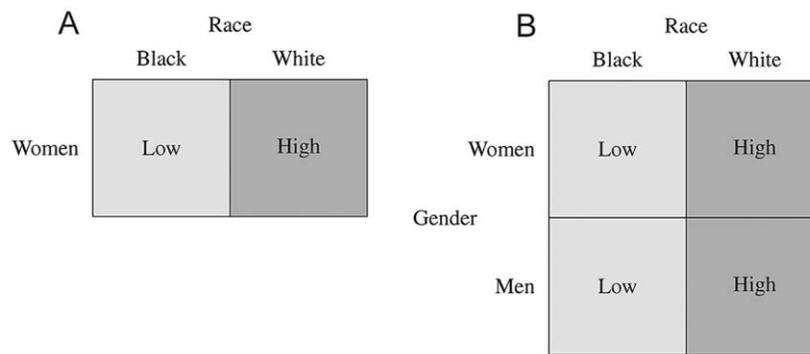


Figure 1. Race, gender, and Republican party support I

would falsify a theoretical claim of intersectionality between gender and race in this particular context.

We are not suggesting that denying the separability of categories of difference is necessarily sufficient for a claim to be intersectional. The literature is replete with slightly different definitions of intersectionality. Some argue, for example, that a claim can only be considered intersectional if it also addresses issues of power and recognizes that the significance of categories is context dependent (Else-Quest and Shibley-Hyde 2016). Much of the appeal of intersectionality research can be attributed to the “ambiguity and open-endedness” of the intersectionality concept (Davis 2008, 67). Our point is simply that there are no definitions of intersectionality, at least within the intracategorical and intercategory traditions, that do not, at least implicitly, deny the separability of categories of difference. It is in this sense that empirical evidence indicating the separability of categories of difference necessarily challenges a claim of intersectionality.

Evaluating whether there is evidence of intersectionality in a given setting requires an interactive framework. Suppose we have an intersectional theory predicting that “the interaction of different axes of structural inequality” (Weldon 2006, 239) related to gender and race affects political orientation such that Black women exhibit low support for the Republican party.<sup>3</sup> One strategy we might adopt to evaluate

3. An issue that arises when adopting an intersectional perspective has to do with the selection of the categories of difference to study. Jointly considering all dimensions of an individual’s identity can “generate an infinite regress that dissolves groups into individuals” (Young 2002, 721). Collins (2008, 74) notes that while “all systems of power are always in every situation . . . the salience of any given system of power will vary across time and space.” She introduces the concept of “dynamic centering,” which confers theoretical significance on particular types of oppression and suggests the value of exploring the contextual salience of specific systems of power (Collins 2008, 69–73). In what follows, we confer theoretical significance on intersectional claims related to race and gender. However, our discussion applies equally well to other axes of structural inequality (Stoll and Block 2015) as well as to cases in which intersectional

the empirical support for our theory would be to examine the political orientation of Black women. Whether we use qualitative methods, such as participant observation, in-depth interviews, and focus groups, or more quantitative methods, such as surveys and experiments, we will presumably reach a judgment about whether Black women exhibit low Republican support. Whether based on descriptive, inferential, or interpretivist reasoning, suppose we decide that Black women do exhibit low support. Can we conclude that we have empirical support for the predicted intersectional impact of gender and race on political orientation?

The type of analysis we have described fits into the intracategorical tradition of intersectionality research. Historically, race scholars tend to emphasize the experiences of Black men, while gender scholars tend to address those of White women. The result is that the experiences of Black women are often overlooked (hooks 1981; Hull, Bell-Scott, and Smith 1993). The strategy we have described is valuable as it gives voice to this marginalized group and contributes to a better sense of inclusion, equity, and legitimacy for members of this group. If centering, describing, or interpreting the standpoint of Black women is the goal, then this strategy is appropriate. However, we might also want to evaluate our theory’s core implication that Black women’s low Republican support is the result of intersecting structural inequalities related to their gender and race. In other words, we might want to know if there is any evidence of intersectionality when it comes to this particular aspect of political orientation. Our current research design cannot speak to whether the effects of gender and race are separable. To determine if support for intersectionality exists requires adopting an

claims are made with respect to more than two categories of difference. In app. G, we provide a discussion of how to evaluate intersectional claims in which there are more than two axes of structural inequality as well as a substantive application that focuses on the intersectional impact of gender, race, and class.

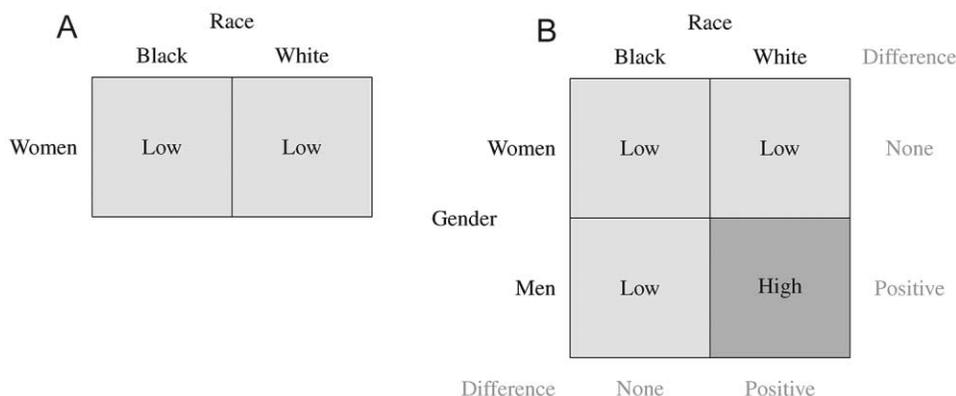


Figure 2. Race, gender, and Republican party support II

explicitly comparative framework. However, not just any comparison is sufficient.

Recognizing the necessity of comparison, we might decide to also look at the level of Republican support exhibited by White women. Suppose that when we do this, we find that White women exhibit high Republican support, a result that is graphically shown in figure 1A. Our new research design clearly reveals that there is heterogeneity along racial lines among women when it comes to Republican support. This is important as it calls into question the uniformity of women's experiences in this particular context and highlights how the experiences of White (or Black) women should not be treated as universal for all women. Significantly, though, this new research design is still unable to speak to the prediction of intersectionality. To see why, suppose we also collect information from Black and White men. One possibility is we obtain the results in figure 1B, which show that Black men exhibit low support and that White men exhibit high support. These additional results immediately reveal that Republican support is determined solely by race and thus that there is no evidence of intersectionality between race and gender.

Suppose instead when we make our initial comparison between Black and White women, we find that both groups exhibit low Republican support, a situation shown in figure 2A. This indicates a certain homogeneity among women when it comes to Republican support. Importantly, though, just as finding heterogeneity along racial lines among women should not be taken as evidence of intersectionality, finding homogeneity should not be taken as evidence of no intersectionality. Suppose again that we collect information about Republican support among Black and White men. One possibility, illustrated in figure 2B, is we find that Black men exhibit low support, while White men exhibit high support. The "Difference" column on the right indicates that the effect of race depends on one's gender; race does not matter for women but does for men. The "Difference" row at the bottom indicates

that the effect of gender depends on one's race; gender does not matter for Black people but does for White people. The evidence in figure 2B clearly indicates that Republican support is not determined separately by race or gender or by the "sum of their parts." Instead, it results from the interaction of race and gender, and hence we have evidence of intersectionality.

Figures 1 and 2 illustrate that the identification of intersectionality requires adopting a particular type of comparative framework. Specifically, we need to compare groups that exhibit variation across all of the possible combinations of discrete values for the theoretically relevant categories of difference. This requires examining at least four distinct groups when our theory focuses on race and gender: Black women, White women, Black men, and White men.<sup>4</sup> It is simply not possible to identify evidence of intersectionality in this context with fewer groups. This is relevant to the debate over whether intersectionality research should focus exclusively on marginalized groups. Some have argued that the concept of intersectionality has "been 'hijacked' to include everyone, even white heterosexual men" (Davis and Zarkov 2017, 314) and that its application to privileged groups is a form of "colonization" (Alexander-Floyd 2012, 19). These concerns often arise because an emphasis is placed on the importance of particular identity groups to intersectionality research. A primary goal of intersectionality research, though, is to identify how structures of power interact to create inequalities among different groups. To the extent that this is the goal, our discussion shows that we must include privileged groups, such as White men, in our analyses, at least if we wish to identify support for intersectionality (Else-Quest and Shibley-Hyde 2016, 163).

4. This is assuming, purely for simplicity, that race and gender can each take on only two possible values. The number of combinations or groups we need to observe rises rapidly as we increase the number of theoretically relevant analytical categories of difference or their possible values.

The research design depicted in figures 1B and 2B, which cross-classifies individuals based on their gender and race, graphically captures the “matrix” aspect of what Collins (1990) calls a “matrix of domination” and is an explicitly interactive framework. Those familiar with experiments will recognize it as a fully crossed factorial design with two factors (gender, race) and  $2 \times 2 = 4$  treatment arms. While not always recognized as such, factorial experimental designs are equivalent to adopting an interactive model setup. The bottom line is that an interactive research design is necessary for evaluating a claim of intersectionality, and this is true irrespective of whether we measure and analyze our outcomes of interest using qualitative or quantitative methods.

### INTERACTION MODELS: IDENTIFICATION AND INTERPRETATION

Many scholars evaluate their intersectional theories using quantitative methods.<sup>5</sup> Unfortunately, there is some confusion when it comes to identifying and interpreting interaction models.

#### Identifying an interaction model: Two equivalent specifications

Although categories of difference such as skin tone (Hochschild and Weaver 2007) and even racial status (Saperstein and Penner 2012) can be conceptualized as continuous, most intersectionality research conceptualizes categories of difference as discrete. With discrete categories of difference, there are two different, but exactly equivalent, ways to specify an interaction model to evaluate an intersectional claim. The first involves additively including a series of dichotomous variables that each indicate someone’s membership in a particular identity group such as Black women, White women, Black men, and White men. The second involves including dichotomous variables that capture the relevant categories of difference, such as gender and race, as well as their interactions. While the second specification is easily recognized as an interaction model, some scholars are unaware that the first specification is also an interaction model. The two specifications may look different, but they are equivalent in the sense that they estimate the exact same quantities of interest.

5. There is much debate about the merits of using qualitative and quantitative methods to evaluate intersectional claims. In our opinion, much of the intensity of this debate arises because particular methodologies are too often linked to distinct epistemological positions (McCall 2005; Spierings 2012). Whatever the reason, we do not wish to enter this particular debate here. In what follows, we focus on simply providing advice to those who employ quantitative methods in their research. For those who are interested, we provide a short discussion of how our advice might transfer to certain types of qualitative research in app. I.

We start by briefly discussing a common variant of the first specification that is never recommended for testing claims of intersectionality. Continuing with our theory regarding the impact of race and gender on Republican support, we might be especially interested in the experiences of Black women. Given this, we might think to take a sample of individuals who vary in terms of their gender and race and estimate the following linear regression model,

$$\text{Republican Support} = \delta_0 + \delta_1 \text{Black Female} + v, \quad (1)$$

where Republican Support is some continuous measure of Republican support and Black Female is a dichotomous variable that equals 1 if the individual is a Black woman and 0 otherwise. The coefficient  $\delta_1$  tells us the effect of being a Black woman as opposed to not being a Black woman. The problem is that there are three different ways of not being a Black woman that are being lumped together (White woman, Black man, White man). In other words, the counterfactual used to estimate the effect of being a Black woman is a weighted mixture of different identity groups. By mixing these different identity groups into the counterfactual, the model assumes that these groups are identical with respect to Republican support, something that is unlikely to be realistic. Ultimately, the model in equation (1) provides no way to determine if Black women are different from White women, Black men, or White men and, as a result, no way to know if there is any evidence of intersectionality.

The first appropriate way to specify a model to test a claim of intersectionality involves including  $K - 1$  dichotomous variables that each capture someone’s membership in one of the  $K$  identity groups under consideration. In our current example, we have  $K = 4$  identity groups that are determined by all of the possible combinations of values for an individual’s race and gender,

$$\begin{aligned} \text{Republican Support} = & \gamma_0 + \gamma_1 \text{White Female} \\ & + \gamma_2 \text{Black Male} \\ & + \gamma_3 \text{Black Female} + \varepsilon. \end{aligned} \quad (2)$$

White Female, Black Male, and Black Female are each dichotomous variables that equal 1 if an individual is a White woman, a Black man, or a Black woman, and 0 otherwise, and White Male is the omitted identity group. It is necessary to omit one of the groups to prevent perfect multicollinearity. Intuitively, the value of White Male is predetermined if we already know whether someone is a White woman, Black man, or Black woman; its inclusion adds no new information. Our choice of which group to omit means that White men act as the “baseline” or “reference” category against which the other groups are compared. This means, for example, that the

coefficient on Black Female indicates the effect of being a Black woman instead of a White man, or equivalently, the difference in Republican support between a Black woman and a White man.<sup>6</sup> The estimated coefficients are identical to those we would obtain from simply conducting difference-in-means tests between each of the identity groups. This means that scholars who choose not to adopt a regression framework, preferring to simply compare means or employ more qualitative or interpretive comparisons across groups, are effectively adopting the same modeling strategy as that in equation (2).

The second appropriate way to test a claim of intersectionality involves estimating a “standard” interaction model in which we explicitly specify the interaction between our categories of difference. In our current example, this means estimating the following specification,

$$\text{Republican Support} = \beta_0 + \beta_1 \text{Female} + \beta_2 \text{Black} + \beta_3 \text{Female} \times \text{Black} + \epsilon, \quad (3)$$

where Female is a dichotomous variable that equals 1 if an individual is female and 0 if male, Black is a dichotomous variable that equals 1 if an individual is Black and 0 if White, and Female  $\times$  Black is an interaction term created by multiplying together the constitutive terms Female and Black.

While the two models, and hence research designs, in equations (2) and (3) look quite different, they are, in fact, exactly equivalent. To see why, start by recognizing that the dichotomous variables White Female, Black Male, and Black Female in equation (2) are each interaction terms. For example, Black Female is an interaction term created by multiplying together Black and Female. To see this more clearly, think about how we would identify the Black women in a sample. A Black woman is someone who is coded Black and Female. A Black Female variable is created by multiplying the values of Black and Female together. Only if Black and Female are both 1 will Black Female equal 1: Black women are coded  $1 \times 1 = 1$ , White women as  $0 \times 1 = 0$ , Black men as  $1 \times 0 = 0$ , and White men as  $0 \times 0 = 0$ . Recognizing that the dichotomous variables capturing membership in our identity groups are interaction terms should make it clear that scholars who adopt a regression model like the one in equation (2), as well as those who make quantitative or

6. The choice of identity group to omit is arbitrary in that we obtain the same estimates for our quantities of interest no matter which group is omitted. The choice influences the types of comparisons that can be made directly from the regression output. The coefficients, though, can always be used to calculate any group comparisons we desire, and the estimates of these comparisons will be identical irrespective of the choice of omitted group. We elaborate on this in app. E.

qualitative comparisons across cross-cutting identity groups, are implicitly adopting an interactive framework.

We can rewrite equation (2) to explicitly recognize that the dichotomous variables capturing identity group membership are interaction terms,

$$\begin{aligned} \text{Republican Support} = & \gamma_0 + \gamma_1 \underbrace{\text{Female}_1 \times \text{Black}_0}_{\text{White Female}} \\ & + \gamma_2 \underbrace{\text{Female}_0 \times \text{Black}_1}_{\text{Black Male}} \\ & + \gamma_3 \underbrace{\text{Female}_1 \times \text{Black}_1}_{\text{Black Female}} + \epsilon, \end{aligned} \quad (4)$$

where Female<sub>0</sub> is a dichotomous variable that equals 1 when Female = 0, Female<sub>1</sub> is a dichotomous variable that equals 1 when Female = 1, Black<sub>0</sub> is a dichotomous variable that equals 1 when Black = 0, and Black<sub>1</sub> is a dichotomous variable that equals 1 when Black = 1. It should be clear that Female<sub>1</sub> is the same as Female and that Black<sub>1</sub> is the same as Black. Thus, we can rewrite equation (4) as

$$\begin{aligned} \text{Republican Support} = & \gamma_0 + \gamma_1 \underbrace{\text{Female} \times \text{Black}_0}_{\text{White Female}} \\ & + \gamma_2 \underbrace{\text{Female}_0 \times \text{Black}}_{\text{Black Male}} \\ & + \gamma_3 \underbrace{\text{Female} \times \text{Black}}_{\text{Black Female}} + \epsilon. \end{aligned} \quad (5)$$

Note that Female<sub>0</sub> and Black<sub>0</sub> are just the opposite of Female and Black. In other words, Female<sub>0</sub> = 1 – Female and Black<sub>0</sub> = 1 – Black. Thus, we can rewrite equation (5) as

$$\begin{aligned} \text{Republican Support} = & \gamma_0 + \gamma_1 \text{Female} \times (1 - \text{Black}) \\ & + \gamma_2 (1 - \text{Female}) \times \text{Black} \\ & + \gamma_3 \text{Female} \times \text{Black} + \epsilon, \\ = & \gamma_0 + \gamma_1 \text{Female} + \gamma_2 \text{Black} \\ & + (\gamma_3 - \gamma_1 - \gamma_2) \text{Female} \times \text{Black} + \epsilon. \end{aligned} \quad (6)$$

We can now see that the model in equation (2) is an algebraic transformation of the “standard” interaction model in equation (3), where  $\beta_0 = \gamma_0$ ,  $\beta_1 = \gamma_1$ ,  $\beta_2 = \gamma_2$ , and  $\beta_3 = \gamma_3 - \gamma_1 - \gamma_2$ . The two models are just different representations of the *same* interaction model. We refer to the specification in equation (3) as the standard interaction model and the one in equation (2) as the alternative interaction model.<sup>7</sup>

7. We have explicitly shown that the two modeling approaches are equivalent when the categories of difference are dichotomous. This equivalence continues to hold when the categories of difference have more than two (unranked or ranked) discrete values. In app. H, we show how to specify equivalent models when we have two gender categories and three racial categories.

### The standard interaction model: Interpretation

Before discussing the relative benefits of the two interactive specifications, we briefly take a closer look at the standard interaction model in equation (3). We do so because there is some confusion about how to interpret this type of model among intersectionality scholars. Some claim, for example, that  $\beta_1$  captures the separate effect of gender,  $\beta_2$  captures the separate effect of race, and  $\beta_3$  captures the mutually reinforcing or joint effect of gender and race. Each of these claims is incorrect.

The effect of gender, the effect of being a woman instead of a man, is

$$\frac{\partial \text{Republican Support}}{\partial \text{Female}} = \beta_1 + \beta_3 \times \text{Black}. \quad (7)$$

We see from this that the coefficient on Female,  $\beta_1$ , does not tell us the separate effect of gender in any general sense. So long as  $\beta_3 \neq 0$ , the effect of gender depends on one's race. The effect of being female is  $\beta_1$  among White people (Black = 0) but  $\beta_1 + \beta_3$  among Black people (Black = 1). Put differently,  $\beta_1$  tells us the difference in Republican support between a White woman and a White man, while  $\beta_1 + \beta_3$  tells us the difference in Republican support between a Black woman and a Black man. The effect of race, the effect of being Black instead of White, is

$$\frac{\partial \text{Republican Support}}{\partial \text{Black}} = \beta_2 + \beta_3 \times \text{Female}. \quad (8)$$

We see that the coefficient on Black,  $\beta_2$ , does not tell us the separate effect of race in any general sense. So long as  $\beta_3 \neq 0$ , the effect of race depends on one's gender. The effect of being Black is  $\beta_2$  among men (Female = 0) but  $\beta_2 + \beta_3$  among women (Female = 1). Put differently,  $\beta_2$  tells us the difference in Republican support between a Black man and a White man, while  $\beta_2 + \beta_3$  tells us the difference between a Black woman and a White woman.<sup>8</sup>

The critical thing to recognize is that so long as  $\beta_3 \neq 0$ , the coefficients on Female and Black never tell us the separate, unconditional, independent, or average effects of gender and race. Significantly, our discussion also highlights that it does not make conceptual or theoretical sense to claim that the effects of things like gender and race can be broken up into separate "additive" and "interactive" or "intersectional" components. They cannot. There is only ever one effect for gender,  $\beta_1 + \beta_3 \times \text{Black}$ , and one effect for race,  $\beta_2 + \beta_3 \times \text{Female}$ . As we will see next, this does not mean that we cannot use an interaction model to evaluate whether gender and race have separable effects.

The key to determining whether gender and race have separable effects on things like Republican support has to do with the coefficient on the interaction term  $\beta_3$ . We see this by looking at the effects of Female and Black in equations (7) and (8). If  $\beta_3 = 0$ , the effect of gender does not depend on one's race and the effect of race does not depend on one's gender. In this situation, gender and race have completely separate effects and we would have to conclude that there is no empirical support for intersectionality. In these, and only these, circumstances, the coefficients on Female and Black can be interpreted as telling us the unconditional or independent effects of gender and race. In contrast, if  $\beta_3 \neq 0$ , the effect of gender depends on one's race and the effect of race depends on one's gender. At this point, we would have to conclude that gender and race have nonseparable effects and that the empirical evidence is consistent with intersectionality. Due to the inherent symmetry of interactions (Clark and Golder 2023), the coefficient on the interaction term tells us both how race modifies the effect of gender *and* how gender modifies the effect of race. These modifying effects are commonly known as the interaction effect. It should now be clear that finding evidence of an "intersectional effect" is equivalent to finding an "interaction effect." A simple *t*-test on the interaction term coefficient can be used to evaluate whether there is statistically significant evidence of interaction and, thus, intersectionality. To summarize: "no interaction effect, no intersectionality."

It is important to distinguish the interaction effect of gender and race from the joint effect of gender and race. These are not the same thing. The joint effect captures the effect of simultaneously "changing" the values on both gender and race and is equivalent to comparing a Black woman to a White man or a Black man to a White woman; it does not speak to the separability of gender and race. In contrast, the interaction effect captures if and how the effect of "changing" the value of gender depends on the value of race and if and how the effect of "changing" the value of race depends on one's gender. In other words, the interaction effect is the change in the difference between men and women when we move from White people to Black people or, equivalently, the change in the difference between White and Black people when we move from men to women.<sup>9</sup>

8. To determine whether the effects of being female and being Black in eqq. (7) and (8) are statistically significant requires calculating appropriate measures of uncertainty. We discuss how to do this in app. D.

9. We are sensitive to debates in the literature when it comes to the difficulty of talking about the "effects" of categories of difference such as gender and race. While gender reassignment is possible and race can be fluid (Davenport 2020; Saperstein and Penner 2012), gender and racial categories tend to be relatively fixed. That gender and race are hard to change and hence resistant to manipulation means that scholars, both qualitative and quantitative, should be careful about giving a causal, rather than associational, interpretation to

Table 1. Some Different Stories about the Impact of Gender and Race and the Predicted Model Parameters

	Standard Interaction Model	Alternative Interaction Model
No intersectionality	$\beta_3 = 0$	$\gamma_3 - \gamma_1 - \gamma_2 = 0$
Only gender matters	$\beta_1 \neq 0, \beta_2 = 0$	$\gamma_1 \neq 0, \gamma_2 = 0$
Only race matters	$\beta_1 = 0, \beta_2 \neq 0$	$\gamma_1 = 0, \gamma_2 \neq 0$
Gender and race both have separate effects	$\beta_1 \neq 0, \beta_2 \neq 0$	$\gamma_1 \neq 0, \gamma_2 \neq 0$
Intersectionality	$\beta_3 \neq 0$	$\gamma_3 - \gamma_1 - \gamma_2 \neq 0$
Gender matters, but differently, for both White people and Black people	$\beta_1 \neq 0, \beta_1 + \beta_3 \neq 0,$	$\gamma_1 \neq 0, \gamma_3 - \gamma_2 \neq 0$
Race matters, but differently, for both men and women	$\beta_2 \neq 0, \beta_2 + \beta_3 \neq 0$	$\gamma_2 \neq 0, \gamma_3 - \gamma_1 \neq 0$
Gender matters for White people but not Black people	$\beta_1 \neq 0, \beta_1 + \beta_3 = 0,$	$\gamma_1 \neq 0, \gamma_3 - \gamma_2 = 0$
Race matters for men but not women	$\beta_2 \neq 0, \beta_2 + \beta_3 = 0$	$\gamma_2 \neq 0, \gamma_3 - \gamma_1 = 0$
Gender matters for Black people but not White people	$\beta_1 + \beta_3 \neq 0, \beta_1 = 0$	$\gamma_3 - \gamma_2 \neq 0, \gamma_1 = 0$
Race matters for women but not men	$\beta_2 + \beta_3 \neq 0, \beta_2 = 0$	$\gamma_3 - \gamma_1 \neq 0, \gamma_2 = 0$

We can obviously make different theoretical claims as to how categories of difference such as gender and race affect things. We might argue, for example, that there is no intersectionality and that only gender matters, only race matters, or that gender and race both have separate effects. Instead, we might argue that there is intersectionality. In this case, there are different ways that gender and race can interact. For instance, our theory might imply that gender and race always matter but that their effects vary across racial and gender groups. An alternative possibility is that gender matters for White people but not for Black people and that race matters for men but not women. Scholars often think they need to employ different models to evaluate these different stories. However, interaction models “nest” these other models and can be used to simultaneously evaluate all of these possible stories. In table 1, we show the predicted parameters in a standard and alternative interaction model for some of the different ways that gender and race might affect an outcome of interest. To keep things simple, we do not make directional claims about intersectionality or the effects of gender and race. In a given substantive application, though, we encourage scholars to always use their theories to derive directional predictions whenever possible.

### Which interactive specification should we use?

Is it better to use the standard interaction model or the alternative one? The two models are algebraically equivalent

their empirical claims. Other factors that work against providing a causal interpretation to the effects of gender and race include concerns about potential posttreatment bias and the fact that the boundaries of gender and racial groups are not fixed across time or within groups. Sen and Wasow (2016) propose two broad types of research design that can be used to make causal claims about the effects of categories of difference. Both research designs can easily be made “interactive” to allow for the possibility of intersectionality.

and, thus, the exact same quantities of interest can be calculated from both. In this sense, it does not matter which specification we use. That said, each model makes it easier to see particular quantities of interest directly from the regression output.<sup>10</sup>

The key advantage of the standard model is that we can directly identify whether there is a significant interaction effect and hence whether there is any evidence of intersectionality. This is because the coefficient on the interaction term indicates whether the categories of difference have separate ( $\beta_3 = 0$ ) or intersectional ( $\beta_3 \neq 0$ ) effects. In contrast, there is no way of knowing directly from the regression output with the alternative model whether the categories of difference intersect. That one or more of the coefficients in the alternative model are nonzero and significant indicates that there are differences between particular identity groups but says absolutely nothing about the presence of intersectionality. To determine if there is evidence of intersectionality, we must formally test whether  $\gamma_3 - \gamma_1 - \gamma_2 = 0$ . Scholars who fail to recognize that the alternative model is, in fact, an interaction model are likely to overlook the need to conduct this particular test. Evidence of intersectionality is important because it is a necessary condition for concluding that an intersectional theory is supported. There is little point in further evaluating the empirical implications of an intersectional theory if there is no evidence of intersectionality.

One potential advantage of the alternative model is that we can identify a joint effect of gender and race directly from the regression output. The included interaction terms in the alternative model are dichotomous variables that capture membership in different identity groups. If we estimate the

10. We provide a more detailed comparison than what follows of what can be learned directly from the regression output of the two interactive model specifications in app. B.

alternative model with a constant, we have to omit the dichotomous variable for one of the groups. This omitted identity group becomes the reference group against which the other groups are compared. In equation (2), White men act as the reference category and so  $\gamma_1$  indicates the effect of being a White woman as opposed to a White man,  $\gamma_2$  indicates the effect of being a Black man as opposed to a White man, and  $\gamma_3$  indicates the effect of being a Black woman instead of a White man. Note that  $\gamma_3$  indicates the joint effect of “changing” the values of both the gender and race of the reference category. While  $\beta_1$  and  $\beta_2$  in the standard interaction model are equivalent to  $\gamma_1$  and  $\gamma_2$  in the alternative model, there is no equivalent coefficient in the standard model for  $\gamma_3$ . Instead,  $\gamma_3 = \beta_1 + \beta_2 + \beta_3$ . While it is certainly possible to calculate this quantity from the standard interaction model, it is not possible to read it directly from the regression output.

No matter which model we employ, we will have to make some postestimation calculations to fully evaluate the hypotheses from an intersectional theory. The regression output provided by neither model is sufficient on its own to fully evaluate the implications of an intersectional theory. Given this, the choice of model when testing an intersectional theory is largely a matter of taste.

We note that some scholars claim that an intersectional theory should be tested with a “split-sample strategy” rather than a “pooled” interaction model. Due to space constraints, we reluctantly relegate our discussion of this claim to appendix F. The bottom line is that this claim is misconceived because a split-sample strategy that is appropriate for testing a claim of intersectionality adopts an implicit interactive research design and can always be written explicitly as a pooled interaction model. Ultimately, there is nothing that one can do with a split-sample strategy that one cannot also do with a pooled interaction model. Significantly, there are intersectional claims that can easily be evaluated with a pooled interaction model that cannot be so easily evaluated with the split-sample strategy, and, as a result, a pooled interaction model is never worse and often better.

### **THEORY: MOVING BEYOND A CLAIM OF INTERSECTIONALITY**

Scholars who are evaluating an intersectional theory often focus on the claim of intersectionality. This amounts to determining whether there is an interaction effect between the categories of difference. In most cases, scholars will make a specific prediction as to the direction of the interaction effect. Thinking in terms of interacting axes of inequality, for example, we would expect any interaction effect to be negative. We would expect, say, race and gender to interact such

that being Black as opposed to White exacerbates the inequality between women and men and being female as opposed to male exacerbates the inequality between Black and White people. We encourage scholars when possible to make predictions not only about the presence of intersectionality but also its direction.

It is important to recognize, though, that finding evidence of the predicted intersectional effect is not sufficient on its own to corroborate an intersectional theory. This is because any observed interaction effect is always consistent with a wide variety of ways in which the categories of difference interact, some of which may be inconsistent with the underlying theory (Berry, Golder, and Milton 2012). Importantly, simply knowing the direction of the intersectionality says nothing about whether the categories of difference, such as race and gender, ever have a positive, negative, or zero effect on the outcome of interest. In effect, proposing and testing only a prediction about intersectionality constitutes an extremely weak, and often substantively uninformative, test of one’s underlying theory. As a result, we recommend that scholars always supplement a prediction about the direction of intersectionality with predictions about the direction of the effects of the categories of difference. Doing so significantly narrows the range of relationships that are consistent with one’s underlying intersectional theory, thereby strengthening any empirical test.

To illustrate this point, we return to our example of Republican support and the standard interaction model in equation (3). While our discussion applies to both categories of difference, we focus on the conditional effect of gender. Recall that the effect of Female is  $\beta_1 + \beta_3 \times \text{Black}$ . Suppose our theory predicts that women exhibit less Republican support than men but that this negative effect is stronger among Black people than White people. This prediction indicates that we expect to see a negative interaction effect between race and gender. The key thing to recognize is that the effect of gender depends on both  $\beta_3$  and  $\beta_1$  (and the value of Black). Simply knowing that the sign of the interaction effect is negative establishes neither the sign (positive or negative) nor the magnitude of the effect of gender for either White or Black people. This is important as different values for  $\beta_1$  imply quite different ways in which gender and race interact to determine Republican support.

Consider figure 3, which shows three possible “marginal effect plots” for gender that have the same negative interaction effect,  $\beta_3 = -0.4$ . Each plot shows the interaction effect between gender and race as well as the effect of gender among White ( $\beta_1$ ) and Black ( $\beta_1 + \beta_3$ ) people, along with confidence intervals. Although all the plots have the same interaction effect and hence provide the same evidence with

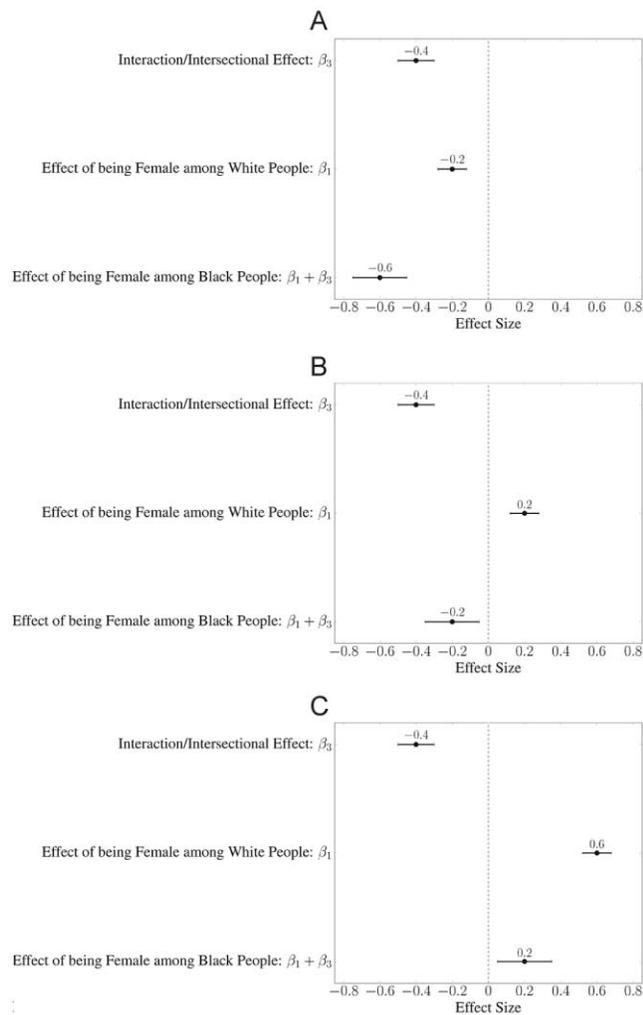


Figure 3. The conditional effect of gender on Republican party support

respect to intersectionality, they each tell a very different story about how gender affects Republican support. These different stories arise because the value for  $\beta_1$  is different in each plot. Only the plot in figure 3A is consistent with our theory. In this plot, the effect of being female is always negative and more so among Black people. The plot in figure 3B is not consistent with our theory. While the effect of being female is negative among Black people, it is, contrary to expectations, positive among White people. The plot in figure 3C is also inconsistent with our theory. This is because the effect of being female is positive, rather than negative, for both White and Black people. As figure 3 demonstrates, identifying a negative and significant interaction effect is not sufficient to know whether the data support our particular intersectional theory or some alternative intersectional story such as the one in figure 3C.<sup>11</sup> This is critical because the plot in figure 3C

11. Figure 3 shows just three of the possible relationships for the conditional effect of gender that could arise from an intersectional theory

indicates that men, rather than women, always exhibit less Republican support.

While we have focused on the effect of gender, our discussion also applies to the effect of race. Simply knowing that there is a negative interaction between gender and race says nothing about whether race has a positive, negative, or zero effect for either men or women. This is why we encourage scholars to supplement a prediction about the sign of any intersectionality with predictions about the signs of the effects of each category of difference. If the categories of difference are gender and race, this means supplementing a prediction about the sign of the intersectionality with predictions about the effect of gender for each value of race and predictions about the effect of race for each value of gender. If gender and race each take on two values, this amounts to five key predictions: (1) the interaction/intersectional effect between gender and race, (2) the effect of gender among White people, (3) the effect of gender among Black people, (4) the effect of race among men, and (5) the effect of race among women. This is why we included five predictions for each of the intersectional stories in table 1.<sup>12</sup> As we see in appendix A, there are 15 theoretically possible ways in which gender and race could interact to affect some outcome of interest.<sup>13</sup> Only by making all five of our key predictions can scholars know whether the data support their particular intersectional theory as opposed to one of the other 14 possible stories. While we encourage scholars to use their theory to make these five predictions, there is no need to present them as five separate hypotheses. As we show in the upcoming application, it is usually the case that all five predictions can be incorporated into a single hypothesis about how the effect of gender varies with race and a single hypothesis about how the effect of race varies with gender.

#### APPLICATION: GENDER, RACE, AND REPUBLICAN SUPPORT

To demonstrate how scholars can maximize the information from an empirical study of intersectionality, we examine how race and gender affected how much people liked the

positing interaction between gender and race. There are, in fact, 10 possible relationships, each telling a different story of how gender affects Republican support. All 10 of these relationships are shown and explained in app. A.

12. There will be more than five key predictions if an intersectional theory involves more than two categories of difference or if the categories have more than two values. As an example, we show in app. G that there are at least 19 key predictions that can be made when there are three interacting categories of difference that can each take on two values.

13. In app. C, we summarize the quantities of interest from the standard and alternative interaction models that are necessary for evaluating our five key predictions.

Republican Party during the 2016 US presidential elections. Black people are expected to exhibit less support for the Republican Party than White people. The Republican Party espouses a conservative position on the issues of civil rights and race that is more congruent with the preferences of White people than with the more liberal preferences of Black people. These particular issues were especially salient during the election campaign due to the heightened racial tensions following the presidency of Barack Obama and the racialized rhetoric and support for individuals and messages associated with White supremacy from the Republican candidate Donald Trump (Huber 2016; Swain 2018).

Women are also expected to exhibit less support for the Republican Party than men. This is because the Republican Party holds a conservative position on a host of issues related to things like health care, same sex marriages, restrictions on firearms, and government activism where women have historically held a more liberal position than men (Box-Steffensmeier, De Boef, and Lin 2004; Kaufmann 2002). The sexist language used by Donald Trump during the campaign is expected to have reinforced the partisan gender gap that has seen women consistently favor Democrats over Republicans since the early 1980s (Cassese and Barnes 2019; Frasure-Yokley 2018).

Rather than assume that race and gender have separate and, hence, additive effects on how much someone likes the Republican Party, there are reasons to think that they interact. Intersectionality scholars have long argued that it is not always appropriate to treat groups, such as women, men, Black people, and White people, as homogeneous and that we need to recognize that categories of difference “interact to form qualitatively different meanings and experiences” (Warner 2007, 454). In our case, women and men may exhibit different levels of Republican support depending on their race, and Black and White people may exhibit different levels of support depending on their gender. There are several potential reasons for this. One is that Black women have frequently been stigmatized and framed in particularly negative terms by political elite discourse such as that coming from the Republican Party (Hancock 2004; Jordan-Zachery 2003). Another is that Black men often hold more conservative attitudes relative to Black women than White men do relative to White women (Dawson 2001; Lewis 2013; Rigueur 2014). Finally, the relative absence of Black men due to phenomena like mass incarceration means that Black women tend to play a more politically active role in the community compared to Black men than White women do compared to White men (Weaver 2010). All of this suggests that Black women will exhibit an especially negative reaction to the Republican Party relative to both White women and Black

men. In sum, there are reasons to believe that gender and race interact to determine Republican support.

We can derive the following hypotheses from the intersectional reasoning presented here:

**Female hypothesis.** Women will always like the Republican Party less than men. This negative effect is larger among Black people than White people.

**Black hypothesis.** Black people will always like the Republican Party less than White people. This negative effect is larger among women than men.

Together, these two hypotheses contain all five of the key predictions we recommend. The Female hypothesis implies that the effect of gender will be negative for both White and Black people. The Black hypothesis implies that the effect of race will be negative for both men and women. Both hypotheses imply that there will be negative intersectionality between gender and race because the negative effect of gender is expected to be stronger among Black people than White people and the negative effect of race is expected to be stronger among women than men.

We test our hypotheses using data from the American National Election Studies (ANES) 2016 Time Series Study. Our dependent variable, Republican Support, is based on a survey question in which respondents are asked to indicate how much they like the Republican Party on a 0–10 scale, where 0 indicates they strongly dislike the Republican Party and 10 indicates they strongly like it. In terms of our key independent variables, Female is a dichotomous variable that equals 1 if an individual self-identifies as female and 0 if they self-identify as male, Black is a dichotomous variable that equals 1 if an individual self-identifies as Black and 0 if they self-identify as White, and Female  $\times$  Black is an interaction term created by multiplying together Female and Black. As a control variable, we include a respondent’s Age.<sup>14</sup> We treat our dependent variable as continuous and estimate an ordinary least squares regression with the same basic standard interactive specification shown earlier in equation (3).

Our two hypotheses speak to the effects of gender and race on Republican support. The effect of being female as opposed to male is  $\beta_1 + \beta_3$ Black. According to our Female hypothesis, women should always exhibit less support than

14. Our specification is almost certainly underspecified in terms of control variables. However, our goal here is not to estimate the best possible model for evaluating the conditional effects of gender and race on Republican support but, rather, to show how to correctly interpret and present the information from an empirical analysis of the implications of our intersectional argument.

men, but this negative effect should be larger for Black people than White people. It follows that  $\beta_1$  and  $\beta_1 + \beta_3$  should both be negative. Since the negative effect of being female should be larger among Black people, it also follows that  $\beta_3$  should be negative. The effect of being Black as opposed to White is  $\beta_2 + \beta_3$ Female. According to our Black hypothesis, Black people should always exhibit less support than White people, but this negative effect should be larger for women than men. It follows that  $\beta_2$  and  $\beta_2 + \beta_3$  should both be negative. Since the negative effect of being Black should be larger among women, it again follows that  $\beta_3$  should be negative.

Our results are shown in table 2. The coefficient on Female is negative and statistically insignificant. This tells us that being female has no significant effect on Republican support among White people (Black = 0). Put differently, there is no significant difference between White women and White men. The coefficient on Black is negative and statistically significant. This tells us that being Black has a significant negative effect among men (Female = 0). More specifically, Black men like the Republican Party about 1.5 units less than White men. The important thing to remember is that the coefficients on Female and Black do not indicate the separate effects of gender and race; instead, they indicate the effect of being female among Whites and the effect of being Black among men. The coefficient on Female  $\times$  Black is negative and statistically significant. This

provides the important evidence of intersectionality and indicates both the change in how race matters when we move from men to women and the change in how gender matters when we move from White people to Black people. The coefficient on Age is positive and statistically significant, indicating that each year of life is associated with a 0.02 unit increase in Republican support.

To fully evaluate our intersectional theory, we must examine all five of the key predictions contained in our two hypotheses. Table 2 provides the information necessary to evaluate three of these predictions: (1) the interaction or intersectional effect between gender and race, (2) the effect of Female when Black = 0, and (3) the effect of Black when Female = 0. What we cannot see from the regression output is the effect of Female when Black = 1 and the effect of Black when Female = 1. To evaluate these effects, we must make additional calculations. The effect of Female when Black = 1 is  $\beta_1 + \beta_3$  or  $-0.04 + (-1.03) = -1.07$  [-1.72, -0.42]; 95% confidence intervals are shown in parentheses. This tells us that Black women like the Republican Party 1.07 units less than Black men and that this effect is statistically significant. The effect of Black when Female = 1 is  $\beta_2 + \beta_3$  or  $-1.50 + (-1.03) = -2.53$  [-2.96, -2.10]. This indicates that Black women like the Republican Party 2.53 units less than White women and that this effect is statistically significant.

We now have all the information necessary to evaluate our five key predictions. How should we present it? The easiest and most efficient way is directly in the text. With respect to gender, the effect of being female is  $-0.04$  [-0.27, 0.19] among White people and  $-1.07$  [-1.72, -0.42] among Black people. In other words, there is no statistically significant difference between White women and White men when it comes to liking the Republican Party, but Black women like the Republican Party less than Black men. Put differently, gender does not seem to matter among White people when it comes to Republican support but it does among Black people. With respect to race, the effect of being Black is  $-1.50$  [-2.04, -0.96] among men and  $-2.53$  [-2.96, -2.10] among women. In other words, Black men like the Republican Party less than White men and Black women like the Republican Party less than White women. Put differently, race always matters when it comes to Republican support, but it does so especially among women. The interaction effect is  $-1.03$  [-1.72, -0.34]. This indicates that race and gender do not have separable effects and they interact negatively to determine Republican support. Specifically, it indicates that the negative effect of being a woman on Republican support is 1.03 units larger for Black people than White people and that the negative effect of being Black is 1.03 units larger for women than men.

Table 2. Gender, Race, and Support for the Republican Party in the 2016 US Presidential Elections

	Standard Interaction Model
Female	-.04 (.12)
Black	-1.50*** (.27)
Female $\times$ Black	-1.03*** (.35)
Age	.02*** (.003)
Constant	4.47*** (.18)
Observations	2,858
R <sup>2</sup>	.07

Note. Dependent variable: Republican Support, 0–10. Standard errors in parentheses.

\*  $p < .10$  (two tailed).

\*\*  $p < .05$  (two tailed).

\*\*\*  $p < .01$  (two tailed).

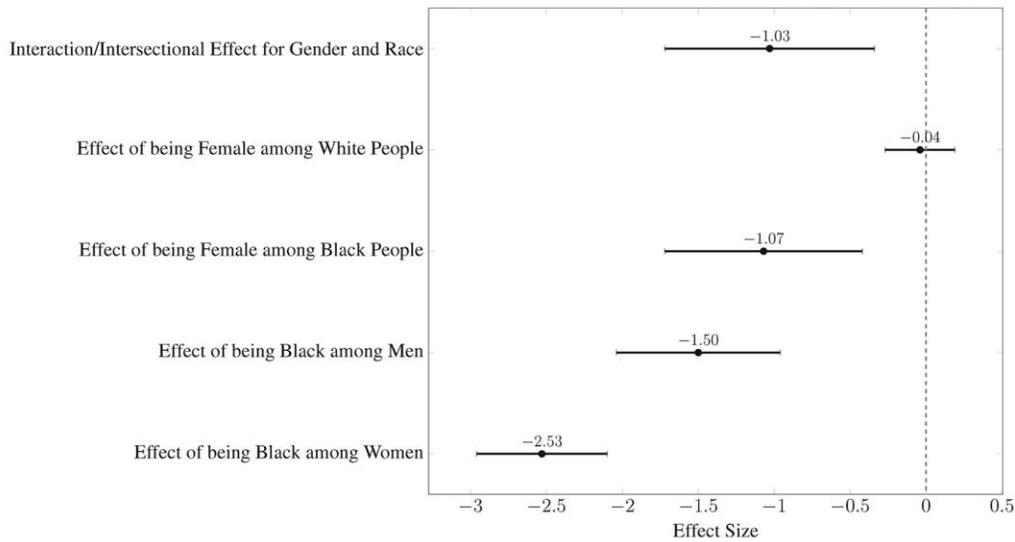


Figure 4. The conditional effects of gender and race on Republican support in the 2016 US presidential elections

An alternative way to present the key quantities of interest is graphically in the form of a combined marginal effect plot. In figure 4, we show the interaction or intersectional effect between gender and race, the effects of being female among White and Black people, and the effects of being Black among men and women. Each of the five effects is shown as a small circle along with its corresponding two-tailed 95% confidence interval. The dashed vertical gray line helps to indicate whether the effects are significantly different from zero. Whenever the confidence interval contains the vertical line, we cannot reject the possibility that the effect is zero. This is the case for the effect of being female among White people but not for any of the other effects. We recommend that scholars report the numerical value for the estimated effect sizes in the plot so as to maintain the type of precision that we would get from simply reporting the effects in the text.

A different graphical approach, which we recommend in the current context, involves showing “predicted values” and “differences” in a tabular format. We might be interested in calculating the predicted level of Republican support for each of our four identity groups. For example, we might want to know how much, say, a 40-year-old White man, White woman, Black man, and Black woman likes the Republican Party. The predicted level of Republican support is  $\beta_0 + \beta_4 \times 40 = 4.47 + 0.02 \times 40 = 5.08$  [4.90, 5.26] for a 40-year-old White man, it is  $\beta_0 + \beta_1 + \beta_4 \times 40 = 4.47 - 0.04 + 0.02 \times 40 = 5.04$  [4.86, 5.21] for a 40-year-old White woman, it is  $\beta_0 + \beta_2 + \beta_4 \times 40 = 4.47 - 1.50 + 0.02 \times 40 = 3.58$  [3.07, 4.09] for a 40-year-old Black man, and it is  $\beta_0 + \beta_1 + \beta_2 + \beta_3 + \beta_4 \times 40 = 4.47 - 0.04 - 1.50 - 1.03 +$

$0.02 \times 40 = 2.51$  [2.10, 2.91] for a 40-year-old Black woman. These values are shown in the gray-colored squares in figure 5.

With this setup, we can think of the conditional effects of gender and race in terms of differences in predicted values. For example, we could calculate the effect of gender by comparing our 40-year-old men to our 40-year-old women. This is equivalent to calculating the differences in the predicted values as we move from the top row to the bottom row of figure 5. The difference in predicted values between a 40-year-old man and woman is  $-0.04$  [-0.27, 0.19] if they are White and  $-1.07$  [-1.72, -0.42] if they are Black. These differences are reported in the first two cells of the bottom

	Race		Difference
	White	Black	
Male	5.08 (4.90, 5.26)	3.58 (3.07, 4.09)	-1.50 (-2.04, -0.96)
Female	5.04 (4.86, 5.21)	2.51 (2.10, 2.91)	-2.53 (-2.96, -2.10)
Difference	-0.04 (-0.27, 0.19)	-1.07 (-1.72, -0.42)	-1.03 (-1.72, -0.34)

Figure 5. Predicted values and the conditional effects of gender and race on support for the Republican Party in the 2016 US presidential elections.

row in figure 5 and are, of course, identical to the effects of gender reported earlier in figure 4. We can also calculate the effect of race by comparing our White 40-year-olds to our Black 40-year-olds. This is equivalent to calculating the differences in predicted values as we move from the left column to the right column of figure 5. The difference in predicted values between our White and Black 40-year-olds is  $-1.50$  [ $-2.04, -0.96$ ] if they are male and  $-2.53$  [ $-2.96, -2.10$ ] if they are female. These differences appear in the top two cells of the right column in figure 5 and are identical to the effects of race reported in figure 4. The difference in the two differences in the bottom row of figure 5 indicates how the effect of gender varies with an individual's race,  $-1.07 - (-0.04) = -1.03$ . This is, of course, the interaction effect. Similarly, the difference in the two differences in the right column indicates how the effect of race varies with an individual's gender,  $-2.53 - (-1.50) = -1.03$ . Due to the symmetry of interactions, this is also the interaction effect. The interaction effect is shown in gray in the lower right cell in figure 5.

The advantage of figure 5 is that the inclusion of the predicted values provides a metric for evaluating whether the effects of gender and race are substantively, and not just statistically, significant. The effect of being female among White people is not only statistically insignificant, but it is also substantively insignificant as it equates to a reduction of only  $(0.04/5.08) \times 100 = 0.8\%$  in the "baseline" level of Republican support among our White men. The other effects are substantively important. The effect of being female among Black people equates to a  $(1.07/3.58) \times 100 = 29.9\%$  reduction in Republican support among our Black men. The effect of being Black among men equates to a  $(1.50/5.08) \times 100 = 29.5\%$  reduction in support among our White men. The effect of being Black among women equates to a  $(2.53/5.04) \times 100 = 50.2\%$  reduction in support among our White women. In terms of the interaction effect, the negative impact of gender, or being female, on Republican support is about  $(-1.07/-0.04) = 25$  times larger for Black people than White people and the negative effect of race, or being Black, is about  $(-2.53/-1.50) = 1.69$  times or 69% larger among women than men. We encourage scholars, no matter how they present their results, to always discuss the substantive importance, as well as the statistical significance, of their estimated effects.

In terms of our argument, four of our five key predictions receive unambiguous support. The only prediction that does not receive complete support is the one that White women like the Republican Party less than White men. The estimated effect of being female for White people is negative, as predicted, but it is substantively small and statistically insignificant. Overall, our results support the idea that gender and

race interact to determine Republican support. To the extent that our simple model is a good one, our results support prior research showing that gender does not play a significant role in determining Republican support among White people (Cassese and Barnes 2019; Dittmar 2016; Junn 2017; Junn and Masuoka 2020; Strolovitch, Wong, and Proctor 2017). They also highlight how gender exacerbates the negative effect of race on Republican support. While Black people always exhibit less Republican support than White people, the negative effect of race is significantly stronger among women than men (Gillespie and Brown 2019).<sup>15</sup>

## CONCLUSION

Over the last 40 years, scholars have adopted different approaches for studying intersectionality. Each of these different approaches has made important contributions to our knowledge of the world around us. Despite the different approaches to studying intersectionality, there is a broad consensus that, at its core, intersectionality denies the separability of categories of difference, such as gender, race, class, and sexuality, that can create and perpetuate inequalities and power differentials between different groups of people. In this article, we have provided advice on how to evaluate claims of intersectionality regarding the nonseparability of categories of difference and maximize the substantive information obtained from empirical analyses.<sup>16</sup>

It is often asserted that claims of intersectionality cannot, or should not, be evaluated with an interaction model. As we have demonstrated, though, claims of intersectionality can be evaluated only within an interactive framework broadly conceived. Evidence of intersectionality can never be directly obtained by studying a single identity group. Nor can it be directly obtained by looking at whether a category of difference such as race creates a cleavage within an identity group. This is because heterogeneity within an identity group can be

15. In app. G, we examine how incorporating class as a third category of difference adds to, and complicates, our intersectional argument and inferences.

16. We recognize the diversity that exists within the intersectionality paradigm and that not all scholars who adopt an intersectionality framework are interested in identifying evidence of intersectionality. The primary goal of many scholars who adopt an intracategorical approach is to center the lived experiences of particular groups such as Black women who have historically been marginalized. Other intersectionality inspired scholars are interested in things like the gender-specific ways that a person might experience anti-Black discrimination (Bailey 2021) or the degree to which a Black woman identifies with the "Black Superwoman" stereotype (Wallace 1990). That said, our advice becomes relevant if these scholars seek to explain these types of phenomena in terms of intersecting axes of inequality as there is now a claim of intersectionality that can be evaluated.

consistent with the absence of intersectionality and homogeneity can be consistent with the presence of intersectionality. Evaluating a claim of intersectionality requires comparing groups that exhibit variation across all the possible combinations of values for the theoretically relevant categories of difference. This means, for example, comparing four different identity groups when we have two dichotomous categories of difference and, as we show in appendix G, eight different identity groups when we have three dichotomous categories of difference. Comparing fewer groups than this makes it impossible to determine the necessary quantities of interest to identify evidence of intersectionality. The comparisons required to identify the presence of intersectionality define an explicitly interactive or fully crossed research design. This is true irrespective of whether scholars use quantitative or qualitative methods to make these comparisons; this is not a quantitative-qualitative divide. Among other things, our argument also demonstrates the necessity of including both marginalized and nonmarginalized groups in empirical analyses that specifically seek to evaluate a claim of intersectionality.

Many scholars of intersectionality adopt a quantitative approach in their research. Some employ or discuss the use of interaction models (Brown 2014; Hancock 2007, 2013; Simien 2005; Weldon 2006). Unfortunately, there is considerable uncertainty in the literature regarding these types of models, and mistaken beliefs are common. We have attempted to correct many of these mistaken beliefs and reduce confusion by providing practical advice on how to specify, interpret, and present the results from interaction models in the context of intersectionality research.

Scholars can adopt either of two equivalent interaction models to evaluate an intersectional theory when the categories of difference are discrete. The “standard” model explicitly specifies the interactions between our categories of difference. In contrast, the “alternative” model includes dichotomous indicators for each of the identity groups created by our categories of difference. While these two models look different, they are, in fact, just different representations of the same model. Their equivalence highlights the fact that comparing outcomes across different identity groups is fundamentally the same as examining how the categories of difference that define our identity groups interact to shape outcomes. The key advantage of the standard interaction model is that we can immediately see from the coefficient on the interaction term whether our categories of difference can be treated as separable and hence whether there is any evidence of intersectionality.

If we think that applying an intersectional framework is important for understanding the world, then it is incumbent

on us to carefully and systematically think through all of the implications of our theories. At a minimum, this means moving beyond a simple claim of intersectionality. Finding evidence of an interaction effect, while necessary, is not sufficient to corroborate an intersectional theory. This is because any observed interaction effect is always consistent with a wide variety of ways in which the theoretically relevant categories of difference intersect, some of which may be inconsistent with our underlying theory. Indeed, we saw that there are fully 15 theoretically possible ways that two dichotomous categories of difference such as gender and race can intersect to influence some outcome of interest. It is only by making the five key predictions we discussed earlier that scholars can determine whether the empirical evidence supports their particular intersectional story as opposed to one of the other 14 possible intersectional stories. To date, few existing studies of intersectionality exploit all of the implications of their theory.

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