Christine Horne, Justine Tinkler, and Wojtek Przepiorka

Behavioral Regularities and Norm Stickiness: The Cases of Transracial Adoption and Online Privacy | Online Supplement

Methods and Results

We test our hypotheses using two online vignette experiments. Study 1 tests the hypotheses regarding race; Study 2 focuses on privacy.

Study 1: Interracial Relationships

Study 1 describes prospective adoption parents and the level of segregation in their community.

Design

Our study asks participants to evaluate prospective (white) adoptive parents as a match for a (black) child available for adoption. We randomly assigned participants to conditions that varied the descriptive norms in the community in which the prospective family lived. The study had two between-subjects conditions – one in which the community was described as racially integrated and one in which the community was racially segregated.[i] There were about 100 participants in each condition for a total N = 200.

Participants and Procedures

Participants were recruited through Amazon's Mechanical Turk (AMT). AMT is a crowdsourcing website where requesters from businesses and universities can post tasks for workers to perform online. It is a useful tool for recruiting research participants (Buhrmester, Kwang, and Gosling et al. 2011; Paolacci, Chandler and Ipeirotis 2010). AMT workers are a subset of Amazon's user base and are similar to the general internet population (Ipeirotis 2010).

Research shows that data quality and results from vignette studies are comparable across AMT and population-based samples (Weinberg, Freese, and McElhatta, 2014). Our AMT sample included 116 women (58%) and 84 men (42%). Mean age was 34.2 (sd = 9.96) and mean years of education was 15.1 (sd = 1.70). There were 160 white participants (80%), 12 black (6%), 17 Asian (8.5%), 16 Latino, and 14 other (including more than one race) (7%).

Participants read the instructions and study materials. They were told that they would be reading a summary of a home study report that provided information about a prospective adoptive family as well as a short form providing information about the child available for adoption. Further, they would be asked to rate the prospective parents. We described the race of the child in a form that included the names of the birth parents, their race (black), age, and occupation. The summary also provided a description of the potential adoptive parents, including their race (white or black) – again identified both explicitly and by using names. We identified popular names for black and white individuals in the US using online lists of popular names. We then pretested these names and chose the names most consistently assessed as identifying a black or white individual. The names of the white adoptive parents described in the home study summary were Emily and Brett Johnson. The names of the white birth parents were Kate Williams and Connor Brown; the black birth parents were Aliyah Williams and DeShawn Brown. We expected that, given color-blind mandates, participants might be reluctant to express negative evaluations of transracial matches. To address this possibility, we included both positive and negative information about the prospective parents in the home study so that participants could "blame" a non-racial characteristic for any negative evaluation.

Experimental Manipulations

We manipulated *descriptive norms* by describing the prospective adoptive parents as living in a Canadian city that was highly segregated (people of different races lived in different neighborhoods, attended different churches, shopped in different stores, and went to different schools; multiracial families were rare) or integrated (people of different races lived in the same neighborhoods, attended the same churches, shopped in the same stores, and went to the same schools; multiracial families were common). We set the location in Canada because we expected that participants would have a strong sense of the descriptive norms in the US, and that an attempt to manipulate US descriptive norms might not be successful.

Dependent Measures

We measured *normative expectations* and participants' *evaluations* of the prospective match. We also included two additional indicators suggested by the norms and race literatures. All response scales were 1-10. Measures were recoded as indicated below.

To measure *normative expectations* about support for transracial adoption we asked participants whether white people in the city approve or disapprove of transracial adoption (white parents adopting black children) as well as whether black people in the city approve of transracial adoption. We averaged these two indicators, which were highly correlated (standardized Cronbach's alpha = .82). Normative expectations were coded so that higher numbers indicate more approval.

We measured *evaluations* of the prospective parents by asking participants how good or bad a match the prospective parents are for this child (1=very bad; 10=very good). Note that, because we are using a vignette experiment, we do not measure actual behavior. Still, we believe that responses indicate something about participants' behavioral intentions.

Additional Measures

To assess the prediction from the norms literature, we measured expectations that a transracial family would experience problems (i.e., not be successful). We asked how likely it is that a black child with white parents would face challenges while growing up, have challenges with extended family, and have challenges that other families do not have. These three measures were highly correlated (standardized Cronbach's alpha = .89). We averaged them to create a single "challenges" measure.

We also assessed the role of *expectations regarding interracial conflict*. We asked how similar or different participants thought blacks and whites in the city were, how much conflict there was between blacks and whites in the city, how well blacks and whites got along, and how well blacks and whites in the city understood each other. These four items were highly correlated (standardized Cronbach's alpha = .85). We averaged them to create a single conflict measure. Finally, we collected the basic sociodemographic information described above.

Results

We hypothesized that when potential adoptive parents live in a community that is racially segregated rather than integrated, participants will expect more social disapproval of transracial adoption. In turn, they will also evaluate transracial matches more negatively than when the family lives in an integrated community. To test this hypothesis we follow Baron and Kenny's (1986) recommendations for analyses of mediation effects (Table 1). We conduct OLS regressions that examine: 1) the effect of descriptive norms on normative expectations (Model 1), 2) the effect of descriptive norms on evaluations (Model 2), and 3) the association between normative expectations and evaluations as well as whether the effect of descriptive norms on evaluations is weakened by including normative expectations in the model (Model 3). Because

our exploratory analyses found no difference in responses of white and non-white participants, we present the results for the entire sample.

Consistent with Hypothesis 1a, descriptive norms of segregation affect normative expectations. Participants expected significantly less approval of transracial adoption in the segregated than integrated community (Table 1, Model 1). Descriptive norms also affect participants' evaluations of the adoptive parents. Participants evaluated prospective transracial matches significantly less positively when the prospective parents lived in a racially segregated rather than integrated community (Model 2). Finally, when normative expectations are included in the model that explains evaluations of prospective transracial families, the coefficient for normative expectations is statistically significant and the coefficient for descriptive norms becomes insignificant (Model 3). These results indicate that normative expectations entirely mediate the effect of segregated descriptive norms on evaluations. In other words, people evaluate prospective transracial families more negatively when the parents reside in segregated communities because they expect disapproval of mixed race families. The findings are consistent with our hypothesis that descriptive norms affect normative expectations and, in turn, evaluations of potential transracial matches.

Table 1: Mediation Analyses for Normative Expectations and Transracial Adoption

	Model 1 Normative expectations	Model 2 Evaluation of parents	Model 3 Evaluation of parents
Segregated community (=1)	-2.067***	-1.538***	-0.320
	(0.296)	(0.294)	(0.252)
Normative expectations			0.589***
			(0.062)
Const.	6.894***	8.162***	4.102***
	(0.194)	(0.152)	(0.491)
N	200	200	200
adj. R^2	0.19	0.12	0.42

Notes: The table lists coefficient estimates from OLS regression models and robust standard errors in parentheses (*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, for two-sided tests). The three models test the hypothesis that the effect of descriptive norms (i.e. degree of segregation in community) on the evaluation of prospective parents is mediated by normative expectations (i.e. expected approval of transracial adoption).

We conducted additional analyses incorporating expectations of family challenges and racial conflicts (Hypothesis 1b). Here again, we examine whether descriptive norms affect expectations, and the associations between expectations and evaluations (Table 2). The results show that people expect more problems and more racial conflict in the segregated than integrated community (Models 1 and 2). When expectations about problems and racial conflict are included in the analyses explaining evaluations of prospective transracial families, both types of expectations have statistically significant associations with evaluations (Models 3 and 4). Further, the effect of descriptive norms on evaluations is weakened, suggesting that expectations about problems and racial conflict partially mediate the effect of descriptive norms on evaluations. Model 5 includes all three mediating variables in a single model. The coefficient for the association between normative expectations and evaluations remains statistically significant when the other expectations are included. Our results show that normative expectations, but not problem or racial conflict expectations, fully mediate the effect of descriptive norms on evaluations.

Table 2: Mediation Analyses for Problem Expectations, Race Conflict Expectations and Transracial Adoption

	Model 1 Expected problems	Model 2 Expected conflict	Model 3 Evaluation of parents	Model 4 Evaluation of parents	Model 5 Evaluation of parents
Segregated community (=1)	1.811***	1.816***	-0.667*	-0.672*	-0.119
	(0.301)	(0.254)	(0.268)	(0.318)	(0.235)
Normative expectations					0.442***
					(0.080)
Expect. family problems			-0.481***		-0.215**
			(0.063)		(0.069)

Expect. racial conflict				-0.476***	-0.064
				(0.085)	(0.097)
Const.	5.067***	3.899***	10.598***	10.019***	6.451***
	(0.205)	(0.174)	(0.308)	(0.318)	(0.919)
N	200	200	200	200	200
adj. R^2	0.15	0.20	0.33	0.26	0.45

Notes: The table lists coefficient estimates from OLS regression models and robust standard errors in parentheses (*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, for two-sided tests). Models 1 and 2 test the effect of descriptive norms on problem and racial conflict expectations. Models 3 and 4 test whether those expectations are associated with participant evaluations, and whether including them in the model weakens the effect of descriptive norms. Model 5 includes all expectations in a single model.

Summary

These analyses support our hypothesis that descriptive norms of segregation lead individuals to expect that others do not approve of transracial adoption, and in turn, to more negative evaluations of potential transracial matches. The findings are consistent with our argument that descriptive norms affect normative expectations, and in turn, lead to decisions consistent with the status quo.

Study 2: Privacy

Study 2 describes a technology (a new household energy app) that can potentially be used to violate users' privacy.[ii] We could have described any of a number of technologies that have privacy implications (Foschi 1997). We focused on an energy-related app because of the relevance of such technologies for substantively important problems such as climate change (Horne et al. 2015; Frickel et al. 2017).

Design

Study 2 had a between-subjects design with two conditions varying the popularity of the app (popular vs unpopular). There were about 50 participants in each condition for a total $N = 102$.

Participants and Procedures

Participants were recruited from Prolific Academic (PA), a site similar to Amazon's Mechanical Turk (AMT), but designed specifically for academic research (Peer et al. 2017). Participants go to the PA site where they read descriptions of studies for which they are eligible. They click on the study link and are taken to the study. When they have finished the study, they are automatically directed back to the PA site. PA then facilitates payment. Our sample was restricted to US participants age 18 and older. Sixty-three (62%) of participants were male; 37 (36%) were female (two participants did not answer this question). Mean age was 30.1 (sd = 10.5), and mean years of education was 14.9 (s.d = 1.94).

In this study, participants read the description of an app designed to help them save money and help the environment. They then answered questions about the app.

Experimental Manipulations

We used the following vignette to manipulate the popularity of the app:

> A new app helps people reduce their household energy consumption and thus save money and help the environment.
>
> In addition to helping you save money and help the environment, the app also collects information about you. This information can potentially be analyzed to learn a lot about you, your household, and friends, and can potentially be sold to other companies.
>
> The app is very [*unpopular/popular*]. [*Only a few/Many*] people are using it.

Dependent Measures

We measured *normative expectations* by asking participants how much they thought others approved of the app provider analyzing and selling user information (strongly disapprove = 1; strongly approve = 10). We also measured participants' *interest in using the app* (1=not at all

interested; 10=very interested). And we obtained the basic sociodemographic measures described above.

Results

As we did in Study 1, we conducted a mediation analysis (Table 3) (Baron and Kenny 1986). We look first at the effects of descriptive norms (app popularity) on participants' normative expectations. Consistent with Hypothesis 2, we find when many people used the app, people expected others to approve of potential privacy violations significantly more than when few other people used the app (Table 3, Model 1). We then examine the effects of descriptive norms on participants' interest in using the app. The results show that when many people used the app, participants were significantly more interested in using the app themselves than when few people used the app (Model 2). Finally we look at whether normative expectations are associated with willingness to use the app, and whether the effect of descriptive norms on willingness is weakened by including normative expectations in the model. We find that normative expectations are associated with willingness to use the app. And when normative expectations are included in the model, the coefficient for app popularity becomes statistically insignificant (Model 3). In other words, normative expectations entirely mediate the effect of descriptive norms on intended behavior. These results are consistent with Hypothesis 2.

Table 3: Mediation Analyses for Normative Expectations and Technology

	Model 1 Normative expectations	Model 2 Interest in using app	Model 3 Interest in using app
App is popular (=1)	1.638***	1.569**	0.603
	(0.371)	(0.481)	(0.511)
Normative expectations			0.590***
			(0.116)
Const.	2.400***	2.700***	1.284***

	(0.265)	(0.356)	(0.358)
N	102	102	102
adj. R^2	0.16	0.09	0.27

Notes: The table lists coefficient estimates from OLS regression models and robust standard errors in parentheses (*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, for two-sided tests). The three models test the hypothesis that the effect of descriptive norms (i.e. popularity of the app) on the respondent's interest in using the app is mediated by normative expectations (i.e. expected approval of privacy violating behavior by the app provider).

Summary

The results of Study 2 support our expectation that descriptive norms (popularity of a potentially privacy-violating app) affect normative expectations regarding privacy, and in turn, willingness to use a technology. More generally, they are consistent with our argument that descriptive norms affect normative expectations, which encourage behaviors consistent with those descriptive norms.

Limitations and Future Research

We tested our theoretical predictions using vignette experiments that focused on two empirical contexts. Vignette experiments are very useful for getting at normative expectations, and thus are appropriate for testing our theory regarding the effects of descriptive norms on expectations. But, they do not involve actual behavior. Although we asked participants to rate prospective adoptive parents and to express how interested they were in using a technology, these indicators do not measure actions. Existing research suggests that normative expectations have implications for behavior (Cialdini and Trost 1998; Willer, Kuwabara, and Macy 2009). Future research should assess the implications of descriptive norms not only for normative expectations but also for individual actions.

In addition, the experiments only manipulated the factor identified by the theory – descriptive norms. The results therefore do not say anything about the relative importance of

descriptive norms relative to other kinds of social cues that may also suggest support for particular behaviors. People may, for example, draw inferences from the physical environment (e.g., physical disrepair, Kelling and Coles 1998), from public institutions such as the legal system (Tanckard and Paluck 2017), statements by visible and respected actors, or other factors. Our results show that descriptive norms affect normative expectations. But we do not assess the relative impacts of the range of factors people may use to infer norms. It may be possible to change norms through means not addressed here. Future research should explore factors that might offset the effects of persistent patterns of undesirable behaviors.

[i] The results reported here are part of a larger study that also included conditions in which the prospective adoptive parents were the same race as the child. Because those monoracial conditions are not relevant for our argument regarding the effects of descriptive norms on normative expectations about transracial adoption, we do not include them here.

[ii] The study reported here is one of a series of experiments we conducted looking at factors affecting privacy expectations and attitudes.