

Evaluating Claims of Intersectionality*

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ABSTRACT

Over the last forty 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 be evaluated *only* 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.

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1 Introduction

While not universal, 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), for example, 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 paper, we demonstrate that a large class of claims regarding intersectionality, whether quantitative or qualitative in nature, can *only* be evaluated within an interactive framework broadly conceived. We go on to provide advice on how to interpret interaction models and present results in the context of quantitative intersectionality research. Scholars of intersectionality from a wide range of disciplines such as women’s studies, political science, sociology, legal studies, philosophy, psychology, queer studies, racial and ethnic studies, and history have all contributed greatly to our knowledge of the world around us. It is our hope that the theoretical and methodological advice we offer will help to maximize the substantive information obtained from empirical analyses of intersectionality.

What is intersectionality? Intersectionality rejects the separability of categories of difference such as gender, race, sexuality, and class, and in doing so recognizes that identities are simultaneously constituted (Crenshaw, 1989, 1991; Collins, 1990; Zinn and Dill, 1996; Belkhir and Barnett, 2001; McCall, 2005; Weldon, 2006; Simien, 2007). It represents a direct challenge to a form of group essentialism that emphasizes one common identity category above all others and that marginalizes or erases the experiences of group members who differ in other aspects of their identity (Alexander-Floyd, 2012; Smooth, 2013). In effect, it conceptualizes “categories not as distinct but as always permeated by other categories” (Cho, Crenshaw and McCall, 2013b, 795). Importantly, the intellectual origins of intersectionality research, which are rooted in Black feminist thought, multiracial feminism, and Critical Race Theory, are based on recognizing and challenging the overlapping structures of oppression that legitimize existing power relations and that affect particular marginalized groups such as lower-income Black female lesbians (Combahee River Collective, 1977).¹ As such, the objective of intersectionality research is not so much to highlight the different identity

¹Intersectionality has a long and storied history as an activist orientation with intuitions that shape academic thinking (Gines, 2011). While Crenshaw (1989, 1991) is typically credited with introducing the term ‘intersectionality’ about thirty years ago, Patricia Hill Collins has long made the study of ‘intersecting oppressions’ the central focus of her research agenda (Collins, 1990; Collins and Bilge, 2016). Earlier research by scholars such as hooks (1984), Moraga and Anzaldúa (1984), Smith (1983), and Spel-

groups that are created by the multiple possible combinations of overlapping categories of difference but rather to uncover how structures of power interact to create and perpetuate inequalities among these different identity groups (Weldon, 2006; Cole, 2009; Cho, Crenshaw and McCall, 2013b; May, 2015; Else-Quest and Shibley-Hyde, 2016).² As Crenshaw succinctly puts it in a recent interview, 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 scholars have begun to view intersectionality as a general theoretical framework or “analytic sensibility” (Cho, Crenshaw and McCall, 2013b, 795) that can be applied around the world to a much wider range of contexts and categories of difference than those that motivated the foundational work on intersectionality.³ The focus of intersectionality on *structural factors* highlights that empirical analyses of intersectional claims are necessarily context dependent and contingent on the characteristics of the given scenario under consideration. We simply note here that interaction models are commonly acknowledged to be well-suited for taking account of structure, context, and causal complexity (Braumoeller, 2004; Brambor, Clark and Golder, 2006; Clark, Gilligan and Golder, 2006; Kam and Franzese, 2007).

In her review of the literature, McCall (2005) argues that scholars have adopted at least three broad approaches to the study of intersectionality. Those who adopt the *anticategorical approach* emphasize the

man (1988) expressed similar sentiments. Intersectionality-adjacent arguments have an even longer history. Much of the theoretical foundation for contemporary work on intersectionality, for example, can be traced back to the ideals of the National Council of Negro Women founded in 1935 by Mary McLeod Bethune (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 (1977), a Black feminist lesbian organization, to capture the idea that the “major systems of oppression [related to race, gender, sexuality, class, etc.] are interlocking . . . [and] most often experienced simultaneously.” As Cooper (2016), Hancock (2013), and May (2015) remind us, intersectional thinking goes back much, much further than even this. For example, Sojourner Truth’s (1851) “Ain’t I a Woman” speech is widely acknowledged for laying the foundation for intersectional feminism. Writing a decade later about her life as a slave, Harriet Ann Jacobs (1861) 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 in a collection of essays as contending with both a “woman question” and a “race problem.”

²This point is regularly missed by critics (and sometimes advocates) of intersectionality research, who associate it with the promotion of identity politics and the reification of differences. As Tomlinson (2013, 1012) remarks, “if critics think intersectionality is a matter of identity rather than power, they cannot see which differences make a difference. Yet it is exactly our analyses of power that reveal which differences carry significance.”

³The legitimacy of this development is contested to some extent by those who wish to maintain the focus of intersectionality research on particular marginalized 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 (Choo and Ferree, 2010; Dharmoon, 2011; Alexander-Floyd, 2012; Carbado et al., 2013; Cho, Crenshaw and McCall, 2013a; Davis and Zarkov, 2017). Critical Race theorists express similar concerns about the tendency to characterize African Americans as prototypical minorities—a practice that, while centering the experiences of Black people, can have the unintended consequence of diverting scholarly attention away from other racial groups (Delgado and Stefancic, 2017).

importance of deconstructing categories of difference and argue that the social world is “too irreducibly complex . . . to make fixed categories anything but simplifying social fictions” (1773). To a large extent, the anticategorical approach rejects attempts at categorization. Those who adopt the *intracategorical approach* recognize that categories of difference, while constructed, are often ‘real’ in the sense 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 neglected, marginalized, or erased. As such, 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 analytical categories of difference but set out to identify and explain relationships of inequality *among* these categories. In this sense, intercategorical scholars adopt an explicitly comparative approach with the goal of determining if, when, how, and why inequalities exist across various identity groups. Intercategorical scholars commonly employ both qualitative and quantitative research designs.⁴

While we recognize the dangers of homogenization and simplification that can come when engaging in identity group categorization (Brown, 2000; Rhodes and Baron, 2019), we assume in what follows 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.

2 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 & 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”

⁴While the particular labels that McCall (2005) gives to these three traditions within intersectionality research perhaps inadvertently fosters too much focus on identity groups rather than structures of power, something that she herself later regrets (Cho, Crenshaw and McCall, 2013b, 797), her categorization scheme provides a useful summary of much of the existing literature.

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

Note that we are not suggesting that denying the separability of categories of difference is necessarily *sufficient* for a claim to be considered intersectional. The literature is replete with slightly different definitions of intersectionality. Some scholars argue, for example, that a claim can only be considered truly intersectional if it *also* addresses issues of power and inequality and recognizes that categories and their significance are context dependent (Else-Quest and Shibley-Hyde, 2016). We realize that much of the value and 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.

As we now demonstrate, evaluating whether there’s evidence of intersectionality in a given setting requires an interactive framework, broadly conceived. As a starting point, 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 one’s political orientation such that Black women exhibit low support for the Republican party.⁵ One research strategy we might adopt to evaluate the empirical support for our theory would be to examine the political orientation of Black women in isolation. 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 an overall judgement about whether Black women exhibit low Republican Party support. Whether based on descriptive, inferential, or interpretivist reasoning,

⁵An issue that arises when adopting an intersectional perspective has to do with the selection of the categories of difference or axes of structural inequality to study. One problem is that jointly considering all dimensions of an individual’s identity can “generate an infinite regress that dissolves groups into individuals” (Young, 2002, 721). Addressing critics of her 2004 book, *Black Sexual Politics*, 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 goes on to introduce 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 to intersectional claims related to race and gender. However, our discussion applies equally well to other axes of structural inequality (see, e.g., Stoll and Block 2015), as well as to cases in which intersectional claims are made with respect to more than two categories of difference. In [Online Appendix F](#), we provide a detailed 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.

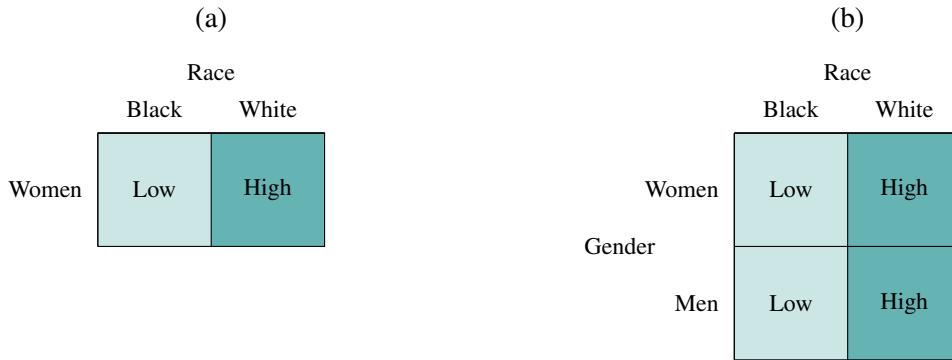
suppose we decide that Black women do exhibit low support. Can we conclude that we have empirical support for the *intersectional* impact of gender and race on political orientation predicted by our theory?

The type of analysis we have described fits most neatly into the intracategorical tradition of intersectionality research. Historically, race scholars have tended to emphasize the experiences of Black men, while gender scholars have tended to address those of White women. The result is that the experiences of Black women have often been overlooked (Cooper, 1892; hooks, 1981, 1989; Hull, Bell-Scott and Smith, 1993). The research strategy we have described is valuable because it gives voice to this marginalized group and might, as a result, usefully contribute to a better sense of inclusion, equity, and legitimacy for members of this group.⁶ If centering, describing, or interpreting the experiences and standpoint of Black women is the goal, then this research strategy is perfectly appropriate. However, we might also want to evaluate the core implication of our intersectional theory, namely that the low Republican Party support exhibited by Black women 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. As it stands, our current research design cannot speak to whether the effects of gender and race are separable or not. To determine if support for intersectionality exists requires adopting an 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 Party support exhibited by White women. Suppose that when we do this, we find that White women exhibit high Republican Party support, a result that is graphically shown in Figure 1a. Our new research design clearly reveals that there is heterogeneity, or a cleavage, 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 women (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 specific prediction of intersectionality made by our theory. To see why, suppose that we also collect information about Republican support among Black men and White men. One possibility is that 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

⁶In political science, King (1977), Prestage (1991), Barnett (1982), and Braxton (1994) helped to establish and legitimize the study of Black women in politics (Wallace et al., 2020). More recent scholarship that builds on this foundational work includes Alexander-Floyd (2012), Berger (2004), Brown-Dean (2019), Brown (2012, 2014*c,a,b*), Hancock (2004, 2007, 2016), Harris (2001), Jordan-Zachery (2003, 2007), Simien (2004*a,b*, 2005*a*, 2007), and Smooth (2006, 2013, 2016).

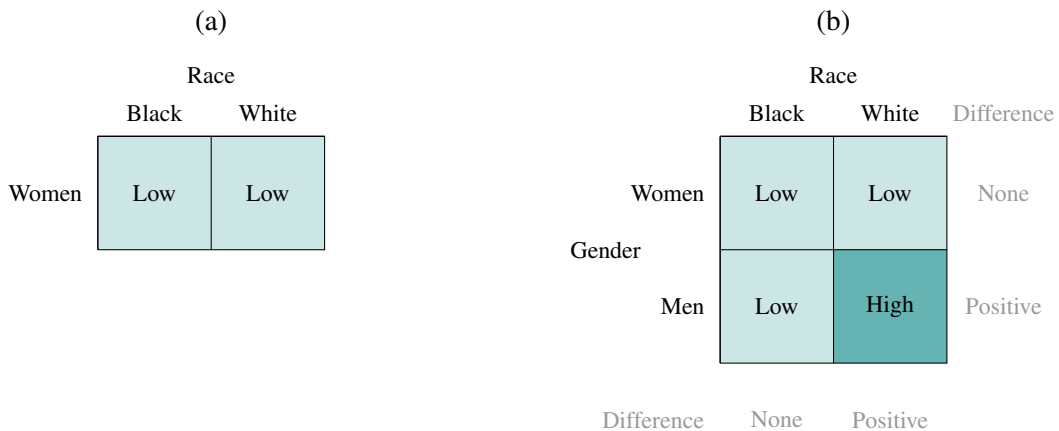
Figure 1: Race, Gender, and Republican Party Support I



and thus that there is no evidence of intersectionality between race and gender in this context.

Suppose now instead that 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. These results indicate a certain homogeneity, or lack of racial cleavage, among women when it comes to Republican support. Importantly, though, just as finding *heterogeneity* along racial lines among women should not be taken as

Figure 2: Race, Gender, and Republican Party Support II



Note: The 'Difference' column shown in gray to the right of the colored square in panel (d) indicates the difference between the values in the right colored column and the values in the left colored column. Thus, 'Low' minus 'Low' is 'None' and 'High' minus 'Low' is 'Positive'. The 'Difference' row below the colored square indicates the difference between the values in the bottom colored row and the values in the top colored row.

evidence of intersectionality, finding *homogeneity* along racial lines should not be taken as evidence that intersectionality is absent. To see why, suppose again that we collect information about Republican support among Black and White men. One possibility, illustrated in Figure 2b, is that 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 on Republican support depends on, or varies with, one’s gender. Specifically, we see that race does not matter for women but does for men. The ‘Difference’ row at the bottom indicates that the effect of gender on Republican support depends on, or varies with, one’s race. Specifically, we see that gender does not matter for Blacks but does for Whites. 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 there is evidence of intersectionality.

As Figures 1 and 2 help to illustrate, 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.⁷ It is simply not possible to identify evidence of intersectionality in this context with fewer groups than this. 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 represents 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 (Cho, Crenshaw and McCall, 2013b, 798). As suggested earlier, a primary goal of intersectionality research is to identify how *structures of power* interact to create inequalities among different identity groups. To the extent that this is the goal, our discussion demonstrates that we *must* include privileged groups, such as White men, in our analyses, at least if we wish to identify empirical support for intersectionality (Gershon and Monforti, 2021; Else-Quest and Shibley-Hyde, 2016, 163).

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 domina-

⁷This is assuming, purely for simplicity here, that race and gender can each take on only two possible values (women/men, Black/White). 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. For example, incorporating class with three discrete values (working, middle, upper) increases the number of groups necessary for identifying intersectionality to $2 \times 2 \times 3 = 12$.

tion” and is an explicitly interactive framework. Those familiar with experiments will immediately recognize it as a fully-crossed factorial design with two factors (gender, race) and $2 \times 2 = 4$ treatment arms (Warner, 2007). While not always recognized as such, factorial experimental designs are equivalent to adopting an interactive model setup (VanderWeele, 2015). 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.

3 Interaction Models: Identification and Interpretation

Many scholars evaluate the implications of their intersectional theory using quantitative methods.⁸ Unfortunately, there is some confusion when it comes to identifying and interpreting interaction models.

3.1 Identifying an Interaction Model: Two Equivalent Specifications

Although categories of difference such as skin tone (Keith and Herring, 1991; Hochschild and Weaver, 2007; Bailey, Saperstein and Penner, 2014; Yadon and Ostfeld, 2020) and even racial status (Kim, 1999; Lee, 2009; Saperstein and Penner, 2012) can be conceptualized as continuous, the vast majority of intersectionality research conceptualizes categories of difference as discrete.⁹ With discrete categories of difference, there are two different, but exactly equivalent, ways to specify an interaction model to evaluate a claim of intersectionality. The first way involves additively including a series of dichotomous independent variables that each indicate someone’s membership in a particular identity group such as Black women, White women, Black men, and White men. This specification likely appeals to those who think about intersectionality primarily in terms of identity groups. The second way involves including dichotomous independent variables that capture the relevant categories of difference, such as gender and race, as well as their interactions. This specification likely appeals to those who think about intersectionality primarily in terms of structure and interacting axes of inequality. While the second specification is easily recognized as an interaction model,

⁸We recognize that there is much heated debate in the literature about the relative 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 unnecessarily 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 scholars who choose to 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 [Online Appendix H](#).

⁹We focus on discrete categories of difference in what follows. However, we note that interaction models can easily handle any combination of both continuous and discrete independent variables or categories of difference (Clark and Golder, 2023).

some scholars appear to be unaware that the first specification is also an interaction model.¹⁰ The two specifications may look different, but they are equivalent in the sense that they estimate the exact same quantities of interest. In other words, the two specifications are just different versions of the *same* interaction model.

We start by briefly discussing a variant of the first specification that is never recommended for testing a claim of intersectionality. We do this because this variant is not uncommon in the existing literature. 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 support for the Republican Party and *Black Female* is a dichotomous variable that equals 1 if the individual is a Black woman and 0 otherwise. The coefficient δ_1 tells us the effect of being a Black woman as opposed to not being a Black woman. The fundamental problem with this specification is that there are three different ways of not being a Black woman that are being lumped together — one could be a White woman, a Black man, or a White man. In other words, the counterfactual scenario used to estimate the effect of being a Black woman is a weighted mixture of different identity groups, where the weights are related to the proportions that these groups represent in the sample. By mixing these different identity groups into the counterfactual, the model essentially assumes that these groups are identical with respect to Republican support, something that is unlikely to be realistic but in any case is something that should be tested rather than assumed. Ultimately, the model in Eq. 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 bottom line is that this particular specification is never appropriate for testing the implications of an intersectional theory.

The first appropriate way to specify a model to test a claim of intersectionality involves including $K - 1$ dichotomous independent 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

¹⁰Indeed, Reingold, Haynie and Widner (2020, 13) contrast these two specifications, explicitly stating that the first one, which they argue is appropriate for testing an intersectional claim, is not an interaction model.

all of the possible combinations of values for an individual’s race and gender. Thus, our model would be

$$\text{Republican Support} = \gamma_0 + \gamma_1 \text{White Female} + \gamma_2 \text{Black Male} + \gamma_3 \text{Black Female} + \varepsilon, \quad (2)$$

where *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, and so its inclusion in the model 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.¹¹ Note that the estimated coefficients from this model are identical to those we would obtain from simply conducting difference-in-means tests between each of the identity groups.¹² This means that scholars who choose not to adopt a regression framework to evaluate their intersectional claims, perhaps preferring to simply compare means or employ more qualitative or interpretive comparisons across groups, are, from a practical perspective, adopting the same modeling strategy as that shown in Eq. 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 or axes of inequality. In our current substantive 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

¹¹The choice of identity group to omit is arbitrary in that we obtain the exact same estimates for our quantities of interest no matter which group is omitted. The choice of omitted group influences the types of identity group comparisons that can be made directly from the regression output. The model coefficients, though, can always be used to calculate any identity 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 [Online Appendix D](#). Some scholars argue that the choice of omitted group nonetheless still matters. For example, some believe that White men should not be used as the omitted category as this perpetuates the idea that White men are the reference category — the ‘norm’ — against which other groups should be compared. While we recognize the point being made, the counterargument is that by choosing White men as the omitted group, we get to focus on the agency of less privileged groups. In effect, we get to focus on the effect of being a Black woman, Black man, or a White woman rather than a White man.

¹²The benefit of adopting the regression framework over conducting a series of difference-in-means tests is that we can conduct multiple comparisons simultaneously and that it is easier to add any necessary control variables.

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 $Black$.¹³

While the two models, and hence research designs, in Eq. 2 and Eq. 3 look quite different, they are, in fact, exactly equivalent. To see why, we must start by recognizing that the dichotomous variables $White$, $Female$, $Black$, $Black$ Male, and $Black$ Female in Eq. 2 are each interaction terms.¹⁴ For example, $Black$ Female is an interaction term created by multiplying together the variables $Black$ and $Female$. To see this more clearly, think about how one would go about identifying the Black women in a sample. A Black woman is someone who is coded as $Black = 1$ and $Female = 1$. Practically speaking, 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 as $1 \times 1 = 1$, White women are coded as $0 \times 1 = 0$, Black men are coded as $1 \times 0 = 0$, and White men are coded 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 shown in Eq. 2, as well as those who make quantitative or qualitative comparisons across cross-cutting identity groups, are implicitly adopting an interactive framework.

We can rewrite Eq. 2 to explicitly recognize that the dichotomous variables capturing identity group membership are interaction terms,

$$Republican\ Support = \gamma_0 + \gamma_1 \underbrace{Female_1 \times Black_0}_{\text{White Female}} + \gamma_2 \underbrace{Female_0 \times Black_1}_{\text{Black Male}} + \gamma_3 \underbrace{Female_1 \times Black_1}_{\text{Black Female}} + \varepsilon, \quad (4)$$

where $Female_0$ is a dichotomous variable that equals 1 when $Female = 0$ and 0 otherwise, $Female_1$ is a dichotomous variable that equals 1 when $Female = 1$ and 0 otherwise, $Black_0$ is a dichotomous variable that equals 1 when $Black = 0$ and 0 otherwise, and $Black_1$ is a dichotomous variable that equals 1 when $Black = 1$ and 0 otherwise. It should be immediately obvious that $Female_1$ is the same as $Female$ and that $Black_1$ is the same as $Black$. As a result, we can rewrite Eq. 4 as

$$Republican\ Support = \gamma_0 + \gamma_1 \underbrace{Female \times Black_0}_{\text{White Female}} + \gamma_2 \underbrace{Female_0 \times Black}_{\text{Black Male}} + \gamma_3 \underbrace{Female \times Black}_{\text{Black Female}} + \varepsilon. \quad (5)$$

¹³Constitutive terms refer to the variables that ‘constitute’ the interaction term when they are multiplied together. Scholars should, except in very rare circumstances, always include the constitutive terms, along with the interaction term, when specifying a ‘standard’ interaction model in order to avoid omitted variable bias (Brambor, Clark and Golder, 2006, 66-71).

¹⁴Clark and Golder (2023) refer to these types of variables as “hidden interaction terms” because scholars so regularly fail to recognize that these variables are interaction terms. Other examples of “hidden interaction terms” include *Black Democrats*, *Male Republicans*, *College Educated Women*, *Rural Poor*, *Black Female Lesbians*, and so on.

To see that this model is exactly equivalent to the ‘standard’ interaction model shown in Eq. 3, note that $Female_0$ and $Black_0$ are just the opposite of $Female$ and $Black$. In other words, $Female_0 = 1 - Female$ and $Black_0 = 1 - Black$. This means that we can rewrite Eq. 5 as

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

Distributing and collecting terms, we have

$$Republican\ Support = \gamma_0 + \gamma_1 Female + \gamma_2 Black + (\gamma_3 - \gamma_1 - \gamma_2) Female \times Black + \varepsilon. \quad (7)$$

We can now see that the model specification shown in Eq. 2 is just an algebraic transformation of the ‘standard’ interaction model shown in Eq. 3, where $\beta_0 = \gamma_0$, $\beta_1 = \gamma_1$, $\beta_2 = \gamma_2$, and $\beta_3 = \gamma_3 - \gamma_1 - \gamma_2$. In effect, the two models are different representations of the *same* interaction model. In what follows, we refer to the specification shown in Eq. 3 as the *standard* interaction model and the one shown in Eq. 2 as the *alternative* interaction model.¹⁵

3.2 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 Eq. 3. We do so because there is some confusion about how to interpret this type of model among intersectionality scholars. In her much cited article, for example, [Weldon \(2006, 243\)](#) states that β_1 captures the separate effect of gender, β_2 captures the separate effect of race, and β_3 captures the mutually reinforcing or joint effect of gender and race. Each of these statements is inaccurate.

The effect of gender — the effect of being a woman instead of a man — on Republican support is

$$\frac{\partial Republican\ Support}{\partial Female} = \beta_1 + \beta_3 \times Black. \quad (8)$$

We see from this that the coefficient on $Female$, β_1 , does not tell us the separate effect of gender in any

¹⁵We have explicitly shown that the two modeling approaches are equivalent when the categories of difference are dichotomous. However, this equivalence will always hold when the categories of difference are discrete. This means that it continues to hold when the categories of difference have more than two (unranked or ranked) discrete values. In [Online Appendix G](#), we show how to specify equivalent alternative and standard interaction models when we have two gender categories and *three* racial categories.

general sense.¹⁶ So long as $\beta_3 \neq 0$, the effect of gender depends on, or changes with, one’s race. To be specific, the effect of being female as opposed to male is β_1 among Whites ($Black = 0$) but $\beta_1 + \beta_3$ among Blacks ($Black = 1$). Put differently, β_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 — on Republican support is

$$\frac{\partial \text{Republican Support}}{\partial \text{Black}} = \beta_2 + \beta_3 \times \text{Female}. \quad (9)$$

We see that the coefficient on *Black*, β_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, or changes with, one’s gender. Specifically, the effect of being Black as opposed to White is β_2 among men ($Female = 0$) but $\beta_2 + \beta_3$ among women ($Female = 1$). Put differently, β_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.¹⁷

The critical thing to recognize is that so long as $\beta_3 \neq 0$, the individual coefficients on the constitutive terms *Female* and *Black* never tell us the separate effects of gender and race. Many scholars make this mistake and slip into interpreting the coefficients on these variables as if they capture unconditional or separate effects. Because the terminology used to discuss constitutive terms in interaction models varies across disciplines, we would like to reiterate that claiming that the coefficients on constitutive terms such as *Female* and *Black* somehow represent “unconditional”, “main”, “independent”, “separate”, or “average” effects is simply wrong, as it implies that they can be interpreted in the same way as they would in a linear-additive model. 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 β_3 . We can see this by looking back at

¹⁶Technically, it does not make sense to take a derivative of a discrete variable like *Female* as we cannot have an infinitesimally small or ‘marginal’ change in such a variable. However, in a linear-interactive model in which the interaction is linear, treating the discrete variable ‘as if’ it were continuous and calculating a derivative is equivalent to calculating a ‘difference’ and tells us the effect of a one-unit increase in the discrete variable.

¹⁷To determine whether the effects of being female and being Black shown in Eq. 8 and 9 are statistically significant requires calculating appropriate measures of uncertainty. We discuss how to do this in [Online Appendix A](#).

the effects of *Female* and *Black* in Eq. 8 and Eq. 9. If β_3 is zero, then 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 this particular context. 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 β_3 is different from zero, then we see that 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 non-separable effects and that the empirical evidence is consistent with intersectionality. Due to the inherent symmetry of interactions (Brambor, Clark and Golder, 2006; Kam and Franzese, 2007; Berry, Golder and Milton, 2012), the coefficient on the interaction term tells us both how race modifies the effect of gender and how gender modifies the effect of race.¹⁸ 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 evidence of 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, evidence of 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 Whites to Blacks or, equivalently, the *change* in the difference between Whites and Blacks when we move from men to women.¹⁹

¹⁸This can be shown formally by taking the derivative of the effect of gender shown in Eq. 8 with respect to race and the derivative of the effect of race shown in Eq. 9 with respect to gender,

$$\frac{\partial (\beta_1 + \beta_3 \text{Black})}{\partial \text{Black}} = \frac{\partial (\beta_2 + \beta_3 \text{Female})}{\partial \text{Female}} = \beta_3. \quad (10)$$

¹⁹We 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 (Saperstein and Penner, 2012; Davenport, 2018, 2020; Janusz, 2021), 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 their empirical claims (Zuberi, 2000). Other factors that work against providing a causal interpretation to the effects of gender and race include concerns about potential post-treatment 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

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 intersectional theory might imply that gender and race always matter but that their effects vary across racial and gender groups. An alternative intersectional possibility is that gender matters for Whites but not for Blacks and that race matters for men but not women. Scholars often think they need to employ different models to evaluate these different stories (Weldon, 2006, 242-243). 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,

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

	Standard Interaction Model	Alternative Interaction Model
<i>No intersectionality</i>	$\beta_3 = 0$	$\gamma_3 - \gamma_1 - \gamma_2 = 0$
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	$\beta_1 \neq 0, \beta_2 \neq 0$	$\gamma_1 \neq 0, \gamma_2 \neq 0$
<i>Intersectionality</i>	$\beta_3 \neq 0$	$\gamma_3 - \gamma_1 - \gamma_2 \neq 0$
Gender matters, but differently, for both Whites & Blacks; Race matters, but differently, for both men & women	$\beta_1 \neq 0, \beta_1 + \beta_3 \neq 0,$ $\beta_2 \neq 0, \beta_2 + \beta_3 \neq 0$	$\gamma_1 \neq 0, \gamma_3 - \gamma_2 \neq 0$ $\gamma_2 \neq 0, \gamma_3 - \gamma_1 \neq 0$
Gender matters for Whites but not Blacks; Race matters for men but not women	$\beta_1 \neq 0, \beta_1 + \beta_3 = 0,$ $\beta_2 \neq 0, \beta_2 + \beta_3 = 0$	$\gamma_1 \neq 0, \gamma_3 - \gamma_2 = 0$ $\gamma_2 \neq 0, \gamma_3 - \gamma_1 = 0$
Gender matters for Blacks but not Whites; Race matters for women but not men	$\beta_1 + \beta_3 \neq 0, \beta_1 = 0$ $\beta_2 + \beta_3 \neq 0, \beta_2 = 0$	$\gamma_3 - \gamma_2 \neq 0, \gamma_1 = 0$ $\gamma_3 - \gamma_1 \neq 0, \gamma_2 = 0$

Note: Table 1 shows three possible stories about the impact of gender and race that do not predict intersectionality and three that do.

of research designs that can be used to make causal claims about the effects of categories of difference such as race and gender. Both research designs can easily be made ‘interactive’ to allow for the possibility of intersectionality.

we encourage scholars to always use their theories to derive directional predictions whenever possible.²⁰

3.3 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 and, as a result, the exact same quantities of interest can be calculated from both models. 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.²¹

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, such as gender and race, 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 non-zero 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.²² Evidence of intersectionality is important because it is a necessary condition for concluding that an intersectional theory is supported. There is little point further evaluating the empirical implications of an *intersectional* theory if there is no evidence of intersectionality.²³

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

²⁰We note that we make five predictions for each of the intersectional theories shown in Table 1. These predictions relate to (1) the presence of interaction/intersectionality, β_3 , (2) the effect of gender among Whites, β_1 , (3) the effect of gender among Blacks, $\beta_1 + \beta_3$, (4) the effect of race among men, β_2 , and (5) the effect of race among women, $\beta_2 + \beta_3$. Later we will refer to these as the *five key predictions* that can be derived from a theory positing interaction between two dichotomous categories of difference.

²¹We 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 [Online Appendix C](#).

²²While we can calculate $\gamma_3 - \gamma_1 - \gamma_2$ from published research using the alternative model by looking at the individual coefficients, we cannot so easily determine whether this quantity is statistically significant. This is because most scholars do not report information about the relevant covariance terms needed to calculate the appropriate standard error ([Online Appendix A](#)).

²³Arguably, the standard interaction model also enjoys a conceptual advantage over the alternative model in that it seems to fit more closely with the focus of intersectionality research on the structural aspects of power relations. By this, we mean that the variables and form of the standard model put the emphasis on interacting axes of inequality, whereas the variables and form of the alternative model put the emphasis on different identity groups. We do not want to emphasize this point too much, though, as we have shown that the two models are exactly equivalent to one another.

the 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 Eq. 2, White men act as the reference category and so γ_1 indicates the effect of being a White woman as opposed to a White man, γ_2 indicates the effect of being a Black man as opposed to a White man, and γ_3 indicates the effect of being a Black woman instead of a White man. Note that γ_3 indicates the joint effect of ‘changing’ the values of *both* the gender and race of the reference category. While β_1 and β_2 in the standard interaction model are equivalent to γ_1 and γ_2 in the alternative model, there is no equivalent coefficient in the standard model for γ_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.²⁴

No matter which model we employ, we will have to make some post-estimation 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.

In passing, we note that scholars sometimes claim that the implications of 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 [Online Appendix E](#). The bottom line, though, 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.

4 Theory: Moving Beyond a Claim of Intersectionality

Scholars who are empirically evaluating the implications of an intersectional theory often focus on the claim of intersectionality. As we have seen, 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

²⁴This potential advantage of the alternative interaction model should not be overstated, though, as scholars rarely make specific theoretical predictions about the joint, as opposed to the intersectional, effect of categories of difference like gender and race.

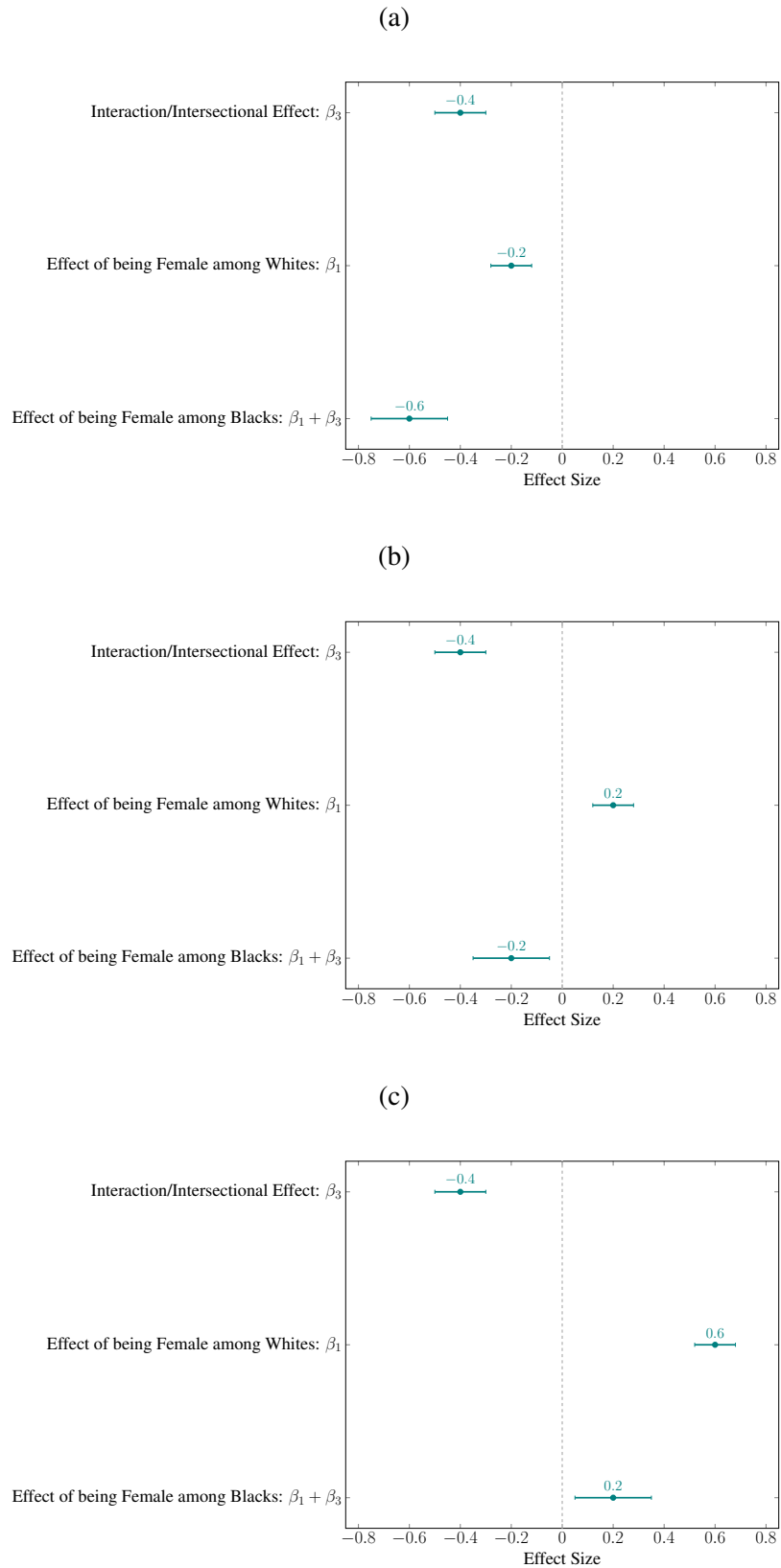
expect any interaction effect to be negative. In other words, we might expect race and gender to interact such that being Black as opposed to White exacerbates the inequality between women and men and being female as opposed to male exacerbates the inequality between Blacks and Whites. We encourage scholars whenever possible to not only make predictions 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 Eq. 3. While our discussion applies to both categories of difference, we focus our attention on the conditional effect of gender. Recall that the effect of *Female* is $\beta_1 + \beta_3 \times \textit{Black}$. Suppose that our theory predicts that women always exhibit less Republican support than men but that this negative effect is stronger among Blacks than Whites. This prediction clearly 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 β_3 and β_1 (as well as the value of *Black*). As a result, 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 on Republican Party support for either Whites or Blacks. This is important because different values for β_1 imply quite different ways in which gender and race interact to determine Republican support.

To see this graphically, consider Figure 3, which shows three possible 'marginal effect plots' for gender that each 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 Whites (β_1) and Blacks ($\beta_1 + \beta_3$). The circles indicate point estimates, while the horizontal bars represent confidence intervals. Recall that the

Figure 3: The Conditional Effect of Gender on Republican Party Support



point estimate for the interaction effect is just the difference in the point estimates for the effect of gender among Whites and Blacks. Although all three plots have the same interaction effect and hence provide the same evidence with respect to intersectionality, each plot tells a very different story about how gender affects Republican support. These different stories arise because the value for β_1 is different in each plot.

Only the plot in Figure 3a is consistent with our intersectional theory. In this plot, the effect of being female is always negative and more so among Blacks. The plot in Figure 3b is not consistent with our theory. While the effect of being female is negative among Blacks, it is, contrary to expectations, positive among Whites. 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 Whites and Blacks. 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.²⁵ This is critical because the plot in Figure 3c indicates that men, rather than women, always exhibit less Republican support.

While we have focused on the conditional effect of gender, our discussion here also applies to the conditional 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 on Republican support for either men or women. This is why we encourage scholars to always supplement a prediction about the sign of any intersectionality with predictions about the signs of the conditional 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 possible value of race and predictions about the effect of race for each possible value of gender. If gender and race are assumed to each take on two values, then this amounts to five key predictions: (1) the interaction/intersectional effect between gender and race, (2) the effect of gender among Whites, (3) the effect of gender among Blacks, (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 shown in Table 1.²⁶ As we show in [Online Appendix B](#), there are fifteen theoretically possible ways in which gender and race could interact to affect some outcome of interest. Only by making all five of our key predictions can scholars know whether the data support their particular

²⁵Figure 3 shows just three of the possible relationships for the conditional effect of gender that could arise from an intersectional theory positing an interaction between gender and race. There are, in fact, ten possible relationships, each telling a different story of how gender affects Republican support. All ten of these relationships are shown and explained in [Online Appendix B](#).

²⁶There 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 [Online Appendix F](#) that there are at least nineteen key predictions that can be made when there are three interacting categories of difference that can each take on two values.

intersectional theory as opposed to one of the other fourteen possible stories.

In Table 2, we indicate the quantities of interest from the standard interaction model in Eq. 3 and the alternative interaction model in Eq. 2 that are necessary for evaluating our five key predictions. Whether the predictions should be positive, negative, or zero will depend on the particular intersectional theory under consideration. While we encourage scholars to use their intersectional theory to make these five predictions, there is no need to present them as five separate hypotheses. As we demonstrate 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.

Table 2: Five Key Predictions: Comparing the Standard and Alternative Interaction Models

Key Prediction	Standard Interaction Model	Alternative Interaction Model
1. $P_{Gender \times Race}$	β_3	$\gamma_3 - \gamma_1 - \gamma_2$
2. $P_{Gender Race=White}$	β_1	γ_1
3. $P_{Gender Race=Black}$	$\beta_1 + \beta_3$	$\gamma_3 - \gamma_2$
4. $P_{Race Gender=Male}$	β_2	γ_2
5. $P_{Race Gender=Female}$	$\beta_2 + \beta_3$	$\gamma_3 - \gamma_1$

5 Application: Gender, Race, and Support for the Republican Party

To demonstrate how scholars can maximize the information from an empirical study of intersectionality, we examine how race (Black/White) and gender (female/male) affected how much people liked the Republican Party during the 2016 U.S. presidential elections. In terms of race, Blacks are expected to exhibit less support for the Republican Party than Whites. One reason for this is that the Republican Party espouses a conservative policy position on the issues of civil rights and race that is more congruent with the preferences of Whites than with the more liberal preferences of Blacks. These particular issues were especially salient during the 2016 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; Newman, Shah and Collingwood,

2018; Swain, 2018). In terms of gender, 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 policy issues related to things like healthcare, same sex marriages, restrictions on firearms, and government activism where women have historically held a more liberal position than men (Burns, Schlozman and Verba, 2001; Box-Steffensmeier, Boef and Lin, 2004; Kaufmann, 2002, 2006). 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 the Democrats over the Republicans since the early 1980s (Bock, Byrd-Craven and Burkley, 2017; Schaffner, MacWilliams and Nteta, 2018; Frasure-Yokley, 2018; Cassese and Barnes, 2019).

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 to determine Republican support. Scholars of intersectionality have long argued that it is not always appropriate to treat groups, such as women, men, Blacks, and Whites, as homogenous and that we need to recognize that categories of difference such as race and gender “interact to form qualitatively different meanings and experiences” (Crenshaw, 1989; McCall, 2005; Weldon, 2006; Hancock, 2007, 2016; Warner, 2007, 454). In our case, women and men may exhibit different levels of support for the Republican Party depending on their race, and Blacks and Whites 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 (Jordan-Zachery, 2003; Hancock, 2004; Gillespie and Brown, 2019). 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; Anderson, 2018; Smith, 2018). 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; Nellis, 2016; Anderson, 2018; Subramanian, Riley and Mai, 2018). 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 support for the Republican Party.²⁷

²⁷Our argument here is consistent with previous research suggesting that the influence of Whiteness, gender stereotypes, and socioeconomic status on voting in 2016 meant that media narratives of Trump’s alleged ‘women problem’ were exaggerated (Parker, 2016; Reston and Glover, 2016; Westwood, 2019). There is evidence, for example, that White women, especially those with lower education levels and those residing in southern or rust-belt states, have historically supported GOP presidential candidates since the 1950s (Huddy, Cassese and Lizotte, 2012; Dittmar, 2016; Williams, 2017; Cassese, 2017; Junn, 2017; Cassese and Barnes, 2019; Junn and Masuoka, 2020). Our argument is also consistent with prior research suggesting that Trump’s machismo and misogynistic rhetoric was more effective at shaping the voting preferences of White men than those of Black men (Bracic, Israel-Trummel and

We can derive the following two 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 Blacks than Whites.

Black Hypothesis: Blacks will always like the Republican Party less than Whites. This negative effect is larger among women than men.

Together, these two hypotheses contain all five of the key predictions we recommend for an intersectional argument positing an interaction between gender and race. The *Female Hypothesis* implies that the effect of gender is negative for both Whites and Blacks. The *Black Hypothesis* implies that the effect of race is negative for both men and women. Both hypotheses imply that there is negative intersectionality between gender and race because the negative effect of gender is expected to be stronger among Blacks than Whites and the negative effect of race is expected to be stronger among women than men.

We test our hypotheses using data from the ANES 2016 Time Series Study ([American National Election Studies, 2019](#)). 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* × *Black* is an interaction term created by multiplying together the constitutive terms *Female* and *Black*.²⁸ As a control variable, we include a respondent’s *Age* in years.²⁹ We treat our dependent variable as continuous and estimate an ordinary least squares regression with the same basic standard interactive specification shown earlier in Eq. 3.³⁰

Our two hypotheses speak to the conditional effects of gender and race on Republican support. The effect of being female as opposed to male is $\beta_1 + \beta_3 \text{Black}$. According to our *Female Hypothesis*, women should always exhibit less Republican support than men, but this negative effect should be larger for Blacks than Whites. It follows, therefore, that β_1 and $\beta_1 + \beta_3$ should both be negative. Since the negative effect of

Shortle, 2018; Ratliff et al., 2017; Schaffner, MacWilliams and Nteta, 2018; Valentino, Wayne and Ocono, 2018).

²⁸Individuals who do not identify as White or Black are excluded because our theory makes no specific predictions about them.

²⁹Our 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 support for the Republican Party, but rather to show how to correctly interpret and present the information from an empirical analysis of the implications of our intersectional argument. We note that our results and inferences are robust to also controlling for a respondent’s education and income.

³⁰In [Online Appendix D](#), we conduct the same analysis but use the alternative interactive specification shown in Eq. 2.

being female should be larger among Blacks, it also follows that β_3 should be negative. The effect of being Black as opposed to White is $\beta_2 + \beta_3 \text{Female}$. According to our *Black Hypothesis*, Blacks should always exhibit less Republican support than Whites, but this negative effect should be larger for women than men. It follows, therefore, that β_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 β_3 should be negative.

Our results are shown in Table 3. The coefficient on *Female* is negative and statistically insignificant. This tells us that being female as opposed to male has no significant effect on Republican support among Whites (*Black* = 0). Put differently, there is no significant difference in Republican support between White women and White men. The coefficient on *Black* is negative and statistically significant. This tells us that being Black as opposed to White 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

Table 3: Gender, Race, and Support for the Republican Party in the 2016 U.S. Presidential Elections

Dependent Variable: *Republican Support*, 0 – 10

Standard Interaction Model	
<i>Female</i>	–0.04 (0.12)
<i>Black</i>	–1.50*** (0.27)
<i>Female</i> × <i>Black</i>	–1.03*** (0.35)
<i>Age</i>	0.02*** (0.003)
<i>Constant</i>	4.47*** (0.18)
Observations	2, 858
R^2	0.07

Standard errors in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed)

to remember here 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 the interaction term *Female*×*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 Whites to Blacks. The coefficient on *Age* is positive and statistically significant, indicating that each year of an individual's life is associated with a 0.02 unit increase in Republican support.

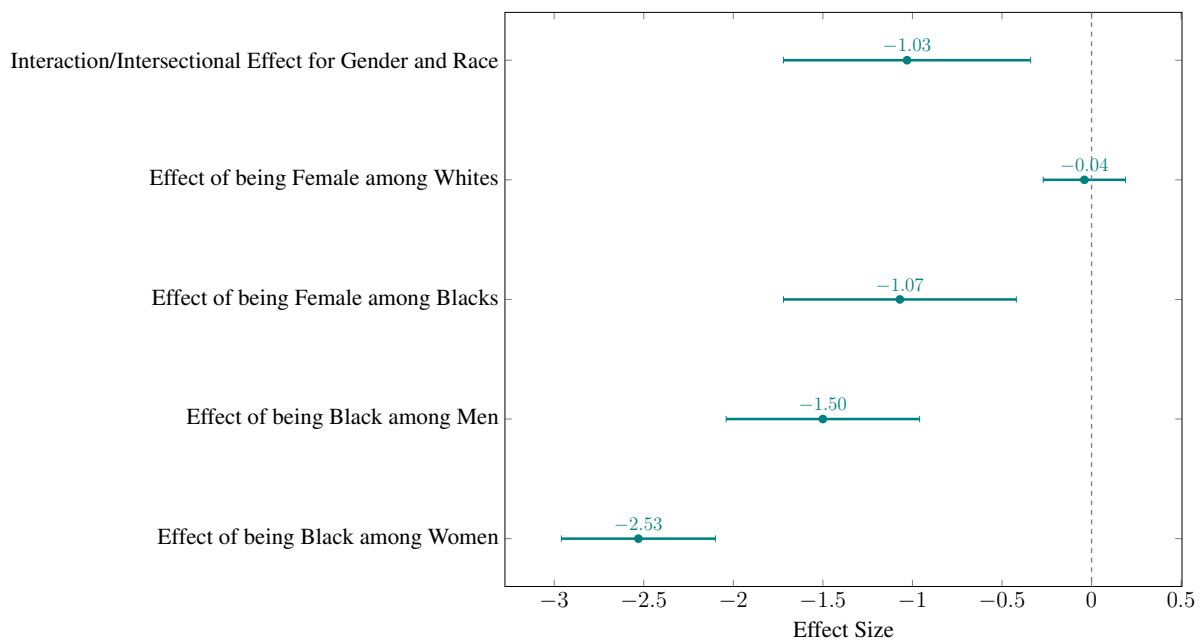
To fully evaluate our intersectional theory, we need to examine all five of the key predictions contained in the *Female Hypothesis* and the *Black Hypothesis*. Table 3 provides the information necessary to evaluate three of these predictions: (1) the interaction or intersectional effect between gender and race, (2) the effect of *Female* when *Black* = 0, and (3) the effect of *Black* when *Female* = 0. What we cannot see directly from the regression output is the effect of *Female* when *Black* = 1 and the effect of *Black* when *Female* = 1. To evaluate these particular effects, we need to 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 of the information necessary to evaluate our five key predictions. How should we present it? Perhaps 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 Whites and -1.07 $[-1.72, -0.42]$ among Blacks. 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 Whites when it comes to liking the Republican Party but it does among Blacks. 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 liking the Republican Party, 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 that they interact negatively to determine support for the Republican Party. Specifically, it indicates that

the negative effect of being a woman on support for the Republican Party is 1.03 units larger for Blacks than Whites and that the negative effect of being Black is 1.03 units larger for women than men.

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 Whites and Blacks, 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 Whites 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.

Figure 4: The Conditional Effects of Gender and Race on Republican Support in the 2016 U.S. Presidential Elections



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 Party support exhibited by each of the four identity groups in our sample. For example, we might want to know how much, say, a forty year old White man, White woman, Black

man, and Black woman likes the Republican Party. The predicted level of support for the Republican Party is $\beta_0 + \beta_4 \times 40 = 4.47 + 0.02 \times 40 = 5.08$ [4.90, 5.26] for a forty 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 forty 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 forty 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 forty year old Black woman. These predicted values are shown in the 2×2 teal-colored square in Figure 5.

Figure 5: Predicted Values and the Conditional Effects of Gender and Race on Support for the Republican Party in the 2016 U.S. Presidential Elections

		Race		Difference
		White	Black	
Gender	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)

Note: The colored square shows how the predicted level of support for the Republican Party varies depending on whether a forty year old is a White man, a White woman, a Black man, or a Black woman. The dependent variable, *Republican Support*, is measured on a 0 – 10 scale. The effect of gender (male → female) for Whites and Blacks is shown in the bottom ‘Difference’ row, while the effect of race (White → Black) for men and women is shown in the right ‘Difference’ column. The interaction or intersection effect is shown in red in the bottom right corner.

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 forty year old men to our forty 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 forty 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 row in Figure 5 and are, of course, identical to the conditional effects of gender reported earlier in Figure 4. We can also calculate the effect of

race by comparing our White forty year olds to our Black forty 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 forty 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 conditional 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 depending on 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 depending on 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 red in the lower right cell in Figure 5.

The advantage of Figure 5 over Figure 4 is that the inclusion of the predicted values provides us with a useful metric for evaluating whether the estimated magnitude of the conditional effects of gender and race are substantively, and not just statistically, significant. We see that the effect of being female among Whites is not only statistically insignificant, but it is also substantively insignificant as it equates to a reduction of only $\frac{0.04}{5.08} \times 100 = 0.008\%$ in the 'baseline' level of Republican support among our White men. Figure 5 shows that all of the other effects are substantively important. For example, the effect of being female among Blacks equates to a $\frac{1.07}{3.58} \times 100 = 29.9\%$ reduction in Republican support among our Black men. The effect of being Black among men equates to a $\frac{1.50}{5.08} \times 100 = 29.5\%$ reduction in Republican support among our White men. And the effect of being Black among women equates to a $\frac{2.53}{5.04} \times 100 = 50.2\%$ reduction in Republican support among our White women. With respect to the interaction or intersectional effect, we see that the negative impact of gender, or being female, on Republican support is about $\frac{-1.07}{-0.04} = 25$ times larger for Blacks than Whites and that the negative effect of race, or being Black, is about $\frac{-2.53}{-1.50} = 1.68$ times or 68% 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 intersectional 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 Whites 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 how much individuals like the Republican Party. 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 Whites (Huddy, Cassese and Lizotte, 2012; Dittmar, 2016; Strolovitch, Wong and Proctor, 2017; Williams, 2017; Cassese, 2017; Junn, 2017; Cassese and Barnes, 2019; Junn and Masuoka, 2020). They also highlight how gender exacerbates the negative effect of race on Republican support. While Blacks always exhibit less Republican support than Whites, the negative effect of race is significantly stronger among women than men (Gillespie and Brown, 2019; Coaston, 2019).³¹

6 Conclusion

Over the last forty 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 non-separability of categories of difference and maximize the substantive information obtained from empirical analyses.³²

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 division or cleavage within an identity group such as, say, women. This is because heterogeneity within an identity group can be 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 of 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 [Online Appendix F](#),

³¹In [Online Appendix F](#), we extend our substantive application to examine how incorporating class as an additional third category of difference adds to, and complicates, our intersectional argument and modifies the inferences we draw from the data.

³²We recognize the great diversity that exists within the intersectionality paradigm and that not all scholars who adopt an intersectionality framework are necessarily interested in specifically identifying evidence of intersectionality. For example, the primary goal of many scholars who adopt an intracategorical approach to intersectionality is to center the lived experiences of particular groups such as Black women who have historically been marginalized or ignored. Other intersectionality-inspired scholars are interested in things like the gender-specific ways that a person might experience anti-Black discrimination (Bailey, 2010, 2021) or the degree to which a Black woman identifies with the ‘Black Superwoman’ stereotype (Gillespie, 1984; Wallace, 1990; Beauboeuf-Lafontant, 2009). That said, our advice becomes relevant *if* these scholars seek to explain these types of phenomena in terms of intersecting axes of inequality because there is now a claim of intersectionality that can be evaluated.

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. Ultimately, 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 non-marginalized groups in empirical analyses that specifically seek to evaluate a claim of intersectionality.

Many scholars of intersectionality adopt a quantitative approach in their research. We recognize that some have employed or discussed the use of interaction models (Simien, 2005b; Weldon, 2006; Hancock, 2007, 2013; Brown, 2014b; Jackson, 2020). Unfortunately, there is considerable uncertainty in the literature regarding these types of models and mistaken beliefs are common. In this article, 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 the implications from an intersectional theory when the categories of difference are conceptualized as discrete. The ‘standard’ interaction model explicitly specifies the interactions between our categories of difference. In contrast, the ‘alternative’ interaction 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 underlying 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 upon 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. As we demonstrated, 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 fifteen theoretically possible ways that two dichoto-

mous 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 if the empirical evidence supports their particular intersectional story as opposed to one of the other fourteen possible intersectional stories.³³ To date, few existing studies of intersectionality exploit all of the implications of their theory. Ultimately, we believe that considerable progress can be made in maximizing the insights from intersectionality if scholars follow the theoretical and methodological advice provided in this article.

³³As we see in [Online Appendix F](#), the number of theoretically possible intersectional relationships between categories of difference, and hence the number of key predictions needed to distinguish between them, grows rapidly as we increase the number of categories of difference.

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