Running Head: REPLICATION OF WILKINS & KAISER (2014)

Do Status-Legitimizing Beliefs Moderate Effects of Racial Progress on Perceptions of Anti-White Bias? A Replication of Wilkins & Kaiser (2014)

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Abstract

In three studies, Wilkins and Kaiser (2014) found that both chronic and experimental salience of racial progress increased perceptions of anti-White bias only among people high in status-legitimizing beliefs (SLBs). We conducted four preregistered high-powered replications of this research. Studies 1, 2, and 3a were close replications of Studies 1 – 3, respectively. Study 3b was a close replication that included an additional experimental condition. Contrary to the original findings, none of the four expected interaction effects tested were statistically significant in the predicted direction, and only one of the four survived a “small telescopes” analysis. We provide additional tests addressing whether changing social contexts explain our failures to replicate, with mixed conclusions.

Keywords: anti-White bias; racial progress; status; replication

Do Status-Legitimizing Beliefs Moderate Effects of Racial Progress on Perceptions of Anti-White Bias? A Replication of Wilkins & Kaiser (2014)

Historically, racial discrimination in the United States has involved Whites as the perpetrators of discrimination, and racial minorities as the victims. That said, following the election and re-election of their first Black U.S. president, Americans perceived greater progress toward racial equality (Sears & Tesler, 2011), and that discrimination towards minority groups was less of an issue now than it once was (Kaiser, Drury, Spalding, Cheryan, & O'Brien, 2009). Indeed, Norton and Sommers (2011) demonstrated that whereas Whites and Blacks both recognize anti-Black bias in racial discrimination in past decades, Whites (but not Blacks) currently perceive anti-White bias (i.e., greater discrimination against Whites than Blacks). Together, this work could suggest that as racial progress has increased over time, Whites' perceptions of anti-Black bias have decreased and their perceptions of anti-White bias have increased.

Wilkins and Kaiser (2014) examined whether perceptions of racial progress explain increased perceptions of anti-White bias, especially among Whites who endorse ideologies that justify existing status hierarchies, i.e., status-legitimizing beliefs (SLBs; e.g., Jost & Banaji, 1994). In Study 1, they found that Whites' perceptions of racial progress were associated with increased perceptions of anti-White bias, but only among people high in SLBs. In Study 2, they experimentally manipulated perceptions of racial progress, finding that reminders of racial progress increased perceptions of anti-White bias, but only among people high in SLBs. In Study 3, building on the assumption that racial progress is threatening to Whites high in SLBs, all participants were reminded of racial progress, and were assigned to either a self-affirmation or

non-affirmation condition. Self-affirmation reduced perceptions of anti-White bias, but only among people high in SLBs.

We conducted four high-powered, preregistered close replications of Wilkins and Kaiser's (2014) three studies. Besides the general importance of replicability in psychological science (e.g., Brandt et al., 2014; Open Science Collaboration, 2015), it is important to replicate these studies for two primary reasons. First, there are statistical concerns. The original sample sizes were fairly small ($Ns = 71, 160, \text{ and } 95$ in Studies 1 – 3, respectively). This is especially concerning given that designs with continuous interaction effects (such as in the original studies) are commonly underpowered (Aguinis, Boik, & Pierce, 2001), and underpowered studies typically overestimate effect sizes (Ingre, 2013). Further, there is reason for concern when multiple reported p -values are just under .05 (Simonsohn, Nelson, & Simmons, 2014); p -values for the interaction terms were .05, .01, and .04 in Studies 1 – 3, respectively.

Second, between the racialized rhetoric surrounding Donald Trump's candidacy and presidency, and increased attention to shootings of unarmed Black men by police officers and subsequent protests, one may question whether these effects would replicate due to changes in the social context (Van Bavel, Mende-Siedlecki, Brady, & Reinero, 2016) between when the original studies were collected (in 2012, under Barack Obama's presidency) and today.

Studies 1, 2, and 3a are close replications of the original Studies 1 – 3, respectively. Study 3b was also a close replication of Study 3, except that we added an “enhanced” racial progress condition to the design to counter potential changes in social context. The replications were preregistered on the OSF (<https://osf.io/dt9za/>). If these studies fail to replicate, it is likely impossible to rule out changing social contexts as an explanation. Nevertheless, we report exploratory analyses to address this possibility.

Method

Participants

Wilkins and Kaiser (2014) recruited 79, 168, and 100 White participants for Studies 1 – 3, respectively. Following exclusion for random clicking, 71, 160, and 95 participants remained in their analyses for Studies 1 – 3, respectively. Based on Simonsohn's (2015) recommendation, we aimed to collect samples at least 2.5 times larger than the original samples. We recruited 222, 410, and 264 White participants for our Studies 1, 2, and 3a. We recruited five times the original sample size of Study 3 for our Study 3b ($N = 505$) because we added a third condition to the original two-condition design. Following exclusion for random clicking, 215, 394¹, 257, and 487 participants remained in Studies 1, 2, 3a, and 3b, respectively. Studies 1 and 2, and 3a were collected in July 2017 (participants were randomly assigned to one of the three studies), and Study 3b was collected in March 2017 (55% female in Study 1; 50% female in all other studies).

As in Wilkins and Kaiser (2014), we recruited participants through Mechanical Turk. In the original studies, participants were compensated either \$0.25 (Studies 1 and 2) or \$1.00 (Study 3). We compensated participants \$0.60 (Studies 1, 2, and 3a) or \$0.65 (Study 3b).

Materials and Procedure

For each replication study, we used Wilkins and Kaiser's (2014) original materials. Unless otherwise noted, we followed their procedures to produce close replications of the original studies. Unless otherwise noted, all measures were scored on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). In each study, scale items were presented in random order. In Studies 1, 2, and 3a, gender, age, and ethnicity were measured during the initial prescreening, and education, income, political ideology, and political party were measured at the end of the study. In Study 3b, gender, age, ethnicity, education, income, and SES were measured during the

¹Study 2 approximated but was not at least 2.5 times the original sample size.

prescreening, and ideology and party were measured at the end. All materials are available on the OSF.

Study 1. Participants first completed Levin, Sidanius, Rabinowitz, and Federico's (1998) 12-item status legitimizing beliefs (SLBs) measure ($M = 3.65$, $SD = 1.15$, $\alpha = .91$). Next, they completed a 5-item measure assessing perceptions of racial progress ($M = 5.02$, $SD = 1.06$, $\alpha = .82$), followed by an 8-item measure assessing perceptions of anti-White bias ($M = 4.37$, $SD = 1.34$, $\alpha = 0.91$). Wilkins and Kaiser (2014) developed the latter two measures.

Study 2. Participants were told that they would be participating in two separate and unrelated studies. In the first "study," participants were randomly assigned to either the racial progress or control condition. The racial progress condition highlighted particular racial minority group members (e.g., Barack Obama, Condaleeza Rice) who held positions of power traditionally held by Whites, as well as increased social mobility for racial minorities in the United States. The control condition described an underdog swim team that managed to capture a national championship. Both articles therefore highlighted gains in status for lower-status groups. As a memory check, participants answered several questions about the article after reading it.

The second "study" was described as one of social perceptions. Participants completed the anti-White bias measure ($M = 4.40$, $SD = 1.31$, $\alpha = .90$) followed by a single-item manipulation check ("Blacks in the U.S are better off now than they ever have been;" $M = 5.27$, $SD = 1.31$), and then the SLB measure ($M = 3.56$, $SD = 1.03$, $\alpha = .88$).

Study 3a. Participants first completed the SLB² measure ($M = 3.53$, $SD = 1.11$, $\alpha = .91$). All participants then read the same shortened version of the Study 2 racial progress article

²As in Wilkins and Kaiser (2014), the SLB measure used in Studies 1 and 2 explicitly referred to ethnic minority groups, but the SLB measure used in Studies 3a and 3b did not.

Wilkins and Kaiser (2014) used in their Study 3, along with a single memory check item. Participants were then randomly assigned to either the self-affirmation or non-affirmation condition. In the self-affirmation condition, participants viewed a list of values (e.g. social life, relationships, etc.), selected the value most important to them, and wrote of a time when their behavior exemplified that value. In the non-affirmation condition, participants described what they had eaten the previous day. Participants then completed the anti-White bias measure ($M = 4.26$, $SD = 1.27$, $\alpha = .89$). Following all of the measures contained in Wilkins and Kaiser's (2014) original protocol, we included Heatherton and Polivy's (1991) 20-item self-esteem scale (1 = *not at all*; 5 = *extremely*) as a check on the self-affirmation manipulation ($M = 3.76$, $SD = .68$, $\alpha = .92$). This measure was not included in the original study.

Study 3b. Study 3b was identical to 3a with two exceptions.³ First, prior to the self-affirmation manipulation, participants were randomly assigned to the racial progress narrative originally included in Wilkins and Kaiser (2014) or an enhanced racial progress narrative meant to highlight racial progress despite Donald Trump's election. Second, we did not include the self-affirmation manipulation check. Measures of SLBs ($M = 3.39$, $SD = 1.19$, $\alpha = .93$) and anti-White bias ($M = 4.32$, $SD = 1.34$, $\alpha = .91$) were the same as in Study 3a.

Results

Correlations among Variables

In all four studies, SLBs and anti-White bias were positively correlated ($r_s > .50$, $p_s < .001$). In Study 1, racial progress was positively correlated with anti-White bias, $r(211) = .60$, $p < .001$, and with SLBs, $r(207) = .55$, $p < .001$. In Study 2, perceptions of racial progress (i.e., the

³After all original protocol materials, we included additional measures to examine extensions of Wilkins and Kaiser's (2014) original findings, but all effects were null. They are not reported here because they do not directly assess Wilkins and Kaiser's (2014) replicability. Data are available on the OSF.

manipulation check) were positively correlated with SLBs, $r(388) = .32, p < .001$, and anti-White bias, $r(389) = .43, p < .001$.

Manipulation Checks

In Study 2, belief that Blacks in the U.S. are better off now than in the past was higher in the racial progress condition ($M = 5.47, SD = 1.21$) than in the control condition ($M = 5.06, SD = 1.38$), $t(394) = 3.13, p = .002, d = .32$. This replicates findings from Wilkins and Kaiser (2014) Study 2, and suggests that conditions were sufficient for us to observe the predicted interaction effect.

In Study 3a, there were no differences in self-esteem between participants in the self-affirmation condition ($M = 3.69, SD = .72$) and control condition ($M = 3.82, SD = .64$), $t(242) = 1.43, p = .158, d = .19$. At least on this measure of self-esteem, the manipulation had no effect. It is, however, fairly uncommon to include a manipulation check in this particular self-affirmation experimental paradigm (Wilkins and Kaiser did not). Thus, participants in the self-affirmed condition may have been more self-affirmed than those in the non-affirmed condition, but we may have used an unreliable or invalid measure to capture its effect, or its effect may have worn off by the time self-esteem was measured.

Replications of Interaction Effects

In all four studies, we used Hayes' (2013) PROCESS macro to test the key interaction effect. Studies 1 and 2 tested SLB $\times$ racial progress interactions. Racial progress was measured in Study 1 and manipulated in Study 2 (0 = control; 1 = racial progress). Studies 3a and 3b tested SLBs $\times$ affirmation (0 = non-affirmation; 1 = affirmation) interactions. Continuous variables were mean-centered.

Study 1. Consistent with the original study, SLBs were positively associated with anti-White bias, $b = .50$, $SE = .08$, 95%CI [.35, .66], $t = 6.51$, $p < .001$. Inconsistent with the original study, racial progress was positively associated with anti-White bias, $b = .41$, $SE = .07$, 95%CI [.26, .56], $t = 5.52$, $p < .001$. There was a significant SLB $\times$ racial progress interaction, $b = -.10$, $SE = .04$, 95%CI [-.18, -.02], $t = -2.52$, $p = .013$; however, this effect was in the *opposite direction* of Wilkins and Kaiser's (2014). Greater perceived racial progress was associated with greater anti-White bias among people high in SLBs (+1 *SD*), $b = .29$, $SE = .09$, 95% CI [.12, .47], $t = 3.30$, $p = .001$, and this relationship was somewhat strong among people low in SLBs (-1 *SD*), $b = .53$, $SE = .09$, 95% CI [.36, .70], $t = 6.10$, $p < .001$. In contrast, Wilkins and Kaiser (2014) found a significant and positive relationship between racial progress and anti-White bias among people high in SLBs, and a negative and non-significant relationship among people low in SLBs.

Further, greater SLB endorsement was related to greater perceived anti-White bias among people high in perceived racial progress (+1 *SD*), $b = .40$, $SE = .09$, 95%CI [.21, .58], $t = 4.24$, $p < .001$, and this relationship was somewhat stronger among people low in perceived racial progress (-1 *SD*), $b = .61$, $SE = .08$, 95%CI [.45, .77], $t = 7.35$, $p < .001$. In contrast, Wilkins and Kaiser found that the relationship between SLBs and anti-White bias was greater among people high rather than low in perceived racial progress.

Study 2. Consistent with the original study, there was a positive relationship between SLBs and anti-White bias, $b = .71$, $SE = .06$, 95%CI [.59, .83], $t = 11.29$, $p < .001$, and no relationship between racial progress and anti-White bias, $b = -.18$, $SE = .11$, 95%CI [-.41, .04], $t = -1.60$, $p = .112$. Inconsistent with the original study, the SLB $\times$ racial progress interaction was not significant, $b = .10$, $SE = .13$, 95%CI [-.15, .34], $t = .77$, $p = .441$.

Study 3a. Consistent with the original study, there was a positive relationship between SLBs and anti-White bias, $b = .58$, $SE = .07$, 95% CI [.44, .72], $t = 8.04$, $p < .001$, and no relationship between affirmation and anti-White bias, $b = .02$, $SE = .14$, 95% CI [-.26, .30], $t = .15$, $p = .881$. Inconsistent with the original study, the SLB $\times$ affirmation interaction was not significant, $b = .00001$, $SE = .14$, 95% CI [-.28, .28], $t = -.0003$, $p = .9997$.

Study 3b. Recall that participants in Study 3b were randomly assigned to either the original narrative condition or the enhanced narrative condition. When examining only participants who read the original narrative, there was a positive relationship between SLBs and anti-White bias, $b = .58$, $SE = .07$, 95% CI [.43, .72], $t = 7.90$, $p < .001$, and no relationship between affirmation and anti-White bias, $b = -.09$, $SE = .15$, 95% CI [-.40, .21], $t = -.59$, $p = .554$, consistent with the original study. Inconsistent with the original study, however, the SLB $\times$ affirmation interaction was not significant, $b = .05$, $SE = .15$, 95% CI [-.24, .34], $t = .35$, $p = .727$. The interaction was also not significant when only examining participants who read the enhanced narrative, $b = -.14$, $SE = .15$, 95% CI [-.44, .16], $t = -.93$, $p = .351$, and if anything, was in the opposite direction.

Would the Replication Effects Have Been Detectable in the Original Studies?

We adapted Simonsohn's (2015) "small-telescopes" approach to evaluate the success of our four replications. This approach examines whether the effect sizes observed in our replications would have been detectable in the original studies. In other words, were our observed effects so small as to be undetectable using Wilkins and Kaiser's (2014) sample sizes? To do so, we estimated the power of each interaction effect (Studies 1 and 2: SLBs $\times$ racial progress; Studies 3a and 3b: SLBs $\times$ affirmation) given the original studies' sample sizes, and calculated the 90% CIs around this estimate, as well as the power associated with the upper

bound of that CI. If the estimated power of the point estimate is lower than 33%, and especially if estimated power at the upper bound of the 90% CI is less than 33%, then the original study would not have had adequate power to capture the effect observed in the replication. All of these analyses were performed using a simulation method to construct CIs and estimate statistical power empirically (Ruscio, 2017).

Table 1 reports the original and replication sample sizes, effect size estimates (β) for each interaction effect and their corresponding power estimates, and effect size estimates at the upper bound of the 90% CI and their corresponding power estimates. In no case did the power for the point estimate of the effect size exceed 33%, and the power estimate at the upper bound of the 90% CI exceeded 33% in only one case (43.2%; Study 2). These findings suggest very weak statistical power to detect the effect sizes we observed in our replications given the sample sizes in the original studies.

Exploratory Analyses

It is impossible to conclusively determine whether potential changes in Americans' perceptions of racial progress since the presidential campaign and election of Donald Trump help explain why Wilkins and Kaiser's (2014) studies largely failed to replicate across four replication attempts. We can, however, look for clues in our own data, and in comparisons between our data and the data from the original studies. For instance, in Study 2, the racial progress manipulation increased perceptions of racial progress relative to the control condition, suggesting that we were able to produce the conditions sufficient for us to observe the predicted interaction effect.

We could also ask two additional questions: 1) were our observed levels of perceived racial progress commensurate with those from the original study?; and 2) Did people generally

perceive more racial progress than otherwise (i.e., was perceived racial progress significantly higher than the scale midpoint)?

We measured perceptions of racial progress in Studies 1 and 2. Regarding Study 1, perceived racial progress was higher in the original study ($M = 5.41$, $SD = .87$) than in the replication, $t(284) = 2.80$, $p = .005$, $d = .40$. Regarding Study 2, in the control condition, there was no difference in perceived racial progress between the original study ($M = 4.96$, $SD = 1.24$) and the replication, $t(276) = -.56$, $p = .574$, $d = .08$. There was also no difference between the original study ($M = 5.64$, $SD = 1.12$) and the replication in the racial progress condition, $t(276) = 1.08$, $p = .280$, $d = .15$. Therefore, the evidence is mixed regarding whether racial progress levels are lower now than when the original data were collected. However, on average, our participants believe that racial progress has been made, as perceptions of racial progress were higher than the midpoint in Study 1, $t(214) = 14.08$, $p < .001$, $d = 1.92$, and Study 2, $t(393) = 19.27$, $p < .001$, $d = 1.24$.⁴

General Discussion

We conducted four preregistered, high-powered replications of Wilkins and Kaiser's (2014) studies. We replicated their observed main effect of SLBs on anti-White bias, and we replicated their observed effect of the racial progress manipulation on perceptions of racial progress (manipulation check, Study 2). However, inconsistent with Wilkins and Kaiser (2014), none of the key interaction effects were statistically significant in the predicted direction, and one was even significant in the opposite direction. We supplemented these traditional decisions about replicability (i.e., is $p < .05$ in the predicted direction?) with a "small telescopes" approach

⁴We preregistered an additional study to collect more evidence regarding current levels of perceived racial progress. Whereas levels were lower than in the original Study 1 and Study 2 (racial progress condition only), we hesitate to draw firm conclusions from this data because unlike the original and replication studies, we did not measure SLBs or anti-White bias prior to perceived racial progress. Considering racial hierarchies and racial bias could reasonably influence levels of perceived racial progress.

(Simonsohn, 2015). Statistical power never exceeded 33% for a point estimate of effect size, and the power estimate for the effect size at the upper bound of the 90% CI exceeded 33% (specifically, 43.2%) in only one of four cases (Study 2), meaning we could not rule out failure to replicate in this one case.

Why Did the Original Studies Fail to Replicate?

The two most obvious potential explanations for why the original effects failed to replicate in these four studies are that the original findings are false positives, or that intervening social changes have eliminated the original effect. It is likely impossible for us to indisputably adjudicate between these two possibilities, but we can review evidence for or against each explanation. As noted, the original studies were likely underpowered, and their three reported p -values hovered around $p = .05$ (i.e., p s = .05, .01, and .04). Multiple failures to replicate underpowered studies that carried relatively large p -values clearly make it possible that the original effects were false positives.

That said, perhaps people, especially those high in SLBs, no longer perceive racial progress in the wake of Trump's campaign and election, or at least less than they did during the Obama presidency, when Wilkins and Kaiser's (2014) data were collected. Our evidence is mixed on this point. On the one hand, perceptions of racial progress in our Study 1 were significantly lower than in the original study, which is consistent with an argument that changes in social context may have eliminated the original effect. On the other hand, the manipulation check in our Study 2 indicated that perceptions of racial progress were effectively primed, and levels of perceived racial progress in our Study 2 were equivalent to those reported in the original study. Further, average perceptions of racial progress were well above the scale midpoint in our Studies 1 and 2, and in Study 2, such perceptions were actually stronger among

people high in SLBs, creating especially ripe conditions to observe the original effect. Finally, our attempt to counter the effect of Trump's election on perceptions of racial progress through the enhanced racial progress condition in Study 3b did not produce the original effect.⁵

Conclusion

It is clear that Wilkins and Kaiser's (2014) original findings do not replicate. What is unclear is whether these failures to replicate are because the original findings were false positives, because the original findings were small and theoretically or practically insignificant, or because of changing sociopolitical realities. This is a particular challenge of reproducibility of social psychological phenomena. At least at the present time, one cannot expect the salience of racial progress to increase perceptions of anti-White bias among people who endorse ideologies that justify status hierarchies in the U.S., and perhaps this effect was limited solely to Obama's term. Researchers may consider revisiting this question if and when social contexts mirror those that held when the original data were collected. Further, it may be possible to test these effects in contexts outside of the U.S., for which racial progress has not experienced any real or perceived setbacks.

⁵In the study described in Footnote 4, perceived racial progress was not greater in the enhanced racial progress condition than in the original racial progress condition (or control condition).

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Table 1

Results of “small telescopes” analyses

	Original <i>N</i>	Replication <i>N</i>	point estimate (β)	Power, point estimate	β , upper 90% CI	Power of β , upper 90% CI
Study 1	71	207	-.10	20.80%	-.03	6.60%
Study 2	160	389	.10	12.60%	.30	43.20%
Study 3a	95	254	0.00	7.80%	.23	20.90%
Study 3b	95	242	.05	8.20%	.29	29.90%

Notes: The interaction effect in Study 1 was significant but in the opposite direction of the original effect. In Study 3b, small telescopes analyses are limited to participants who read the original racial progress narrative.