The Protestant Work Ethic: A Lay Theory with Dual Intergroup Implications

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The authors propose that, in the US, the Protestant work ethic (PWE) relates both to social tolerance and intolerance. PWE is proposed to have a surface meaning that relates to social tolerance, and also an associated meaning that relates to intolerance, which is acquired in part through social and cultural experience (e.g. PWE being used as a justifier of inequality). In correlational and experimental studies, PWE was related to greater egalitarianism and desired social closeness to African Americans among younger participants (9- to 12- and 14- to 16-year-olds) relative to older participants (college students). Subsequent experiments directly manipulated college students' interpretations of PWE, showing that those experimentally led to focus on others' use of PWE in support of their arguments (associated meaning condition) endorsed egalitarianism to a lesser extent (Study 3) and donated less money to a homeless shelter (Study 4) than did those simply focusing on the definition of PWE (definition condition). In contrast to these findings, the authors showed that social dominance orientation has a unitary relation to social intolerance across the three age groups studied (Study 1). The implications of these findings and future work on the duality of lay theories are discussed.

KEYWORDS   duality, egalitarianism, implicit theories, justification, lay theories, prejudice, Protestant work ethic, racial attitudes, social dominance orientation

IN THE UNITED STATES, a pervasive lay theory is the Protestant work ethic (PWE), which is often captured by sayings such as 'anyone can pull themselves up by their bootstraps' or 'the early bird gets the worm'. Essentially, this is the lay theory that 'people who work hard succeed' (e.g. Crandall, 1994; Katz & Hass, 1988; Quinn & Crocker, 1999; Somerman, 1993). The PWE has long been discussed as an ingredient in contemporary US racism toward African Americans at the hands of European Americans; African Americans are seen as not

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conforming to the work ethic (not working hard enough) and thus deserving disadvantage (e.g. Kinder & Sears, 1981; McConahay & Hough, 1976). More recently, PWE has been cast more broadly as a justifier of one's own prejudice and society's differential treatment of a wide variety of less successful or stigmatized persons including homeless persons, over-weight persons, and women (e.g. Crandall, 1994, 2000; Levy, Freitas, & Salovey, 2002; Pratto, Sidanius, Stallworth, & Malle, 1994; Quinn & Crocker, 1999). Consistent with this theorizing, in the US, PWE has been shown to relate to stronger negative attitudes toward African Americans (e.g. Katz & Hass, 1988; also see Biernat, Vescio, & Theno, 1996), dislike of overweight persons (e.g. Crandall, 1994), negative attitudes toward homeless persons (e.g. Levy et al., 2002; Somerman, 1993), negative affect toward people facing AIDS (e.g. Levy et al., 2002), and opposition to a com-munity facility for homeless families (e.g. Somerman, 1993).

Notwithstanding the commonly observed relations between endorsing PWE and social intolerance, we suggest that PWE may also relate to greater social tolerance among some people (or in some contexts). In this paper, we aim to demonstrate that the PWE is not simply about intolerance but rather has dual inter-group implications—one supporting social intolerance (as previous work has shown) and one supporting tolerance. We further propose that PWE has a surface meaning that supports social tolerance through the proposition that anyone who works hard can succeed, implying that differences in abilities or talents are minimal and inconsequential. We also propose that PWE's intolerance meaning develops in part with experience in particular (e.g. US) cultures.

The proposition that the same construct can be construed differently across people or contexts has precedence in other lines of social psychological research (e.g. Bruner, 1957; Ross & Nisbett, 1991). However, research on lay theories has tended to focus on the unitary intergroup meaning of lay theories, document-ing which lay theories support intergroup bias

and which lay theories instead support inter-group tolerance (e.g. Altemeyer, 1998; Biernat, et al., 1996; Crandall, 1994; Haslam, Roth-schild, & Ernst, 2002; Hong, Chiu, Young, & Tong, 1999; Levy, Stroessner, & Dweck, 1998; Plaks, Stroessner, Dweck, & Sherman, 2000; Pratto et al., 1994; Whitley, 1999; Yzerbyt, Leyens, & Corneille, 1998; see Hong, Levy, & Chiu, 2001; Wegener & Petty, 1998). For example, greater endorsement of the lay view that group hierarchies are natural and necess-ary ('social dominance orientation'; Pratto et al., 1994) relates to greater negative attitudes toward policies that promote equality across gender, social class, ethnic or racial groups, and sexual orientation; and toward the groups that would benefit from such policies in numerous countries including Canada, China, Israel, Lebanon, Mexico, Taiwan, and the US (e.g. Altemeyer, 1998; Whitley, 1999; also see Sidanius & Pratto, 1999).

Dual intergroup meanings

Despite substantial evidence that particular lay theories either facilitate or impede tolerance, we suggest that some lay theories may be open to more than one intergroup implication. One reason a lay theory could have two, even opposite, intergroup implications is that a lay theory can have a surface meaning and an associated meaning, which is the outgrowth of cultural or personal experience. In other words, a lay theory may be initially learned in terms of its surface meaning; then, with experi-ence, people may learn that the lay theory holds additional meanings as part of the lay theory's associative network. We propose that PWE, on the surface, suggests the socially tolerant stance that people from all social categories are basically equal and can all succeed. Promising successful outcomes for diligent effort, PWE is indeed used to motivate individuals, as in the classic US children's book, *The Little Engine that Could*. This is the story of a little engine who, through diligent effort, was able to reach a valued outcome that appeared insurmountable (hauling cars filled with gifts over a tall mountain). If children accept the

PWE message at face value, as taught in such books and by teachers encouraging *all* students to work hard, they will likely believe that *anyone* who works hard can succeed. In this way, effort can be something that equalizes people of different social categories. Everyone can put forth effort and succeed, so everyone is basically equal.

Other associations, however, may become linked to a lay theory through experiences. With experience in US culture, people may see that PWE can be used to support the conclusion that lack of success reflects dispositional factors, such as laziness, which can in turn be used to justify inequalities and differential treatment of social groups (e.g. Crandall, 1994, 2000; Katz & Hass, 1988; Somerman, 1993). Thus, with experience in the US, people eventually should also associate PWE with arguments justifying inequality such as the argument that members of disadvantaged groups are to blame for their predicament, which could be alleviated through their own effort.

Our reasoning about the development of potential associated meanings of PWE suggests that, through experience, people accumulate and refine their understandings of PWE; thus, adults are likely to be more familiar with the intolerance meaning of PWE, but children (people less familiar with the culture or environment) likely see PWE through its surface ('social equalizer') meaning only. Accordingly, in our studies, we compare the responses of children to adults to help reveal the social equalizer meaning of PWE and our hypothesized associated meanings mechanism (experience with PWE as a justifier of inequality).

In summary, we suggest that a lay theory may accrue new, even opposite, associated meanings, thereby having both a tolerance and an intolerance meaning. PWE seemed to be a prime candidate for dual intergroup meanings because it is somewhat vaguely and broadly defined, allowing for heterogeneity in its implications. Additionally, people in the US are highly invested in this culturally pervasive lay theory. Because it is difficult to give up, people

may instead attempt to accommodate PWE to serve both tolerant and intolerant needs across situations and over time.

By contrast, social dominance orientation (SDO), the view that some groups are superior to others (e.g. Pratto et al., 1994), although pervasive in some settings, is not easily framed to fit social tolerance. SDO, in its direct suggestion that some groups are inferior to others and in its preference for social hierarchies, specifically endorses intolerance of lower status groups (e.g. Pratto et al., 1994; Sidanius & Pratto, 1999). Thus, SDO is unlikely to also have an egalitarian implication, and we will examine the proposed unitary intergroup implication of SDO in one developmental study.

Moreover, lay theories such as PWE that can serve as justifiers of intolerance (e.g. Crandall, 2000) in a seemingly egalitarian society are good candidates for having a surface meaning promoting social tolerance and an associated meaning promoting intolerance. That is, to justify socially unacceptable and often personally unacceptable levels of prejudice in a society that espouses egalitarian values, a lay theory must appear to be somewhat egalitarian so that any social intolerance appears to be a 'fair' response.

Before describing our investigations into the dual intergroup implications of PWE, we provide some further background on PWE.

Prior intergroup research on the PWE

As noted from the outset, in the US, much research and theorizing supports the notion that PWE is a justifier of social inequality among adults. Crandall (2000) aptly noted that 'people, in the process of stigmatizing others, believe that the rejection, avoidance, and inferior treatment they dole out to stigmatized others is fair, appropriate, judicious—in other words, *justified*'; thus, as a result of justifiers such as PWE, 'one can continue to treat people as second-class citizens, apply a lower moral standard, and practice exclusion with a clear conscience' (p. 126).

Although a large body of work with US adults is consistent with the notion that PWE is

a justifier of social inequality, there is some evidence to the contrary. That is, there have been inconsistencies in PWE's link to social intolerance across samples, studies, or relevant measurement tools (and there may be more inconsistencies that have not been published). For instance, in a large-scale study of nine European American college samples, Katz and Hass (1988; Study 1) found that, in one of the nine samples, PWE was not significantly positively correlated with 'Anti-Black attitudes' (seeing African Americans as 'deviant'; e.g. 'On the whole, Black people do not stress education and training') and in four of the nine samples, PWE was not significantly negatively related to 'Pro-Black attitudes' (seeing African Americans as 'disadvantaged'; e.g. 'Too many Blacks still lose out on jobs and promotions because of their skin color). Subsequently, Monteith and Walters (1998) found that PWE (using Katz & Hass's measure) was unrelated to racism toward African Americans as assessed by the Modern Racism Scale (e.g. McConahay & Hough, 1976).

Furthermore, Katz and Hass (1988) found that PWE was unrelated to, rather than negatively related to, a general measure of social tolerance (humanitarianism/egalitarianism; e.g. 'There should be equality for everyone—because we are all human beings') in eight of the nine samples, a finding that has been subsequently replicated (e.g. Biernat et al., 1996; Monteith & Walters, 1998).

In reflecting on some of the unexpected mixed findings in their data set, such as those concerning the relation between PWE and attitudes toward African Americans as noted above, Katz and Hass (1988, p. 902) wrote: 'we find these exceptions puzzling.' We suggest that those exceptions and other ones may not be 'noise' in the data but rather suggest that PWE is not solely used to support intolerance.

Overview of the present investigation

Our main aim is to show that PWE has dual intergroup implications, namely that PWE suggests egalitarianism and social tolerance to some people (or in some contexts) and, in contrast, prejudice and social intolerance to others (or in other contexts). Our secondary aim is to provide preliminary evidence for an associated meanings mechanism—that the intolerance implication is linked to PWE through social experience.

These aims were addressed in four studies conducted in the United States. In Studies 1 and 2, we examined how age (experience) may alter associations between PWE and social tolerance among three age groups (people approximately 10, 15, and 20 years old). We expected to show that PWE would be related to greater levels of social tolerance among children, who presumably think of PWE in a socially tolerant way, relative to adults who, according to past work, tend to think of PWE in a socially intolerant way (e.g. Biernat et al., 1996; Katz & Hass, 1988; Kinder & Sears, 1981; Levy et al., 2002; McConahay & Hough, 1976; Monteith & Walters, 1998; Somerman, 1993). We also examined SDO (e.g. Pratto et al., 1994) as a comparison to PWE in Study 1, expecting SDO to hold a single (intolerant) meaning across the different age groups.

Thus, in Studies 1 and 2, we intended to provide the first evidence to our knowledge that PWE is related to social tolerance, in this case, among children. At the same time, we aimed to replicate prior findings among adults showing that, by contrast, PWE tends to support intolerance among this age group. Importantly, however, our theorizing about adults directly suggests that focusing on a particular aspect of PWE should give rise to increased intolerance. In Studies 3 and 4, therefore, we attempted to directly manipulate adults' interpretations of PWE and to demonstrate a situational trigger for their use of PWE in an intolerant manner.

Study 1

In Study 1, we examined whether shifts in age (experience) among US students (approximately 10, 15, and 20 years old) relate to different patterns of relations between PWE and social tolerance. Consistent with past work, we assessed the relation between a standard measure of PWE (Katz & Hass, 1988) and

beliefs about general social tolerance (Katz and Hass's (1988) egalitarianism/humanitarianism measure) as well as a measure of intended behavior toward a disadvantaged group in US society—African Americans (e.g. Katz & Hass, 1988; Kinder & Sears, 1981; McConahay & Hough, 1976). As a first step, our sample was limited to European Americans, given the large history of theorizing and research on the relation between PWE and social intolerance (particularly toward African Americans) among European Americans (e.g. Biernat et al., 1996; Katz & Hass, 1988; Kinder & Sears, 1981; McConahay & Hough, 1976; Monteith & Walters, 1998).

As noted, we suggest that PWE's surface meaning is the assertion that anyone who works hard can succeed, which should suggest the equivalence of people of different social categories. Thus, in the youngest group (approximately 10 years old), PWE should relate positively to egalitarianism and negatively toward desired social distance from African Americans. By approximately 15 years of age, the relations between PWE and markers of social tolerance should weaken. Continuing this hypothesized developmental trend, in college, the relation between PWE and greater social tolerance should shift further away from a strong positive relation. Given that we expect adults to be familiar with both the egalitarian and justifier of inequality meanings of PWE, taken together with previous findings, we would expect to find that PWE is either (1) unrelated to measures of tolerance (according to our theorizing, this would suggest that across participants, both meanings were being used about equally often) or (2) significantly related to greater intolerance (suggesting that, across participants, the intolerance meaning is more prevalent). As reviewed earlier, there is the most precedence in past research with European American college students for (2) and some precedence for (1). Among college students, then, we expected to see that the relation between PWE and tolerance would be nonsignificant or negative. In the general discussion, we address the issue of whether adults, once familiar with the intolerance meaning of

PWE, use PWE in a purely egalitarian way thereafter.

As a contrast to our theorizing about PWE, we also assessed a lay view that did not appear to be open to additional meanings, but rather appeared to have an unequivocal, stable relation to prejudice. As reviewed earlier, SDO (Sidanius & Pratto, 1999) intrinsically prescribes the non-egalitarian view that some groups are inherently superior to others; further, a consistent demonstration of research findings across cultures supports this relation (e.g. Pratto et al., 1994; Sidanius & Pratto, 1999). We posit no associated meaning of SDO contradicting this direct intolerance meaning. Accordingly, across the different age groups, SDO should be negatively correlated with egalitarianism and positively correlated with desired social distance from African Americans.

Also, to help isolate the relation between PWE and social tolerance, we controlled statistically for other variables that could explain our hypothesized findings such as participants' self-esteem and their concerns with reporting socially pleasing responses.

Method

Participants Participants were recruited from nearby schools in New York. The college student sample included 23 males and 82 females, aged 17 to 25 years ($M = 20.64$), drawn from psychology courses requiring research participation. The middle group, aged 14 to 16 years ($M = 15.01$), included 37 males and 97 females from 9th and 10th grade classrooms, and the youngest group, aged 9 to 12 years ($M = 10.48$), included 47 males and 60 females from 5th and 6th grade classrooms. Participants included those students who agreed to participate and, in the case of the non-college participants, whose parents or legal guardians provided written consent. Because this study was intended to focus on European Americans, the samples were limited to European Americans. All samples came from, on average, middle income environments.

Measures Table 1 presents means, standard deviations, and internal reliabilities of the

Table 1. Means, standard deviations, and internal reliability of measures according to age group, Study 1

Measure	No. of items	Mean (standard deviation)			Internal reliability		
		Age group 1	Age group 2	Age group 3	Age group 1	Age group 2	Age group 3
PWE	5	4.58 (0.87)	4.25 (0.65)	3.78 (0.77)	.79	.76	.81
SDO	7	2.64 (0.67)	2.62 (0.66)	2.78 (0.76)	.64	.79	.81
Egalitarianism	6	4.91 (0.71)	4.32 (0.67)	4.09 (0.73)	.76	.82	.80
Interracial distance	2	0.79 (0.87)	1.14 (0.87)	1.71 (0.84)	.91	.83	.70
Social concerns	5	2.90 (0.66)	2.96 (0.67)	3.05 (0.61)	.57	.71	.73
Self-esteem	2	5.47 (1.07)	4.95 (1.09)	4.00 (1.10)	.84	.82	.73

Notes: PWE = Protestant work ethic; SDO = social dominance orientation; interracial distance = desired social distance from African Americans: Age group 1 = 10- to 12-year-old children: age group 2 = 14- to 16-year-old adolescents: age group 3 = approximately 20-year-old college students.

measures. As can been seen, for each of the age groups, there was good internal reliability.

Lay theories and egalitarianism We slightly modified existing scales of PWE (Katz & Hass, 1988), SDO (Pratto et al., 1994), and egalitarianism (Katz & Hass, 1988) from the adult literature to create single measures of each that would be appropriate for use with all three age groups. In a pilot study with non-study participants (35 girls, 39 boys) of the same age as the youngest participants in our study (9- to 11-year-old children, *M* = 10.05), we examined the reliability of these modified scales. Each of the measures demonstrated good internal reliability (PWE's α = .80; SDO's α = .61; Egalitarianism's α = .70) and good test-retest reliability over a four month period (PWE's *r* = .42, *p* < .001, SDO's *r* = .53, *p* < .001, and Egalitarianism's *r* = .43, *p* < .001).

Examples of items include: 'If people work hard, they can get a very good job' (PWE); 'Some groups of people are not as good as other groups of people' (SDO); 'Everyone should be treated equally because we are all human' (egalitarianism). All statements were rated on a 6-point scale (1 = very strongly disagree, 6 = very strongly agree). For each scale, participants' responses to all items (reverse-scoring when needed) were averaged to create three separate indices such that higher scores indicated greater agreement with the construct.

Desired social distance from African Americans Our measure of desired social distance was drawn from measures commonly used in the social psychological (e.g. Esses & Dovidio, 2002) and developmental (e.g. Karafantis & Levy, 2004) literatures. Specifically, participants were asked 'How much would you like to live near [be friends with] Black persons?' (1 = not at all; 5 = very much). For ease of interpretation and discussion, participants' responses to each of the two questions were reverse-scored and then averaged such that higher numbers indicate greater social distance from African Americans.

Self-esteem and social desirability To assess their tendency to provide socially desirable answers, participants were asked to rate five statements (e.g. 'Have you ever said things to get people to like you?') on a 6-point scale (*never* to *many, many times*). As a brief assessment of self-esteem, respondents were asked to rate how good they felt about themselves (*not at all good* to *very, very good*) and selected the face drawing that best fit how they felt about themselves (1 = large frown; 7 = large smile; Andrews & Withey, 1976). For each scale, participants' responses were averaged to create two separate indices, such that higher scores indicate greater agreement with the construct.

Procedure Two experimenters conducted the study at each site. All participants were tested in

classrooms of 25 to 35 students. For privacy, students were asked to separate their desks or sit one seat apart while completing the survey.

Results

We began by testing our main hypothesis, that PWE would have different intergroup-relevant meanings with age. In separate simultaneous regression analyses, we regressed participants' egalitarianism and interracial social distance scores on variables representing PWE, participants' age groups, and the age group $\times$ PWE interaction. As predicted, demonstrating significant differences in slopes representing PWE's relations to egalitarianism and interracial social distance across the age groups, the interaction term (Age Group $\times$ PWE) was significant for both egalitarianism (F (1, 340) = 8.49 $p < .01$), and interracial social distance (F (1, 340) = 4.95, $p < .05$). As depicted in Figure 1, with increasing age, the relation between PWE and egalitarianism went from significantly positive to nonsignificant; whereas the relation between PWE and interracial social distance went from significantly negative to significantly positive. For egalitarianism and PWE, the correlation for Age Group 1 was significantly larger than the correlation for Age Group 3 ($Z = 2.69$, $p < .01$), whereas the differences between the correlations for Age Groups 1 and 2 ($Z = 1.58$) and Age Groups 2 and 3 ($Z = 1.26$) were not significant. For PWE and interracial social distance, the correlation for Age Group 3 was significantly different from the corresponding correlations among Age Group 1 ($Z = 2.82$, $p < .01$), and Age Group 2 ($Z = 3.32$, $p < .01$), whereas there was no significant difference between Age Groups 1 and 2 ($Z = -0.23$).

We also tested whether the predicted significant findings would remain significant when controlling for other relevant variables, namely participants' levels of social concerns and self-esteem. Thus, in separate simultaneous regression analyses, we regressed participants' egalitarianism and interracial social distance scores on variables representing PWE, social concerns, self-esteem, participants' age groups, and the age group $\times$ PWE interaction. Consistent with our theorizing, the interaction term

(Age Group $\times$ PWE) remained significant for both egalitarianism (F (1, 330) = 10.70, $p < .01$), and interracial social distance (F (1, 330) = 6.33, $p < .05$), despite the inclusion of these other relevant predictor variables in the analysis.[1]

Next, hoping to show conditions in which associated meanings do not accrue with age, we analyzed the relation between SDO and intergroup tolerance across the three age groups. In separate simultaneous regression analyses, we regressed participants' egalitarianism and interracial social distance scores on variables representing SDO, participants' age groups, and the age group $\times$ SDO interaction. SDO was significantly related, in line with our predictions (and past work), to egalitarianism (F (1, 340) = 26.27, $p < .001$), and to interracial social distance (F (1, 340) = 16.16, $p < .001$), showing that SDO was significantly related to greater intolerance. Consistent with our theorizing, the interaction term (Age group $\times$ SDO) was nonsignificant for both egalitarianism (F (1, 340) = .67, $p > .40$), and interracial social distance (F (1, 340) = 3.27, $p > .07$). The correlations between SDO and egalitarianism were virtually identical across the age groups (rs = $-.57$, $-.55$, $-.56$, all ps $< .001$) whereas the correlations between SDO and desired social distance from African Americans, varied from the youngest to oldest group (rs = $-.40$, $-.36$, $-.22$, all ps $< .05$), although there were no significant differences (comparing age group 1 to 3, $Z = 1.44$, comparing age group 2 to 3, $Z = 1.16$).

Discussion

In this study, we provided the first evidence of a shift in PWE's intergroup meaning. One weakness of Study 1 was that the oldest participants were drawn from a more select group of the population—college students—than the younger groups who were drawn from the surrounding public school system. Thus, the shift in meaning could be due to something specific to a college education or the college experience. To address this, we asked adult community members to complete a brief survey containing the PWE and egalitarianism measures from Study 1. These participants were
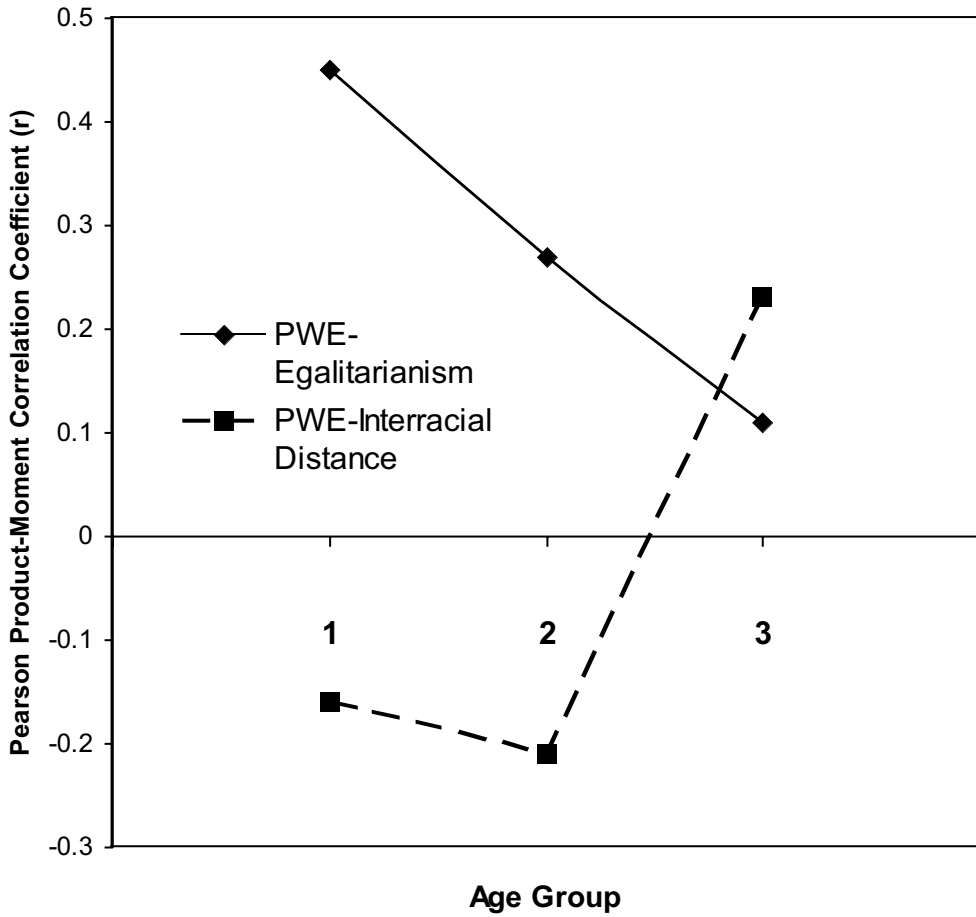
Figure 1. Correlation of egalitarianism and interracial distance with the Protestant work ethic, among elementary school, high school, and college students. *Note*: PWE = Protestant work ethic; Age group 1 = 10- to 12-year old children; Age group 2 = 14- to 16-year old adolescents; Age group 3 = approximately 20-year old college students.

recruited from malls, libraries, and restaurants in close vicinity to the public elementary school attended by the younger participants in Study 1. They included 47 European American adults aged 23 to 66 (mean age = 41.83) who did not have a four year college education. The correlation between PWE and egalitarianism was nonsignificant among the community sample (r = .10) and virtually identical to the correlation found among the college students in Study 1 (r = .11). Thus, the shift in PWE's meaning

cannot be easily explained by our use of college students as a comparison.

Taken together, then, our findings thus far show that PWE has different intergroup implications with age. For the younger samples, PWE was related positively to egalitarianism and negatively to desired social distance from African Americans, suggesting that, at these ages, PWE has a meaning that promotes social tolerance. For the oldest sample, however, the relations between PWE and these same social

tolerance measures were mixed (unrelated to egalitarianism, significantly positively related to desired social distance from African Americans), consistent with past findings and with the expectation that adults do not solely use PWE in an intolerant way. In Studies 3 and 4, we aimed to provide a more direct test of the intolerance meaning of PWE among adults.

Evidence that markers of intergroup intolerance related to SDO consistently across age groups, whereas the intergroup intolerance relation to PWE was moderated by age, provides initial support for the proposition that PWE's implications shift with age due to an associated meanings mechanism. The finding that the age-related pattern of the relation between PWE and intergroup measures remained significant when controlling for participants' levels of social concerns and self-esteem suggests that our results do not likely reflect one age group giving more socially desirable answers or having a greater need to boost their self-esteem by justifying their higher social status or derogating others.

Study 2

In Study 2, using an experimental induction of PWE, we aimed to replicate the findings from Study 1 demonstrating that PWE relates to social tolerance among young European Americans. Members of the same three age groups from Study 1 were asked to read one of two brief articles (equated for length at the reading level of the youngest age groups), each of which reported allegedly credible and extensive psychological research; however, the articles differed in that they concluded that the findings either supported or opposed PWE. The impact of each induction was then assessed with the measure of egalitarianism used in Study 1. Consistent with our theorizing and with results from Study 1, we expected that a pro-PWE (vs. anti-PWE) message would trigger greater egalitarianism among younger participants, who it is assumed construe PWE in terms of its surface meaning relevant to egalitarianism, relative to college students, who are presumably also familiar with PWE's inequality-justifying associations. Checks on participants' temporary acceptance, understanding, and enjoyment of the PWE-relevant articles in addition to a self-esteem measure were included.

Method

Participants Participants were recruited from the same schools described in Study 1. The oldest group (39 males, 130 females) was aged 18 to 25 years ($M = 21.31$). The middle group (49 males, 106 females) was aged 14 to 16 years ($M = 14.99$). The youngest group (41 males and 40 females) was aged 10 to 12 years ($M = 10.80$). Consistent with Study 1, the samples were limited to European Americans. Data from 14 participants who did not provide an accurate summary of the PWE-relevant articles were excluded.

Procedure Participants were randomly assigned to read either a pro-PWE (781 words) or anti-PWE (788 words) induction article. Purporting to convey psychological research, the articles described identical methods (such as a large, longitudinal study at Harvard University), but concluded either that 'people who work hard do well and have a successful life' (pro-PWE) or that 'people who work hard are not always successful' (anti-PWE). Participants were asked to briefly summarize the report after reading it.

Following the induction, participants completed the measures of egalitarianism, PWE, and self-esteem used in Study 1 and rated their understanding and enjoyment of the report ('How much did you understand [enjoy] the report that you read?'; 1 = not at all; 7 = very, very much). Finally, participants were debriefed. As in Study 1, each measure exhibited good internal reliability for the youngest, middle, and oldest age groups, as demonstrated respectively, αs for PWE = .92, .82, and .84; αs for egalitarianism = .62, .76, and .82; *r*s for self-esteem = .88, .87, and .90.

Results

Preliminary analyses We began by examining whether all three age groups temporarily

accepted the message encouraged by the PWE-relevant articles. As expected, across the three age groups, participants who read the pro-PWE article subsequently endorsed PWE to a greater extent (M = 5.21) than did participants who read the anti-PWE article (M = 4.20, $t(388)$ = 8.20, p < .001; Cohen's d = .83). This effect was obtained among the youngest ($t(67)$ = 5.57, p < .001; Cohen's d = 1.37), middle ($t(150)$ = 4.45, p < .001; Cohen's d = .73), and oldest groups ($t(167)$ = 4.86, p < .001; Cohen's d = .75). Suggesting that the two articles were received in similar ways by participants, participants reported similar levels of enjoyment of the anti-PWE (M = 3.49) and pro-PWE articles (M = 3.49; $t(388)$ = 0.06, ns), and similar levels of understanding the anti-PWE (M = 6.22) and pro-PWE articles (M = 6.36; $t(388)$ = 1.39, p > .16), and participants' membership in the different age groups did not significantly moderate the impact of the lay theory manipulation on their enjoyment (F < 1) or understanding (F < 1) of the articles.[2]

Primary analyses Our main hypothesis was that age group would moderate the impact of the PWE-relevant messages on reported egalitarianism. To test this, we analyzed participants' egalitarianism scores in a 2 (PWE Message) $\times$ 3 (Age Group) analysis of variance. This analysis revealed a significant Age Group effect (F (2, 384) = 14.84, p < .001), which, as in Study 1 (see Table 1), reflected younger participants' stronger endorsement of egalitarianism. There was no main effect of the PWE message (F (2, 384) = 1.56, p > .21). Of greatest relevance is the finding that the predicted Age Group $\times$ PWE Message interaction was significant (F (2, 384) = 8.49, p < .001). In an analysis of covariance, this effect remained significant when controlling for participants' self-esteem and enjoyment and understanding of the articles (F (2, 380) = 6.89, p < .001).

As illustrated in Figure 2, follow-up comparisons revealed the nature of this interaction. Among the youngest group, those assigned to read the pro-PWE article subsequently reported significantly higher levels of egalitarianism (M = 5.74) than did those assigned to read the anti-PWE article (M = 5.35; $t(67)$ = 2.14, p < .05; Cohen's d = .52). Similarly, among the middle age group, those assigned to read the pro-PWE article subsequently reported significantly higher levels of egalitarianism (M = 5.10) than did those assigned to read the anti-PWE article (M = 4.70; $t(150)$ = 2.61, p < .01; Cohen's d = .43). In contrast, among the oldest group, those assigned to read the pro-PWE article subsequently reported significantly lower levels of egalitarianism (M = 4.58) than did those assigned to read the anti-PWE article (M = 4.96; $t(167)$ = 2.17, p < .05; Cohen's d = −.34).

Discussion

Consistent with our theorizing and findings from Study 1, results from Study 2 revealed that a pro-PWE message had markedly different effects on the reported egalitarianism of people of different ages. Although participants within all three age groups endorsed the pro- or anti-PWE views presented to them, among the youngest two groups only, those encouraged to temporarily adopt a pro-PWE view endorsed egalitarianism to a greater extent than did those encouraged to temporarily adopt an anti-PWE view.

Although these results are consistent with our theorizing about the dual intergroup implications of PWE, particularly that young people would be familiar with mainly the egalitarian meaning of PWE, it is noteworthy that, among the oldest group, those encouraged to adopt a pro-PWE view endorsed egalitarianism to a significantly *lesser* extent than did those encouraged to adopt an anti-PWE view. The finding is consistent with past theorizing and work suggesting that PWE has an intolerance meaning (e.g. Biernat et al., 1996; Crandall, 1994, 2000; Katz & Hass, 1988; Kinder & Sears, 1981; McConahay & Hough, 1976), but is inconsistent with a smaller body of previous work, including our Study 1, which found a nonsignificant rather than negative relation between PWE and egalitarianism (e.g. Biernat et al., 1996; Katz & Hass, 1988; Montieth & Walters, 1998). The finding from Study 2 indicates that, on average, this sample of college students viewed PWE as supporting intolerance.
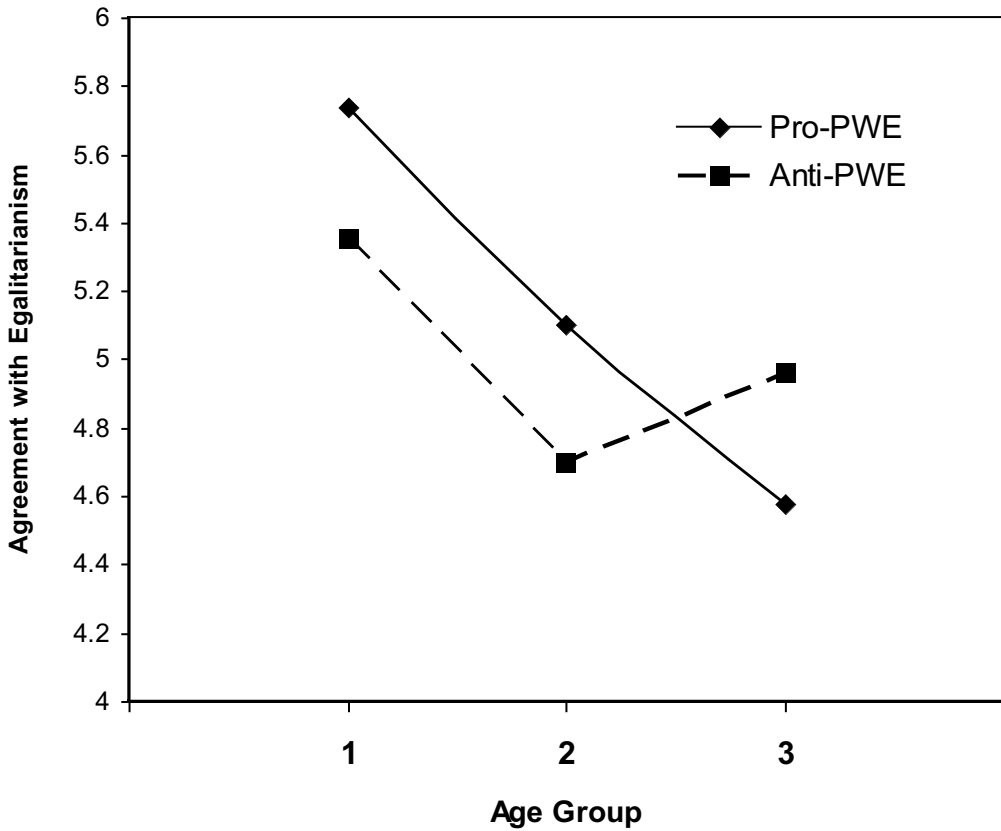
Figure 2. Difference in endorsement of egalitarianism for participants assigned to read articles supporting (Pro-PWE) versus undermining (Anti-PWE) the Protestant work ethic, among elementary school, high school, and college students. *Note:* Age group 1 = 10- to 12-year old children; Age group 2 = 14- to 16-year old adolescents; Age group 3 = approximately 20-year old college students.

Study 3

Findings from Studies 1 and 2 as well as the prior work on PWE indicate that college students tend to think of PWE in an intolerant way (e.g. Crandall, 1994; Katz & Hass, 1988). Importantly, however, our theorizing about adults directly suggests that specifically focusing on a particular aspect of PWE should give rise to its intolerance meaning. In Study 3, therefore, we aimed to directly manipulate adults' interpretations of PWE to demonstrate a situational trigger of the intolerance meaning of PWE.

To briefly review our theorizing, we hypothe-size that PWE's implication for intolerance develops in part from social and cultural experience. One way in which the justifier of inequality meaning may arise is through exposure to others using PWE to justify the status quo (inequality), as in the argument that disadvantaged groups and group members are to blame for their disadvantage and that they could pull themselves out of their dire situation by simply putting forth some effort. Repeatedly experiencing PWE used in this way should increase the likelihood that thinking about how people use PWE to justify their arguments cues the intolerant meaning of PWE. Thus, having participants consider others' use of PWE in

arguments is expected to trigger the associated meaning of PWE.

In this study, all college student participants were instructed to engage in a thought exercise. Half of the participants were asked to think and write about instances of others using 'people who work hard succeed' in support of their arguments (justification condition) whereas the other half of participants were asked to think and write about what 'people who work hard succeed' means (definition condition). Adults who thought about others' use of PWE in arguments were expected to endorse egalitarianism to a less extent than adults who considered the definition of PWE.

Addressing the possibility that merely considering any instances of others using a statement in an argument (justification condition) would impact one's level of egalitarianism, two additional, control conditions included the same justification and definition condition instructions regarding the lay theory, 'Absence makes the heart grow fonder; sometimes spending too much time together is bad for a couple', which was expected not to hold different intergroup implications across conditions.

Method

Participants A total of 135 undergraduates (63 women, 72 men), aged 18–29 ($M = 21.45$), all native speakers of English, received US$6.00 for participating. Race/ethnicity information was not assessed in this sample due to an error in the computer program. The racial/ethnic composition of all undergraduates enrolled at this university during the year of the experiment was: 9% African American, 23% Asian, 7% Latino, 36% European American, 18% unknown, and 8% other.

Procedure Participants were seated in individual cubicles with computers and were randomly assigned to one of four conditions. The PWE-justification instructions stated: 'Please think about times you may have heard others make a particular statement in discussions or arguments, in order to support their views. That is, please think about instances in which other people have used this statement to help support

a particular point they were trying to make. Think about how others have argued that: People who work hard succeed; people who do not work hard fail'. The PWE-definition induction instructions stated: 'Please think specifically about the meaning of a particular statement. That is, think about what this statement means. Think about the statement: People who work hard succeed; people who do not work hard fail'. Participants randomly assigned to one of the control conditions were given identical justification and definition instructions for: 'Absence makes the heart grow fonder; sometimes spending too much time together is bad for a couple.'

To facilitate participants' involvement in these thought exercises, they were instructed to spend five to ten minutes typing some of their thoughts via computer. It is important to note that neither task instructions (justification vs. definition), task content (PWE vs. Control), nor their two-way interaction significantly impacted time spent on this exercise, recorded in milliseconds via computer (all Fs < 1).

Participants lastly completed the measure of egalitarianism used in Studies 1 and 2 and indicated their level of agreement (using the same 6-point scale) with the two statements used in the study to define PWE: 'People who work hard succeed', and 'People who do not work hard fail'.

Results and discussion

As predicted, participants assigned to the PWE-justification condition subsequently reported lower levels of egalitarianism ($M = 3.88$) than did those assigned to the PWE-definition condition ($M = 4.86$; $t(64) = 3.06$, $p < .01$; Cohen's $d = .76$). Among the control conditions, in contrast, there was no significant difference in reported egalitarianism between those who received the justification instructions ($M = 4.85$) and definition instructions ($M = 4.90$; $t(67) = 0.17$, ns). As shown in Figure 3, these findings constituted a significant interaction between task instructions (justification vs. definition) and task content (PWE vs. control) ($F(1, 131) = 3.98$, $p < .05$, $\eta_p^2 = 0.03$). Only among participants considering the justifying uses of
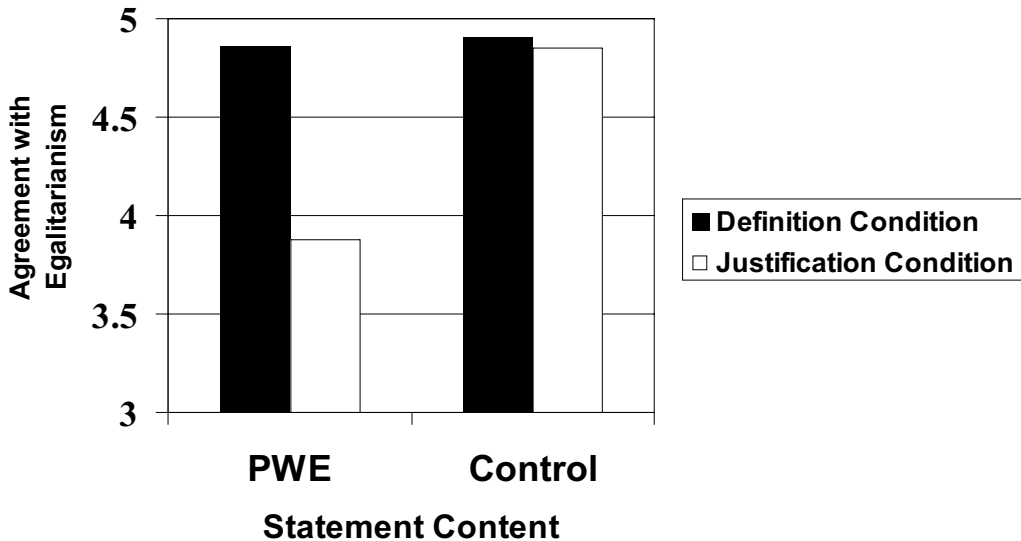
Figure 3. Endorsement of egalitarianism for college students assigned to think about statements of differing content, reflecting either PWE (Protestant work ethic) or a control topic ('Absence makes the heart grow fonder'), under instructions to focus on either how others have used the statements to justify their views (justification conditions) or what the statement means (definition conditions).

PWE did we find lower levels of egalitarianism. Thus, merely thinking about people using any lay theory in an argument does not promote lower levels of egalitarianism.

To better understand the differences between the PWE-justification and PWE-definition conditions, we also coded participants' free responses in those conditions. As expected, justification-condition participants (66.7% vs. 5.6% of definition-condition participants) mentioned significantly more instances of blaming people for their misfortune (e.g. 'it is a shame that we support such things as welfare, which enables people to be lazy and unambitious, to sit around all day long') whereas definition-condition participants (94.4% vs. 33.3% of justification-condition participants) were significantly more likely to simply restate the PWE (e.g. 'people who work hard by putting in time and effort succeed and those who don't will not succeed. Those who work hard achieve in life and those who do not work hard do not achieve in life'), $\chi^2(1, N = 66) = 14.57, p < .001, \phi = 0.64)$.

Moreover, participants assigned to the PWE conditions did not significantly differ in agree-

ment with the PWE statements ($M_{justification}$ = 4.36; $M_{definition}$ = 4.30; $t(64) = 0.16, ns$). Thus, it appears that the *meaning* of PWE, not *endorsement* of PWE, was influenced by the experimental induction. Thinking about PWE used in support of arguments (e.g. as a justifier of inequality), then, seems to contribute to the PWE-intolerance relation.

Study 4

In Study 4, we aimed to provide further evidence that experience with PWE as a justifier contributes to PWE's intolerance meaning by using the same justification and definition thought exercises from Study 3, but this time, assessing their impact on actual intergroup behavior—monetary donations to a homeless shelter. College student participants received either the justification or definition inductions and then were introduced to an ostensibly unrelated task for which they were paid two dollars. Borrowing from successful prior inductions promoting greater helping (e.g. Batson et al., 1997; Levy et al., 2002), participants read

about a local homeless shelter and were given the opportunity to donate money. Adults focused on others' use of PWE in support of their arguments were expected to donate less money than adults focused on the definition of PWE. A control condition in which participants did not engage in a thought exercise was included for comparison purposes.

Method
Participants A total of 132 undergraduates (18 men, 67 women, 47 unidentified), aged 18 to 22 years (M = 19.96), participated in exchange for extra credit in their psychology course and unexpectedly received US$2. Participants were 12.9% African American, 7.6% Asian, 8.3% Latino, 25.8% European American, 9.8% other, 35.6% unavailable.

Procedure Participants received a large envelope containing the study materials. Except for participants randomly assigned to not participate in the thought exercises (control condition), the first pages of the survey consisted of 'Study 1', in which participants were provided either the justification or definition thought exercises. The subsequent pages consisted of 'Study 2', which included a news column about a local homeless shelter and instructions for donating money to that shelter. Study 2 was introduced by a letter ostensibly from the professor of the course stating that she was 'serving on a committee on student affairs and thus was asked to distribute this survey ... The committee has some funds so you are being paid $2'. Stapled to the last page of the survey packet was a sealed envelope containing, in US currency, four quarters and ten dimes. Instructions contained in the survey directed participants to take their payment and to consider whether or not to make a cash donation to the homeless shelter. In the debriefing, no participants reported being suspicious of any aspect of the study.

Materials
Thought exercise Participants in the experimental conditions were asked to complete the same thought exercise regarding PWE (justification

and definition instructions) as described in Study 3.

Description of a homeless shelter The cover story that was used to introduce the homeless shelter was adopted from Levy et al.'s (2002) adaptation of Batson and colleagues' (1997) investigations of helping among college students. Participants were told that they would be reading and evaluating a new column for one of the university newspapers and moreover that the article contains transcripts from actual interviews with homeless persons.

After reading the sample article, participants received a note from the supposed student committee who needed the feedback on the article: 'It occurred to us that some people reading the news article about homeless persons ... might wish to help them ... donations would be most helpful ... envelope attached to this survey packet contains your $2 payment ... If you would like to donate some money ... place it in the large yellow envelope that your survey came in ... your participation in this study in no way obligates you to donate'.

Results and discussion
As predicted, justification-condition participants subsequently donated significantly less money (M = $1.28) than definition-condition participants (M = $1.77) ($t(88)$ = 2.90, $p < .01$), and control-condition participants (M = $1.66) ($t(91)$ = 2.28, $p < .05$). The definition and control conditions did not significantly differ from one another ($t(85)$ = 0.65, *n*s) This set of findings constituted a significant effect across conditions ($F (2, 131)$ = 4.72, $p < .05$).[3]

We also analyzed participants' free responses from the thought exercises. Consistent with findings from Study 3, justification-condition participants (37.8%) mentioned significantly more instances of blaming people for their misfortune than did definition-condition participants (9.5%) whereas definition-condition participants (90.5%) were significantly more likely to simply restate the PWE than justification-condition participants (62.2%) ($p < .001$). Differences in the study environment likely contributed to the fewer blame explanations

given in this study than in Study 3. Study 3 participants typed their essays into a computer in a private cubicle, which likely made participants feel more comfortable writing socially undesirable responses, compared to Study 4 participants who wrote their essays while in a classroom with other participants.

In summary, the PWE-justification condition seemed to temporarily decrease people's donations relative to the other conditions. In line with the results from Study 3, these results suggest that experience with PWE used in arguments as a justifier of inequality contributes to the PWE-intolerance relation.

General discussion

In this paper, we aimed to show that a lay theory could have dual intergroup implications. Specifically, we aimed to show that PWE is not simply related to intergroup intolerance in the United States, as past work has indicated, but rather PWE has implications for both intolerance and tolerance. We also aimed to provide evidence for an associated meaning mechanism, namely that the intolerance implication is linked to PWE through social experience. Results from four studies support these aims.

Because previous research (conducted with young adults) has tended to demonstrate that PWE relates to endorsing intolerance toward less advantaged or more stigmatized groups, such work seems to have implied either (a) that the intrinsic logic of PWE directly prescribes intolerance, or (b) that these relations solely reflect people's use of PWE to justify one's pre-existing, prejudiced beliefs. In Study 1, however, PWE positively related to egalitarianism and desired social closeness to African Americans among those roughly 10 and 15 years old. Accordingly, an assumption that the logic of PWE intrinsically prescribes intolerance does not appear to tell the whole story. Study 2 showed that manipulating participants' adoption of PWE influenced their intergroup beliefs, promoting higher levels of egalitarianism among younger participants and lower levels of egalitarianism among older participants. Moreover, then, the idea that PWE

relates to intergroup attitudes only as a justifying afterthought also does not appear to tell the whole story. Instead, we suggest that relations between PWE and intolerance reflect in part the acquired meanings that become associated with PWE through social experience in the US. Further supporting this explanation, Studies 3 and 4 showed that adults focused on instances of others using PWE to justify their views endorsed egalitarianism to a lesser extent and donated less money to a homeless shelter than did adults focused on the definition of PWE.

In environments in which two or more meanings of a lay theory are present, it is possible that the initial meaning of a lay theory for example as understood by children is not the surface meaning of a lay theory but instead an associated meaning. The sociocultural environment could emphasize an associate meaning to children thereby overriding the surface meaning. Research is needed to address this possibility.

Some remaining issues

Our findings show that younger persons tend to use the social equalizer meaning of PWE and, consistent with prior work, that adults tend to use the justifier of inequality meaning of PWE. An important remaining issue is whether the justifier of inequality meaning of PWE replaces the social equalizer meaning of PWE or whether the social equalizer meaning remains accessible such that some adults (or adults in some contexts), use the social equalizer meaning of PWE. We suspect that once aware of the justifier of inequality meaning of PWE, people are unlikely to think of PWE exactly as they did before; however, we suggest that adults can still view PWE in an egalitarian way. As mentioned previously, for PWE to function effectively for adults as a justifier of inequality in a seemingly egalitarian society, it would need to at least appear egalitarian among adults. Some adults may sincerely continue to believe that hard work is a social equalizer, which is supported anecdotally by 'rags to riches' stories (figures such as Andrew Carnegie, Oprah Winfrey) that have long captured headlines and have been the basis for popular books in the US

(e.g. Heykoe & Hock, 2003; Liberman & Lavine, 2000).

In our recent work, we found that adults report using the social equalizer meaning of PWE. Study participants were asked to explicitly report the extent to which they use PWE in different ways (e.g. 'When you say things like "People who work hard succeed"', tell us how much you mean this: 'Anyone can work hard and succeed because people in different groups have similar abilities and the potential to do well' [social equalizer]; 'Hard work is all that's necessary for success, so it is not fair to give preferences to race-minority groups like Blacks and Latinos' [deny racial inequality]). European American college students, on average, report strong use of the egalitarian meaning and relatively weaker use of the denial of racial inequality meaning. Although such a measure has its disadvantages, the findings suggest that both meanings are likely available and used by adults. It is important to note that a weakness of the current investigation is that we did not include direct measures of the different intergroup meanings of PWE.

Future work may aim to induce an egalitarian meaning of PWE among adults—that is, an induction that boosts people's social tolerance levels significantly above and beyond a control condition. A successful induction of this sort would suggest that the developmental trend toward intolerance shown in Studies 1 and 2 of the current investigation could be reversed.

Findings from this investigation point to the need for greater focus on different age groups to better understand how, why, and when people endorse a particular lay theory or particular implication of that lay theory. This investigation, however, was limited in its ability to address the important issue of lay theory endorsement and use by groups differing on factors other than age. Does PWE develop the 'justifier of inequality' meaning for all groups and in all cultures? Following from the assumption that people accumulate and refine their understandings of certain lay theories such as PWE through particular social and cultural experiences, PWE should not accumulate the same meanings in all environments and cultures. Conceiving of culture in broad terms, PWE should not develop the justifier of inequality meaning in cultures where people tend to blame others less for their disadvantage. Prior work suggests that Latin American adults tend to blame others less for their disadvantage or stigma (being overweight, failing at a task) than US adults (e.g. Betancourt & Weiner, 1982; Crandall & Martinez, 1996). In a recent study of Colombians (Mestizos) of ages similar to those in Studies 1 and 2, we found that the correlation between PWE and egalitarianism was significantly positive and similar across the three age groups (Levy, West, & Ramirez, in press). Thus, unlike our current findings with European Americans, PWE appears to consistently relate to egalitarianism among Mestizos, the majority group in Colombia. This result seems to support the idea that the egalitarian meaning of PWE is the surface rather than associated meaning of PWE and more broadly represents additional evidence that socio-cultural experiences shape the meaning of PWE.

Even within cultures such as the United States in which the justifier of inequality meaning of PWE is available, not everyone in the culture may be equally exposed to it. European American children's and early adolescents's stronger report of the egalitarian meaning of PWE suggests the justifier of inequality meaning of PWE is not as prevalent in their immediate environment compared to European adults. The justifier of inequality meaning of PWE also may be less likely to be directly highlighted to members of relatively disadvantaged groups in the US. After all, that meaning of PWE justifies advantaged group members' place in society. Members of disadvantaged groups seem more likely to be repeatedly exposed to the social equalizer meaning of PWE by, for example, family and friends because that meaning conveys a positive pathway in society despite their disadvantage. Indeed, our recent findings indicate that PWE has a predominately egalitarian meaning among African American and US Latino adults compared to European American adults (Levy et al., in press). It is also possible that members

of disadvantaged groups reject PWE because of their familiarity with the intolerant meaning rather than focusing on the egalitarian meaning, which is an important issue requiring further study.

Thus, by studying a wider diversity of lay theorists, we may be able to tease apart the complexities behind sociocultural, political, and motivational factors that influence the degree to which members of different groups endorse and use particular interpretations of the lay theories.

Future work is also needed to examine in more detail what accounts for the developmental shift in the meaning of PWE as revealed in our present studies. The shift is likely brought on by a combination of cognitive, sociocultural, and motivational factors. Although even the youngest participants in our studies have already passed through the major developmental milestones, cognitive maturation is ongoing during the adolescent period. Still, our recent findings with African American, US Latino, and Mestizo Colombian adults which indicated their tendency to use PWE in an egalitarian way suggest that the European American children do not simply use the egalitarian meaning of PWE because of cognitive immaturity.

As emphasized in the present work, sociocultural factors likely play a key role in the shift in PWE's meaning; however, they likely work in concert with motivational forces. The justifier of inequality meaning of PWE seems less relevant to children relative to the social equalizer meaning of PWE. Parents, teachers, and other adults in the immediate environment of children likely want to motivate children to work hard and be successful.

Studying life transitions, which have motivational effects (e.g. Higgins & Parsons, 1983; Ruble, 1994), appears to be a fruitful avenue for developmental investigations in this area. For example, while preparing to compete for college or for job placement at any age when one's place in the system is mostly directly in question, members of relatively advantaged groups may be particularly likely to receive and be receptive to the justifier of social inequality

meaning of PWE. We are addressing this in current work.

Another key remaining issue is whether our theorizing about the dual intergroup implications of lay theories is specific to PWE or generalizes to other lay theories. As noted earlier, lay theories that are justifiers of inequality in a seemingly egalitarian society seem to be good candidates for having more than one intergroup meaning, namely for having a surface meaning promoting social tolerance and an associated meaning that serves as a justifier of intolerance.

In our current work, we are studying another justifier of inequality in the US, the colorblind theory, and have found promising preliminary results for two contradictory intergroup meanings. The colorblind theory, which suggests that social category information such as race is irrelevant, can be used in certain contexts (or by certain individuals) to support the socially tolerant stance that people should be judged as individuals rather than as members of a group (e.g. Allport, 1954; Wolsko, Park, Judd, & Wittenbrink, 2000). However, in other contexts (and for other individuals) the colorblind theory can be used in other ways (see Richeson & Nussbaum, 2004), for example, to deny the existence of racism and to blame disadvantaged groups for their disadvantage (e.g. Neville, Lilly, Duran, Lee, & Browne, 2000; Schofield, 1986).

Serving as a justifier of inequality within a seemingly egalitarian environment is just one consideration in determining whether lay theories have more than one meaning and particularly contradictory ones. Consistent with a motivational interpretation, lay theories likely have more than one intergroup implication to better serve the needs of lay theorists. If a lay theory is salient and socially acceptable in a setting in which people have a range of social beliefs such as tolerant and intolerant beliefs, people may attempt to use that lay theory in multiple ways. For example, PWE and colorblind theory are pervasive theories in which Americans are highly invested in; so, people may be motivated to accommodate such lay theories to their varying needs across situations

and over time rather than simply discarding the lay theories. Still, a lay theory would need to be somewhat vaguely and broadly defined to allow for flexibility in its implications and social appeal to people with a wide range of beliefs and goals. Social dominance orientation, although potentially salient in settings where people have wide range of beliefs, is not easily framed to fit social tolerance. In contrast, PWE is more broadly defined and thus potentially has wider appeal to people both high and low in social tolerance. Further, the social and political climate would need to be receptive to different uses of that lay theory. For instance, as suggested earlier, PWE is unlikely to be used as a justifier of inequality in environments in which people tend not to be blamed for their negative outcomes, but rather external forces are blamed. Political movements or campaigns, nonetheless, may be able to bring about a temporary or long-lasting interpretative shift in a lay theory.

Some of our findings suggest that US adults may move somewhat seamlessly between different intergroup meanings of PWE. Findings from the current Studies 3 and 4 suggest that adults can be spontaneously led to think about PWE as justifier of inequality. In addition, our recent work shows that European American adults spontaneously invoke the justifier of inequality meaning of PWE in response to a situational trigger—reading about an Affirmative Action program that would negatively impact members of their ingroup. Thus, self and group interests as well the broader sociocultural and political context likely provoke interpretive shifts in PWE and other lay theories.

This investigation also speaks to the stable and flexible aspects of lay theories. Once adopted, a lay theory could become a possession (see Abelson, 1986), which 'predisposes the follower to observe and accept facts compatible with the theory, and it becomes the core feature in group allegiances and social discourse' (Furnham, 1988, p. 226). At the same time, when a lay theory is environmentally activated, people can rather readily (but not necessarily permanently) switch to viewing their world, and rendering relevant intergroup judgments, through a different lay theory (one that is likely familiar to them through previous social experiences; e.g. Dweck, Chiu, & Hong, 1995; Hong et al., 2001). Results from our studies of PWE and theorizing about lay theories with dual intergroup implications suggest the potential for additional flexibility and stability not afforded to lay theories with unitary intergroup implications. Because people may be able to use lay theories such as PWE to support divergent positions, attitudes, or behaviors, they can then use the same lay theory in a wide variety of contexts—ones promoting either tolerance or intolerance. This flexibility additionally provides a mechanism for the potential stability of lay theories with more than one meaning. Because people can use the same lay theory across time and situations, they do not need to give up the lay theory when the social implications are not relevant or appropriate in a particular context. Future work, however, is needed to test this conjecture.

In conclusion, the current investigation showed that PWE has two opposite intergroup implications; that is, PWE not only has relations to intolerance (as past work has shown) but also has relations to tolerance. We also provided preliminary evidence for an associated meaning mechanism underlying the development of the intolerance meaning among adults. Further, there is preliminary evidence that adults may not always use the intolerance meaning of PWE. The intolerance implication of PWE likely depends on adults focusing on and being motivated by the justification aspect of PWE. More work is needed to understand the extent to which adults use the tolerance meaning of PWE.

More broadly, results from the present investigation suggest that intolerance could develop at least partly through adopting a lay theory with opposite intergroup implications. Also, people who endorse lay theories such as PWE in the US may only appear to be speaking the same language; these individuals may actually intend to communicate vastly different messages. Further study of lay theory development may help illuminate how intergroup attitudes develop and change.

Notes

1. The interaction term (Age group × PWE) also remained significant for both egalitarianism ($F(1, 339) = 8.35$, $p < .01$), and interracial social distance ($F(1, 339) = 4.84$, $p < .05$), when considering the gender of the participant. There was a significant main effect for gender, a showing consistent with past work (e.g. Pratto et al., 1994), that females report greater social tolerance ($F(1, 339) = 6.33$, $p < .05$).

2. In our preliminary analyses, we also examined potential gender differences in a 2 (PWE message) × 3 (Age group) × 2 (Gender) analysis of variance on participants' egalitarianism scores. The gender of the participants contributed to one statistically significant effect, a gender main effect, which, consistent with past work including Study 1, indicated that that females report higher levels of social tolerance than do males ($F(2, 384) = 4.44$, $p < .05$).

3. This same pattern of findings was revealed when considering donated money as a discrete variable (whether or not donated). That is, there was a significant effect across conditions ($F(2, 131) = 5.80$, $p < .01$). Follow-up analyses revealed that justification-condition participants were significantly less likely to donate money (68%) than definition-condition participants (92.7%) ($t(88) = 3.13$, $p < .01$) and control-condition participants (88.6%) ($t(91) = 2.67$, $p < .01$). The definition and control conditions did not significantly differ from one another ($t(85) = 0.51$, ns).

   Also noteworthy is that in preliminary analyses, we examined potential gender of and race of participant differences and found no significant main effects or interactions with condition in predicting donations to the shelter. However, our sample was limited in terms of the race and gender of the participants; plus, about one third of participants did not provide their race or gender.

Acknowledgments

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