

## All Claims in the Original Article Hold as Stated: A Response to Arkes (2015)



Jennifer T. Kubota<sup>1,2</sup>, Jian Li<sup>3,4</sup>, Eyal Bar-David<sup>5</sup>, Mahzarin R. Banaji<sup>6</sup>, and Elizabeth A. Phelps<sup>5,7,8</sup>

<sup>1</sup>Department of Psychology, University of Chicago; <sup>2</sup>Center for the Study of Race, Politics, and Culture, University of Chicago; <sup>3</sup>Department of Psychology, Peking University; <sup>4</sup>IDG/McGovern Institute for Brain Research, Peking University; <sup>5</sup>Department of Psychology, New York University; <sup>6</sup>Department of Psychology, Harvard University; <sup>7</sup>Center for Neural Science, New York University; and <sup>8</sup>Nathan Kline Institute, New York University

Received 8/22/14; Revision accepted 11/3/14

In his response to our article on racial bias in the Ultimatum Game (Kubota, Li, Bar-David, Banaji, & Phelps, 2013), Arkes (a) says that White participants' earnings data provide a more positive outlook of how race affects economic decisions (compared with the data from the total sample), (b) provides a different speculation for the response-latency findings, (c) argues that excluding rational responders and using logistic fitting was inadvisable, and (d) emphasizes that the effects we observed were small (Arkes, 2015). We argue that Arkes has misinterpreted some results, misunderstood our research aim, and failed to acknowledge the importance of small effects.

### White Participants' Earnings

Although rejecting more offers from Black than from White proposers did not result in White participants earning different amounts from offers of Black versus White proposers, White participants showed significant or marginal effects of the proposer's race on all other measures (acceptance rate:  $p = .138$ ; slope:  $p = .033$ ; point of indifference:  $p = .049$ ; response latency:  $p < .01$ ; effect of IAT score in hierarchical modeling:  $p = .055$ ). The nonsignificant effects were of the same magnitude as, and directionally similar to, the effects in the overall sample. Arkes imposes a hypothesis of effects in small subsamples separated by race or ethnicity, but we never implied such a hypothesis.

Members of disadvantaged groups are known to hold negative implicit attitudes about their own group (Nosek, Banaji, & Greenwald, 2002). For this reason, one should not a priori exclude participants on the basis of race. It is, of course, theoretically interesting to analyze data separated by participants' racial group, as we did, finding that White participants showed the same pattern as the overall sample.

Arkes's advised strategy of reporting data from only 55% of the original sample is questionable. If effects are weaker for any smaller subsample than for the total sample, that is to be expected because of reduced power.<sup>1</sup> We reported the result that all groups of participants showed the same pattern, which added to our confidence in the generalizability and robustness of the findings.

The single and most important result remains: Race of the target influenced decisions whether to financially punish the target, even when such use of race came at a personal financial cost.

### Response Latency

Arkes offers a different prediction for the reaction time and logistic-model-fitting results, suggesting that participants should respond slower and have greater sensitivity to offer amounts if they are considering the Black proposer's offer. We derived our predictions from established theory and research on impression formation showing that individuals take more time when considering individuating information than when considering social-group information (e.g., Macrae & Bodenhausen, 2000). Our interpretation that participants responded slower to White proposers and were more flexible when considering their offer amounts is in line with extant research on individuated processing. We suggest that participants may have spent more time responding to what were perceived to be uncharacteristic, unfair offers from White proposers. There are, quite surely, many additional speculations about this result that future work will clarify. Arkes's

#### Corresponding Author:

Elizabeth A. Phelps, New York University, Department of Psychology, 6 Washington Place, New York, NY 10003  
E-mail: liz.phelps@nyu.edu

Psychological Science

1–3

© The Author(s) 2014

Reprints and permissions:

sagepub.com/journalsPermissions.nav

DOI: 10.1177/0956797614561045

pss.sagepub.com



interpretation is no better or worse than any and, in this moment, does not advance interpretation of these data.

### Exclusion of Rational Responders and Use of Logistic Model Fitting

In our original article, we were careful to emphasize the a priori exclusion criteria (see the Supplemental Material). The criteria were set on the basis of factors that we assume obscure important effects, as do other researchers, and our a priori interest was in participants who rejected offers so that we could determine whether the race of the proposer moderates rejection. Moreover, rational or anomalous responding results in outlier z-scored points of indifference and slopes, and including these data in the model fitting would be misleading (see Sokol-Hessner et al., 2009, and Stanley, Sokol-Hessner, Banaji, & Phelps, 2011, for examples of excluding participants on the basis of imprecise parameter estimation).

It is Arkes's personal view that logistic model fitting is unimportant to these analyses. We simply reiterate that logistic function fitting allowed us to attribute participants' behavior to two separate components: sensitivity toward offers (slope) and the indifference point between accepting and rejecting offers (point of indifference). Counting the money gained or lost confounds these components, obscuring the contributing psychological factor, particularly when these components oppose each other. Arkes's reanalysis of our data using money gained supports our conclusions that the race of the proposer affects decision making in the Ultimatum Game. Arkes found that "across all 49 subjects, the difference was 3.57¢ per trial, which was significant in a statistical sense,  $t(48) = 2.40$ ,  $p = .02$ , 95% confidence interval = [0.58¢, 6.56¢],  $\omega^2 = .029$ ," such that participants lost money by rejecting Black proposers' offers more than White proposers' offers. We thank him for affirming the result we obtained.

### Magnitude of the Effects

Arkes notes the small effects. Indeed, when effect sizes in predicting an outcome are small (e.g., the relationship of A's test scores to A's professional success), their smallness is taken as evidence of the weakness of predictive power. But when the purpose of scientific research concerns the behavior of large groups, even very small effect sizes have significance. Rosenthal (1990) supplied the example of aspirin's role in reducing heart attacks: A correlation of .035 translated to hundreds of lives saved for every 10,000 people with high risk of suffering a heart attack (see Greenwald, Banaji, & Nosek, 2014, for a more recent treatment of the importance of small effects).

It is imperative to proceed cautiously given the correlational nature of these data. Although we found a relationship

between implicit race attitudes and acceptance rates, this relationship was weak. Its interpretation, therefore, is of interest to the extent that it is consistent with a large and varied set of studies showing exactly the same relationship in stronger form (Agerström & Rooth, 2011; Castelli, Zogmaister, & Tomelleri, 2009; Green et al., 2007; Greenwald, Poehlman, Uhlmann, & Banaji, 2009; McConnell & Leibold, 2001; Penner et al., 2010; Pérez, 2010; Rooth, 2010; Sabin, Nosek, Greenwald, & Rivara, 2009; Ziegert & Hanges, 2005). In addition, a growing number of studies in real-world settings have shown that implicit attitudes and beliefs can predict real-world behaviors from job selection to voting (see Greenwald, 2012).

### Conclusion

The purpose of our investigation was to shed light on the role of the proposer's race in the decision whether to reject an unfair monetary offer. Arkes's personal interest in the White-only sample raises a legitimate question whether Whites are less biased than other groups, and this question is deserving of its own data gathering with substantive samples. As presented, his reanalysis supports our original conclusions. We thank Arkes for his interest in our work and remind readers that the claims in the original article hold as stated.

### Author Contributions

J. T. Kubota, J. Li, E. Bar-David, M. R. Banaji, and E. A. Phelps wrote the manuscript.

### Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

### Open Practices



All data have been made publicly available via Open Science Framework and can be accessed at <https://osf.io/ugdcz/>. The complete Open Practices Disclosure for this article can be found at <http://pss.sagepub.com/content/by/supplemental-data>. This article has received the badge for Open Data. More information about the Open Practices badges can be found at <https://osf.io/tvyxz/wiki/view/> and <http://pss.sagepub.com/content/25/1/3.full>.

### Note

1. The data from the original study are available for download on Open Science Framework (<https://osf.io/ugdcz/>).

### References

Agerström, J., & Rooth, D. O. (2011). The role of automatic obesity stereotypes in real hiring discrimination. *Journal of Applied Psychology, 96*, 790–805. doi:10.1037/a0021594

- Arkes, H. R. (2015). Commentary on Kubota, Li, Bar-David, Banaji, and Phelps (2013): A more optimistic view of the data. *Psychological Science*, *26*, XXX–XXX.
- Castelli, L., Zogmaister, C., & Tomelleri, S. (2009). The transmission of racial attitudes within the family. *Developmental Psychology*, *45*, 586–591. doi:10.1037/a0014619
- Green, A. R., Carney, D. R., Pallin, D. J., Ngo, L. H., Raymond, K. L., Iezzoni, L. I., & Banaji, M. R. (2007). Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients. *Journal of General Internal Medicine*, *22*, 1231–1238. doi:10.1007/s11606-007-0258-5
- Greenwald, A. G. (2012). *Studies showing uses of the IAT with "real-world" subject populations*. Retrieved from [http://faculty.washington.edu/agg/pdf/Real-world\\_samples.pdf](http://faculty.washington.edu/agg/pdf/Real-world_samples.pdf)
- Greenwald, A. G., Banaji, M. R., & Nosek, B. A. (2014). *Understanding and using the Implicit Association Test: VI. Interpreting meta-analyses of predictive validity*. Unpublished manuscript, University of Washington, Seattle, WA.
- Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology*, *97*, 17–41. doi:10.1037/a0015575
- Kubota, J. T., Li, J., Bar-David, E., Banaji, M. R., & Phelps, E. A. (2013). The price of racial bias: Intergroup negotiations in the Ultimatum Game. *Psychological Science*, *24*, 2498–2504. doi:10.1177/0956797613496435
- Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology*, *51*, 93–120. doi:10.1146/annurev.psych.51.1.93
- McConnell, A. R., & Leibold, J. M. (2001). Relations among the Implicit Association Test, discriminatory behavior, and explicit measures of racial attitudes. *Journal of Experimental Social Psychology*, *37*, 435–442. doi:10.1006/jesp.2000.1470
- Nosek, B. A., Banaji, M., & Greenwald, A. G. (2002). Harvesting implicit group attitudes and beliefs from a demonstration web site. *Group Dynamics: Theory, Research, and Practice*, *6*, 101–115. doi:10.1037/1089-2699.6.1.101
- Penner, L. A., Dovidio, J. F., West, T. V., Gaertner, S. L., Albrecht, T. L., Dailey, R. K., & Markova, T. (2010). Aversive racism and medical interactions with Black patients: A field study. *Journal of Experimental Social Psychology*, *46*, 436–440. doi:10.1016/j.jesp.2009.11.004
- Pérez, E. O. (2010). Explicit evidence on the import of implicit attitudes: The IAT and immigration policy judgments. *Political Behavior*, *32*, 517–545. doi:10.1007/s11109-010-9115-z
- Rooth, D. O. (2010). Automatic associations and discrimination in hiring: Real world evidence. *Labour Economics*, *17*, 523–534. doi:10.1016/j.labeco.2009.04.005
- Rosenthal, R. (1990). How are we doing in soft psychology? *American Psychologist*, *45*, 775–777. doi:10.1037/0003-066X.45.6.775
- Sabin, J. A., Nosek, B. A., Greenwald, A. G., & Rivara, F. P. (2009). Physicians' implicit and explicit attitudes about race by MD race, ethnicity, and gender. *Journal of Health Care for the Poor and Underserved*, *20*(3), 896–913. doi:10.1353/hpu.0.0185
- Sokol-Hessner, P., Hsu, M., Curley, N. G., Delgado, M. R., Camerer, C. F., & Phelps, E. A. (2009). Thinking like a trader selectively reduces individuals' loss aversion. *Proceedings of the National Academy of Sciences, USA*, *106*, 5035–5040. doi:10.1073/pnas.0806761106
- Stanley, D. A., Sokol-Hessner, P., Banaji, M. R., & Phelps, E. A. (2011). Implicit race attitudes predict trustworthiness judgments and economic trust decisions. *Proceedings of the National Academy of Sciences, USA*, *108*, 7710–7715. doi:10.1073/pnas.1014345108
- Ziegert, J. C., & Hanges, P. J. (2005). Employment discrimination: The role of implicit attitudes, motivation, and a climate for racial bias. *Journal of Applied Psychology*, *90*, 553–562. doi:10.1037/0021-9010.90.3.553