

Lay theories and intergroup relations: A social-developmental perspective

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Abundant research suggests that the study of lay theories helps to explain intergroup relations. Building on this work as well as “interactionist” theories for understanding social behaviour from developmental and social psychology, we propose an integrative social-developmental perspective examining how lay perceivers’ characteristics (e.g., age, race, psychological motivations) interact with the environments in which they are nested to impact lay theory use over time and during life transitions. Using this perspective to guide our investigation of the Protestant work ethic (PWE) and colourblind theory, we show that a single lay theory can have a socially tolerant or intolerant meaning. We review work with US children and adults (Asians, Blacks, Latinos, Whites) as well as research with Colombian children and adults (Mestizos), showing similarities and differences in perceivers’ uses of PWE and the colourblind theory. Even when both meanings are prevalent in a given culture, they are not necessarily equally emphasised in all environments or for all people living in those environments, nor are they responded to in the same way by all people. We discuss the implications of these results for theorising on lay theories and offer directions for future work in this area.

Like trained scientists, ordinary people seek “to predict and control the course of events with which [they are] involved” (Kelly, 1955, p. 5). People’s naïve theories “achieve in some measure what science is supposed to achieve: an adequate description of the subject matter which makes prediction possible” (Heider, 1958, p. 5). Kelly and Heider helped to inspire the study of people’s everyday theories, which has culminated in the

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subsequent decades in a lay (or naïve, implicit, folk, or common sense) theories approach to social perception. Much work confirms their early insights that people's perceptions are guided by their lay theories, helping them to understand, predict, control, and respond to their social world (for reviews see Fletcher, 1995; Furnham, 1988; Hong, Levy, & Chiu, 2001; Levy, Chiu, & Hong, 2006a; Wegener & Petty, 1998; Yzerbyt, Judd, & Corneille, 2004).

Over the past two decades, researchers have increasingly investigated the role of lay theories in intergroup relations (e.g., for reviews see Hong et al., 2001; Levy et al., 2006a; Yzerbyt et al., 2004). This work has identified numerous relevant lay theories including essentialism (e.g., theory about the core qualities of a group, Haslam, Rothschild, & Ernst, 2002; Yzerbyt, Rocher, & Schadron, 1997), incremental versus entity theories (theories about the malleability vs fixedness of human attributes, e.g., Hong, Chiu, Yeung, & Tong, 1999; Levy, Stroessner, & Dweck, 1998), and the Protestant work ethic (theory that hard work leads to success, e.g., Crandall, 1994; Levy, Freitas, & Salovey, 2002). Lay theories filter incoming social information and direct cognition, affect, and behaviour, resulting in positive and negative implications for a wide variety of ingroups and outgroups (e.g., race, ethnicity, nationality, sexual orientation, gender, weight; Crandall, 1994; Haslam et al., 2002; Hong et al., 1999; Katz & Hass, 1988; Keller, 2005; Levy et al., 1998; Quinn & Crocker, 1999; Yzerbyt et al., 1997).

Despite tremendous progress within a short period of time in uncovering relevant lay theories and showing their far-reaching impact on group processes, conclusions about the role and nature of lay theories are limited by the contexts and populations studied. Some work has considered context broadly in terms of culture and shown that, across cultures, some lay theories are used in a similar way or endorsed to a similar degree while others are not (e.g., Chiu, Dweck, Tong, & Fu, 1997; Crandall & Martinez, 1996; Kashima et al., 2005; Lickel, Hamilton, Wiczorkowska, Lewis, Sherman, & Uhles, 2000; Morris, Menon, & Ames, 2001). These studies tend to be conducted with adult numerical majority group members in the cultures.

Within-culture studies also tend to be limited to adult numerical majority group members (e.g., Crandall, 1994; Haslam et al., 2002; Katz & Hass, 1988; Keller, 2005). Some of this work has focused on context narrowly within an experimental situation and shown that lay theories that are made accessible play a causal role in group processes (e.g., Levy et al., 1998; Levy, West, Ramirez, & Karafantis, 2006b). Little within-culture work has directly examined the dynamic interrelation between one's group-related experiences and lay theories relevant to intergroup relations, although the interrelation is acknowledged (e.g., McGarty, Yzerbyt, & Spears, 2002). For example, few studies have examined within-culture differences in lay theory

endorsement such as those as a function of social class (see Mahalingam & Rodriquez, 2003) or ethnicity (see Hunt, 2000). Moreover, work examining the role of accumulated experiences on lay theory use, which could be accomplished by comparing lay theory use among children to adults, is scant. The limited work on lay theories and intergroup relations among children has tended to show that lay theories emerge early in life and influence group processes in roughly the same way for children and adults in the numerical majority group (e.g., Gelman, 2003; Karafantis & Levy, 2004; Levy & Dweck, 1999).

Studying a wider range of contexts and lay theorists could reveal a more complex role for at least some lay theories in intergroup relations. It is possible that the intergroup meanings of lay theories vary depending on the context and lay people's characteristics (e.g., age, race, psychological and social needs). As an example, school environments may highlight a "social equaliser" meaning of the Protestant work ethic (PWE) to children in messages such as *anyone can succeed through hard work*. However, additional meanings of the lay theory may be commonplace in the immediate environment of adults. Adult members of the socially advantaged groups, although endorsing the egalitarian implication of PWE at times, may also be motivated to embrace a "justifier of inequality" meaning of PWE, which suggests that disadvantaged groups "deserve" their disadvantage by not working hard enough. Adult members of disadvantaged groups may tend to receive and respond to the egalitarian meaning (rather than the justifier of inequality meaning of PWE) because it suggests a positive pathway (hard work) for them in a hierarchical society, despite their disadvantage.

SOCIAL-DEVELOPMENTAL PERSPECTIVE

To address such issues, we adopted an integrative social-developmental perspective. The perspective considers an enduring social psychological question about how contexts shape people's judgements and behaviour with an enduring developmental question about how the accumulation of experience influences people's judgements and behaviours (see Pomerantz & Newman, 2000, for a call for the integration of social and developmental theorising). We have mainly drawn from ecological and life transition theories from developmental psychology, and social identity and self-categorisation theories from social psychology.

This social-developmental perspective is summarised in Figure 1 (based on Bronfenbrenner's, 1979, ecological perspective). An ecological perspective emphasises that people interact with and are nested within many potentially different environments; further, this approach highlights the role that personal characteristics (e.g., age, race) play in the kind of messages

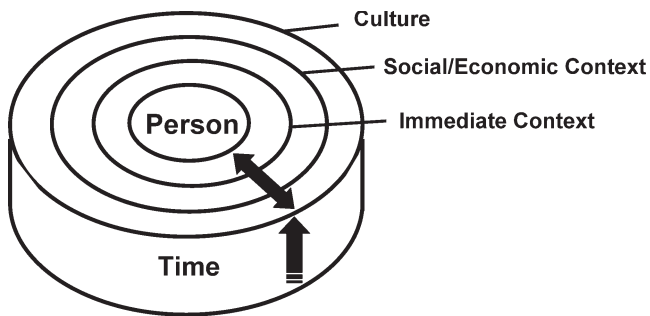


Figure 1. Schematic representation of a social-developmental perspective.

people receive from their environments and how they respond to them (e.g., Bronfenbrenner, 1979, 1986). Representing a complementary interactionist perspective, social identity and self-categorisation theories emphasise that people have multiple, nested social identities (e.g., self, ethnic group, national group) and that different social contexts elicit thoughts, goals, and behaviours based on one or more of the identities (e.g., Brewer, 1991; Hogg & Abrams, 1988; Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner & Reynolds, 2001). Figure 1 highlights three of the many possible environments within people's social system: culture (e.g., mass media), social-economic context (e.g., community), and immediate environment (e.g., family).

The dynamic interactions between personal characteristics and environments are captured by the double arrow in Figure 1. People of different ages and races may, as suggested earlier, differentially receive and respond to messages about whether to use the egalitarian or the justifier of inequality meaning of a lay theory such as PWE. Social identity theory indicates that people are motivated to positively evaluate a salient social identity, and thus people will react to threats to their social identities and self-esteem in certain contexts with prejudice towards other groups (see Abrams & Hogg, 1988; Hogg & Abrams, 1988; Tajfel & Turner, 1979; Turner et al., 1987). Indeed, lay theories serve social and psychological needs such as bolstering one's self-esteem and lending support for one's values (e.g., see Levy et al., 2006a), needs that would not be necessarily relevant in all situations or to people of all ages and backgrounds.

Self-categorisation and social identity theorists have indeed noted the role of lay theories in the dynamic interaction between people and contexts: "people's collective psychology as group members and the social structure of intergroup relationships" . . . are "mediated by people's collective beliefs, theories, and ideologies about intergroup relationships and the wider social system" (Turner & Reynolds, 2001, p. 146). Similarly, ecological theories

acknowledge the potential socialising role of ideologies and belief systems embedded in sub-cultures and the broader culture (e.g., Bronfenbrenner, 1979, 1986).

In addition, as depicted in Figure 1, both social and developmental theories suggest that “time” is a crucial consideration, including the cumulative effects of experiences throughout a person’s lifetime on his/her identities, in addition to changes and continuities over time in the environments in which a person is developing (e.g., Bronfenbrenner, 1979, 1986; Turner et al., 1987). The study of particular life periods, such as important transitions, is especially highlighted by ecological perspectives (e.g., Bronfenbrenner, 1979; Cowan & Cowan, 2001) and social-developmental theories of transitions (e.g., Higgins & Parsons, 1983; Ruble, 1994). During a life transition, such as competing to enter college or the work force, people may adopt the intergroup meaning of a lay theory that best suits their needs during that time.

In short, once people are knowledgeable about the multiple meanings of a lay theory, their use of one meaning likely depends on the extent to which that meaning is salient or personally relevant. Thus, consistent with work suggesting that lay theories are knowledge structures activated in particular environments (e.g., see Hong et al., 2001; Levy et al., 2006a), we expect that the different meanings of a lay theory can be activated.

With this guiding social-developmental perspective, we have begun to pursue the dynamic interaction between lay people’s characteristics (e.g., age, social status, needs) and context in determining lay theory use. PWE and colourblind theory, both of which can serve as justifiers of inequality in a seemingly egalitarian society, seem to be especially good candidates for having at least two intergroup meanings (social equaliser and justifier of inequality) and for being used in variable ways by people and across contexts. Below, we will mainly focus on the PWE and, to a lesser degree, the colourblind theory.

PROTESTANT WORK ETHIC

A pervasive lay theory across many cultures is the Protestant work ethic, which is often captured by proverbs such as *The early bird gets the worm* and *Madruga y veras, trabaja y tendras* (*Wake up early and you will see; work and you will have*). Essentially, this is the lay theory that “people who work hard succeed” (e.g., Crandall, 1994; Quinn & Crocker, 1999). Our initial examination of PWE began in the US, where we suggest it has at least two intergroup meanings (e.g., Levy et al., 2006b). The “justifier of inequality” meaning is the most common way that PWE is discussed in the social psychological literature on intergroup relations. PWE has long been discussed as an ingredient in White racism toward Blacks; Blacks are

seen as not conforming to the work ethic (not working hard enough) and thus deserving disadvantage (e.g., Kinder & Sears, 1981; McConahay & Hough, 1976). PWE is associated with arguments justifying inequality and differential treatment of a variety of less successful or disadvantaged groups (e.g., Crandall, 1994, 2000; Katz & Hass, 1988; Quinn & Crocker, 1999; Somerman, 1993). Akin to other work on lay theories and intergroup relations, the aforementioned work has been conducted with college-age students who tended to be White.

Levy et al. (2006b) noted that PWE also has an egalitarian meaning indicating that people from all social categories are basically equal and can all succeed. Popular books in the US, such as “rags to riches” stories, suggest that hard work is a social equaliser (e.g., Heykoe & Hock, 2003; Liberman & Lavine, 2000). Indeed, there are some findings in the social psychological literature showing that PWE is unrelated to intolerance (Biernat, Vescio, & Theno, 1996; Katz & Hass, 1988; Monteith & Walters, 2000), which could reflect PWE having both a social equaliser and justifier of inequality meaning.

Even when both meanings of PWE are prevalent in a given culture, they are not necessarily equally emphasised in all environments or for all people living in those environments; nor are they necessarily responded to in the same way by all people. We hypothesised that US children are predominately exposed to the egalitarian meaning of PWE. Parents, teachers, and others in children’s immediate environment likely communicate the social equaliser meaning through stories such as the *Little Engine that Could*. This is a classic story of a little engine who, through diligent effort, was able to reach a valued outcome that appeared insurmountable. If children accept the PWE message, as taught in such books as well as by their teachers (or other significant adults) encouraging all students to work hard, they will likely believe that effort can be something that equalises people of different social categories. Everyone can put forth effort and succeed, so everyone is equal. Children of all groups are likely motivated to endorse the egalitarian meaning of PWE because it suggests a pathway (effort) to success for each child (e.g., see McClelland, Atkinson, Clark, & Lowell, 1953, regarding achievement motive). As children reach adolescence, they are expected to become increasingly knowledgeable about the justifier of inequality meaning of PWE such that they use whichever meaning of PWE is salient or personally relevant, as elaborated below.

In this section, we review our work with children and adults from numerical majority and minority groups in the US, showing similarities and differences in their uses of PWE. We will also describe our work with members of the numerical majority in Colombia, a culture in which we anticipated that the justifier of inequality meaning is largely unrepresented.

PWE's intergroup implications among numerical majority group members in the US

Prior research, which has been conducted with mostly White college students as noted, demonstrated that PWE often has a justifier of inequality meaning (if any meaning was revealed). Also as noted, we suggest that children initially learn the social equaliser meaning of PWE, which remains available to them in adulthood. During adolescence, we propose that the justifier of inequality meaning increasingly enters the immediate environment, particularly of adolescents of the more advantaged groups (e.g., Whites). Adolescence is a critical developmental period with changes in social identities and roles (e.g., Higgins & Parsons, 1983; Ruble, 1994). While developing their identity and focusing on their place in society, relatively advantaged adolescents seem increasingly likely to hear PWE being used to justify their position in the social system; further, they likely have greater motivation to justify their position. Late adolescents should be knowledgeable about both meanings of PWE and use whichever one is most salient or personally relevant in a particular context or life period.

Developmental studies. Following from these predictions, our initial work examined whether White children would endorse the egalitarian meaning of PWE more than White adults, who presumably have more social and cultural experience with PWE as a justifier of inequality, and a greater motivation to use that meaning. We studied three different age groups of Whites from roughly similar socioeconomic backgrounds: late grade-school students (approximately 10 years old), early high-school students (approximately 15 years old), and college students (approximately 20 years old; Levy et al., 2006b, Study 1). We selected 10-year-olds as the youngest age group because they have mastered the key developmental milestones including the abilities to perceive similarities and differences within and across groups, as well as knowledge about group stereotypes (e.g., Doyle & Aboud, 1995; McKown, 2004).

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 behaviour towards a historically disadvantaged group in US society, Blacks (e.g., Katz & Hass, 1988; Kinder & Sears, 1981; McConahay & Hough, 1976). The measures of PWE (items assessing the belief that hard work leads to success) and egalitarianism (items assessing the belief that people should be treated equally) from Katz and Hass (1988) were modified slightly to be appropriate for all age groups in our study. Our measure of desired social distance was drawn from measures used with adults (e.g., Esses & Dovidio, 2002) and children (e.g.,

Karafantis & Levy, 2004), in which participants report the extent to which they would like to live near or be friends with Blacks.

As depicted in Figure 2, for the younger samples PWE was related positively to egalitarianism and negatively to desired social distance from Blacks, 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 Blacks), consistent with past mixed findings and with the expectation that adults do not solely use PWE in an intolerant way. The findings remained significant when statistically controlling for participants' levels of social concerns and self-esteem.

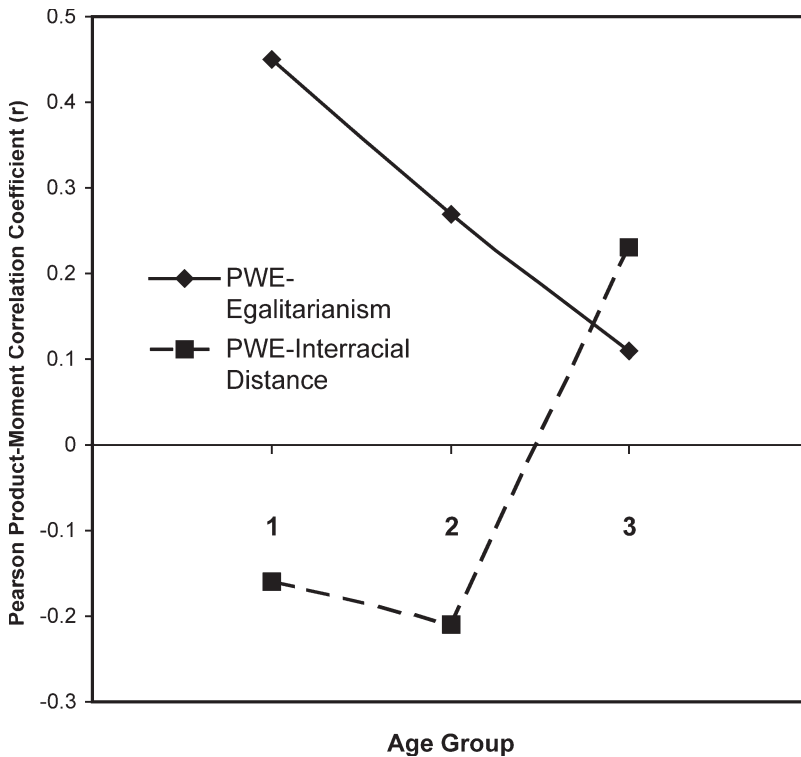


Figure 2. Correlation of egalitarianism and interracial distance with the Protestant work ethic, among elementary school, high school, and college students. PWE = Protestant work ethic; Age Group 1 = 10- to 12-year-old children; Age Group 2 = 14- to 16-year-old adolescents; Age Group 3 = approximately 20-year-old college students. From Levy et al. (2006b, Study 1).

This study showed that PWE does indeed have an egalitarian meaning and that PWE's meaning shifts with age. To add to our understanding of the uses of PWE, we subsequently recruited a sample of White late high-school students (on average, 17 years old) and adult community members (on average, 42 years old, who lacked a 4-year college degree) who were matched to the previous age groups on socioeconomic background. They were asked to complete a brief survey containing the PWE and egalitarianism measures. We expected that White late adolescents and adult community members who represented a less select group of adults than college students would be knowledgeable about the justifier of inequality meaning of the PWE; thus, the correlation between egalitarianism and PWE for both of these age groups should be similar to previous findings with college-age students. To elaborate, although adolescents are developing their identities and learning about their places in the social structure throughout high school, late high school is when students are approaching the transition to college and the work force and, thus, their future prospects are increasingly being evaluated and compared. The justifier of inequality meaning can be used by relatively advantaged group members to take credit for their own (or their group's) accomplishments and to blame members of other groups for their disadvantage. Thus, the justifier meaning should not be specific to college students. We indeed found that the correlation between PWE and egalitarianism was non-significant for these non-college samples (Levy & Karafantis, 2005; Levy et al., 2006b).

To summarise, the positive correlation between the PWE and egalitarianism observed in late grade school and early high school became non-significant, not at college, but at the end of high school as adolescents approached the competition for jobs and college placement; it also remained non-significant among an older adult community sample. This pattern of findings is consistent with the proposition that PWE primarily has an egalitarian meaning among children, who presumably have less exposure and less use for its justifier of inequality meaning.

We next aimed to provide a more definitive test of whether PWE relates to egalitarianism among White youth. Using the same three age groups used in the original study, we expected that activating PWE should trigger greater levels of egalitarianism among 10- and 15-year-olds, who assumedly construe PWE in terms of its egalitarian meaning, than 21-year-olds, who are presumably also familiar with PWE's inequality-justifying associations (Levy et al., 2006b, Study 2). Participants were randomly assigned to read either a pro-PWE or anti-PWE induction article. Each article described the same allegedly credible and extensive psychological research; however, the articles differed in that they concluded that the findings either supported or opposed PWE. For example, the articles summarised "one of the most

important studies” in which 200 children from across the US were closely studied for 30 years, beginning when the children were 6 years of age. To bolster the supposed results, participants learned that the findings were replicated in many studies at different prestigious universities and in different countries. The article concluded as follows: “the important thing to keep in mind is that no matter what kind of study that psychologists have done on this topic, they have come to the same conclusion: ‘people who work hard do well and have a successful life’ (pro-PWE) or ‘people who work hard are not always successful’ (anti-PWE).” As expected, after reading the articles, participants in the pro-PWE condition endorsed PWE to a significantly greater extent than did participants who read the anti-PWE article. This effect was obtained among each age group. Hence, the inductions were successful.

The impact of each induction was then assessed with the measure of egalitarianism used in our earlier study. As depicted in Figure 3, temporarily activating pro- (vs anti-) PWE seemed to temporarily increase egalitarianism

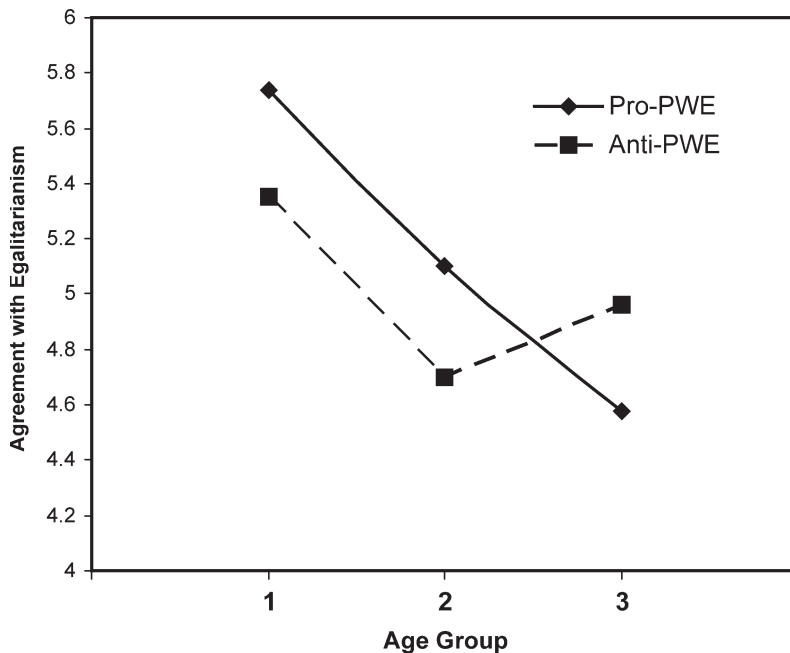


Figure 3. Difference in endorsement of egalitarianism for participants assigned to read articles supporting (Pro-PWE) versus undermining (Anti-PWE) the Protestant work ethic, among elementary school, high school, and college students. Age Group 1 = 10- to 12-year-old children; Age Group 2 = 14- to 16-year-old adolescents; Age Group 3 = approximately 20-year-old college students. From Levy et al. (2006b, Study 2).

among younger participants, who presumably had been predominately exposed to the egalitarian meaning of PWE and who thus construed PWE in egalitarian terms. In contrast, among the oldest group, those assigned to read the pro-PWE article subsequently reported significantly lower levels of egalitarianism than did those assigned to read the anti-PWE article. Replicating other past work on PWE among college students (e.g., Somerman, 1993), this latter finding suggests that this sample of college students largely construed PWE in terms of the intolerant, or justifier of inequality, meaning. The effects remained significant when taking into account participants' self-esteem and enjoyment and understanding of the articles.

Findings from our studies as well as the prior work with White adults, then, suggest that PWE is negatively related to or non-significantly related to indicators of tolerance. There does not yet appear to be evidence that adults use PWE in an egalitarian way, even some of the time. The egalitarian meaning of PWE is potentially applicable to all groups, for example, in suggesting that their hard work will not be wasted but rather will bring about success (e.g., see McClelland et al., 1953) and in supporting psychological and social needs (e.g., bolstering egalitarian values, facilitating interpersonal relationships; see Levy et al., 2006a). Hence, we have sought evidence that White college students do, at times, endorse an egalitarian meaning of PWE.

In one study (Levy & Karafantis, 2005), White participants across all 4 years of college were asked to explicitly report the extent to which they use PWE in different ways such as "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 equaliser] or '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]." Across years in college, White students, on average, report stronger use of the egalitarian meaning than the denial of providing racial preferences meaning. Although such a measure has its disadvantages (e.g., eliciting socially desirable responses), the findings suggest that both meanings are likely available and used by adults.

Life transition studies. Our social-developmental perspective suggests that personal characteristics (e.g., motivations) and context (e.g., life transitions) help to determine whether Whites in late adolescence and adulthood use the social equaliser or justifier of inequality meaning of PWE. We have begun to test the hypothesis that the justifier of inequality meaning takes a more prominent role during life transitions that pose a threat to the self or one's group.

To elaborate, social-developmental research on life transitions (e.g., Higgins & Parsons, 1983; Ruble, 1994) suggests that when people prepare for an important transition in which they have little information, they typically experience feelings of uncertainty and anxiety, motivating them to gather knowledge. For instance, after learning of their pregnancy, women reported seeking out greater information about pregnancy, which was presumably available all along, but less attended to (Deutsch, Ruble, Fleming, Brooks-Gunn, & Stangor, 1988). When preparing to undergo a transition such as to work force or graduate school, potentially solidifying or jeopardising their place in the social system, Americans are likely more attentive to information about group-based inequalities in outcomes and aspects of competition along racial lines (such as race-conscious policies). Rather than focusing on effort as something that can equalise people of different social categories, members of relatively advantaged groups may find it more self-serving to view effort as an attribute that differentiates groups; thus, PWE may now be increasingly associated with arguments justifying an unequal status quo.

As a step towards testing these hypotheses, in the aforementioned study we examined White students' endorsement of the intergroup meanings of PWE according to their year in college. As expected, compared to college students in years one to three, college students in their fourth year, when applications to jobs and graduate school are due, reported weaker endorsement of the social equaliser meaning and greater endorsement of the justifier of inequality meaning of PWE (Levy & Karafantis, 2005).

In a follow-up experiment, we (Levy & Karafantis, 2005) examined students' spontaneous use of the justifier of inequality meaning of PWE after they were led to think about information hypothesised to be relevant to the transition to educational and work environments. Prior work suggests that US Whites and Asians may view race-conscious or affirmative action policies as harming their educational and work prospects and, thus, unfairly benefiting members of other groups such as Blacks and Latinos (e.g., Bobo, 1998). Therefore, we predicted that reading about the implementation of affirmative action policies, which were written to clearly benefit Blacks and Latinos over other groups, would lead White and Asian students to lean towards the justifier of inequality meaning of PWE (e.g., denying the need for special preferences to disadvantaged groups).

White and Asian college participants were told that a wide range of American colleges were considering several new college admission policies. Half were randomly assigned to read a description of "a radical extension of affirmative action to college campuses" in which "40–50% of the students who are admitted to certain colleges each year for the next four years [will] be Black or Latino". The other half read a description of "a radical extension of racial profiling to college campuses" in which "30% of qualified

Black and Latino male applicants will be randomly selected for a background check before being accepted into college". The racial profiling policy was expected to trigger the social equaliser meaning of PWE. Thus, participants were randomly assigned to review an "undesirable" college admission proposal (affirmative action or racial profiling) in which the Protestant work ethic (albeit different meanings) could be used to spontaneously rebut them. Participants did indeed disagree with both policies and to similar degrees.

As predicted, participants in the affirmative action condition reported weaker agreement with the egalitarian meaning and greater agreement with the justifier of social inequality meaning of PWE, relative to those in the racial profiling condition. Hence, thoughts about preferential treatment of other groups appeared to trigger an interpretation of PWE veering away from the social equaliser meaning and towards the justifier of inequality meaning. Participants' average agreement with the PWE statements at the end of the experiment was similar in the two conditions. Thus, the *meaning* of PWE shifted, not *endorsement* of PWE.

Similarities and differences in PWE's intergroup implications across groups in the US

The evidence reviewed thus far indicates that PWE has both the justifier of social inequality and the social equaliser meaning among a relatively advantaged group in the US. We expected that both meanings are available in US culture; thus, members of all groups are expected to have some exposure to and awareness of both meanings. To test this idea, we aimed to trigger the justifier of inequality meaning of PWE among racially and ethnically diverse groups of college student participants. When the justifier of inequality meaning of PWE is salient, it should produce a decrease in reported social tolerance (e.g., towards members of lower status groups such as homeless persons) among all group members (e.g., college students).

In one experiment (Levy et al., 2006b, Study 3), college student participants were instructed to engage in a "thought exercise" in which they first considered the same statement representing the Protestant work ethic ("people who work hard succeed") and then were asked to write down their thoughts about the statement in two different ways. Half of the participants were asked to think about instances of others using "people who work hard succeed" to justify their views: "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 other half of the participants received the definition instructions: "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.” We expected that thinking about others making arguments (e.g., that disadvantaged group members are to blame for their disadvantage) would trigger the justifier of inequality meaning.

There were also two control conditions in which participants 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 each of the thought exercises, they were instructed to write down their thoughts. Importantly, participants in the conditions did not differ significantly in time spent or number of words generated on this task. Also, participants’ average agreement with the PWE statements at the end of the experiment was similar in the two PWE conditions, consistent with the fact that these participants were instructed to think about that same PWE statement. After the inductions, they completed the measure of egalitarianism that we have been using, as described earlier.

As predicted and as depicted in Figure 4, participants assigned to the PWE-justification condition subsequently reported lower levels of egalitarianism than did those assigned to the PWE-definition condition. Among the control conditions, in contrast, there was no significant difference in reported egalitarianism between those who received the justification and definition instructions regarding the “absence makes the heart grow fonder” statement. Merely thinking about people using a lay theory in an argument, then, does not decrease levels of egalitarianism.

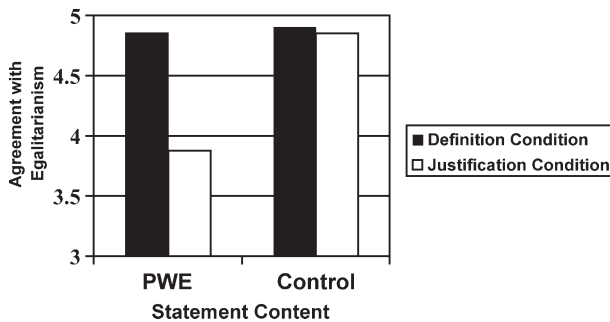


Figure 4. Endorsement of egalitarianism for college students assigned to think about statements of differing content, reflecting either PWE (Protestant work ethic) or a control topic (“Absence makes the heart grow fonder”), under instructions to focus either on how others have used the statements to justify their views (justification conditions) or on what the statement means (definition conditions). From Levy et al. (2006b, Study 3).

In a follow-up experiment, we (Levy et al., 2006b, Study 4) used the same justification and definition thought exercises with PWE, but this time assessed their impact on actual intergroup behaviour — monetary donations to a homeless shelter. Borrowing from successful prior inductions promoting greater helping (e.g., Batson, Sager, Garst, Kang, Rubchinsky, & Dawson, 1997; Levy et al., 2002), participants read about a local homeless shelter and were given the opportunity to donate money to help homeless persons, an outgroup for the racially and ethnically diverse college participants. Participants received course credit for their participation but also received a surprise \$2 dollar payment so that they would have money on hand. As predicted, participants assigned to the justification condition subsequently donated significantly less money than did those assigned to the definition condition.

In this experiment and in the one previously described using the same design, we also coded participants' free responses — the thoughts they listed while thinking about the definition of PWE or PWE used in arguments. As expected, participants in the justification condition mentioned significantly more instances of blaming people for their disadvantage (e.g., “a poor person on the street who is begging for money . . . hasn't worked hard to succeed, and therefore has suffered the consequences”) whereas participants in the definition condition were significantly more likely simply to restate the PWE (e.g., “people who work hard by putting in time and effort succeed and those who don't will not succeed”).

Thus, a wide variety of adults appear exposed to PWE used in arguments that justify inequality. However, though aware of both meanings of PWE, the justifier of inequality meaning seems less likely to be highlighted in the immediate environments of members of relatively disadvantaged groups in the US, regardless of age. After all, that meaning of PWE, while justifying advantaged group members' place in society, by extension justifies the place of disadvantaged group members. It also appears to be tied to advantaged group members' denial of the persistence of racism and of the need for policies that protect groups which have historically been discriminated against.

Therefore, we predicted that the justifier of inequality meaning of PWE should be less strongly endorsed by members of disadvantaged groups relative to more advantaged groups. There should not be differences for the egalitarian meaning as a function of group membership or status since the egalitarian meaning is generally applicable to all groups in suggesting a positive pathway (work) to success and in supporting psychological and social needs (e.g., bolstering egalitarian values), as noted earlier. In one study (Levy, Ramirez, & Velilla, 2005b), we tested these hypotheses with US Black, Latino, and White college students. We included the relatively direct measures of the intergroup meaning of PWE described earlier. Blacks and

Latinos did indeed agree less with the justifier meaning of PWE compared to Whites, and there were no significant differences in ratings of the equaliser meaning of PWE. We also included general measures of PWE and egalitarianism that we have used repeatedly in our studies. For Blacks and Latinos, PWE was positively related to egalitarianism, suggesting that PWE is predominately endorsed as a way to facilitate social tolerance. For the White sample, however, PWE was unrelated to egalitarianism, consistent with past findings and with the expectation that they use PWE both as a social equaliser and as a justifier of inequality.

To test our prediction that US Black and Latino children would also focus predominately on the egalitarian meaning of PWE, we also collected data with children from these groups, ages 11 to 13 (Levy et al., 2005b). Using the measures described previously, we found that PWE and egalitarianism were indeed positively correlated.

In summary, adults and children from disadvantaged groups as well as children of advantaged groups appear, on average, to focus less on the justifier of inequality meaning of PWE than do adults from advantaged groups. It is possible that some members of disadvantaged groups (and also of advantaged groups) reject PWE altogether because of their familiarity with the intolerant meaning, which is an important issue requiring further study.

PWE's intergroup implications among the numerical majority group in Colombia

Our findings, so far, are consistent with our social-developmental perspective that lay theory use is determined by the dynamic interaction among people's characteristics and contexts. The perspective suggests it would be useful to examine culture broadly, and ways that cultures shape lay theories such as PWE. 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 do US adults (e.g., Betancourt & Weiner, 1982; Crandall & Martinez, 1996).

We aimed to show that PWE does not obtain the justifier of inequality meaning with age (experience) in Colombia, but continues to have an egalitarian meaning. We (Levy et al., 2005b) recruited three age groups (11-, 14-, and 17-year-olds) roughly similar to the US sample of Whites used in our original developmental studies (Levy et al., 2006b). We focused on the numerical majority group in Colombia, Mestizos, and used a similar procedure to that used in the US developmental studies. We translated and back-translated the measures into Spanish, and the internal reliability of the

measures was comparable to the earlier US sample. As predicted, in Colombia the correlation between PWE and egalitarianism was significantly positive and similar across the age groups, suggesting that, among these age groups, PWE consistently relates to egalitarianism. In contrast, as described earlier, among US Whites the correlation between PWE and egalitarianism went from significantly positive among younger participants (10- and 15-year-olds) to non-significant among older participants (17-, 20-, and 42-year-olds).

In the Colombia and US developmental studies, we also assessed a lay view that we expected to have one intergroup meaning across cultures, with an unequivocal, stable relation to intolerance among numerical majority group members. Social dominance orientation (SDO; e.g., Pratto, Sidanius, Stallworth, & Malle, 1994) 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). Accordingly, across the different age groups and cultures, SDO should be negatively correlated with egalitarianism. Indeed, we found that the correlation between SDO and egalitarianism was consistently negative across age groups for both Colombian Mestizos and for US Whites. Evidence that egalitarianism related to SDO consistently across members of the numerical majority group across cultures, while its relation to PWE differed among numerical majority groups members by culture, helps to rule out the explanation that being a member of the numerical majority simply explains the use of PWE in an intolerant way.

To summarise this section, PWE, in the US, is more than a justifier of inequality, as past work has indicated. Rather, PWE has implications for both intolerance and tolerance. Consistent with the social-developmental perspective, lay perceivers' personal characteristics (e.g., age, race, psychological needs) and the contexts in which they interact help to determine lay theory use. In the US, children tend to use the social equaliser meaning of PWE, whereas adults use either that meaning or the justifier of inequality meaning, whichever is most salient or personally relevant. Also, consistent with the social-developmental perspective's emphasis on time periods, one meaning of PWE (justifier of inequality) was shown to dominate during a particular life transition (preparing to transition to the work force or graduate school).

COLOURBLIND THEORY

Similar to the PWE, the colourblind theory is another lay theory that seems to have at least two intergroup meanings (social equaliser and justifier of inequality), used in variable ways by different people and in different contexts. The colourblind theory is pervasive in many environments, and it

is captured by sayings such as *You can't tell a book by its cover* and *All that glitters is not gold*. The colourblind theory essentially suggests that social category information such as race is superficial, irrelevant, and an uninformative base to make judgements of people (e.g., Allport, 1954; Schofield, 1986).

Researchers have long suggested that the colourblind theory should facilitate social harmony in the racially diverse US society. It is captured by the “melting pot” metaphor, which suggests that differences between people immigrating to a country such as the US eventually melt away, such that there is “no longer any visible or psychological basis for prejudice” (Allport, 1954, p. 517). A large body of research and theorising in both developmental and social psychology suggests that the colourblind theory facilitates social tolerance in the US by diverting people’s attention from race to commonalities across people or to the uniqueness of individuals (e.g., Jones & Foley, 2003; Houser, 1978; Katz, 1973; Katz & Zalk, 1978; Levy, West, Bigler, Karafantis, Ramirez, & Velilla, 2005c; Wolsko, Park, Judd, & Wittenbrink, 2000).

Nonetheless, the colourblind theory may not simply facilitate social tolerance. It may facilitate intolerance by glossing over the rich histories of the less dominant cultures, and by underestimating and ignoring past and present US racism (e.g., Jones, 1997; Neville, Lilly, Lee, Duran, & Browne, 2000; Schofield, 1986). In a colourblind (or race-neutral) environment, discrimination not only should not exist—it cannot exist. Yet race and other status characteristics do affect people’s lives. Therefore, when racism occurs, the colourblind theory can be used to justify inaction through denial, thereby helping to maintain the current power structure and preserving the privileges of the dominant group (e.g., Jones, 1997; Neville et al., 2000; Schofield, 1986).

Applying our social-developmental perspective, the egalitarian meaning of the colourblind theory is likely pervasive in the immediate environment of US children of all groups. Parents, teachers, and other significant adults likely encourage children to treat others equally and discourage them from teasing and excluding others based on outward appearances (e.g., gender, race, body type; see e.g., Killen, Lee-Kim, McGlothlin, & Stangor, 2002). Indeed, the egalitarian meaning of the colourblind theory is captured by children’s stories such as “New Neighbors” from the popular Berenstain Bears series in the US, in which the bear family learns that, despite differences in appearance, they are quite similar to the panda family, and enjoys being friends with them. The egalitarian meaning of the colourblind theory is potentially emphasised and applicable to adults of all groups as well, for example, in suggesting that they will be treated fairly and in supporting their psychological and social needs (e.g., bolstering egalitarian values, facilitating interpersonal relationships; see Levy et al., 2006a).

Even so, similar to our theorising about the age at which the intolerant meaning of PWE increasingly enters the immediate environment, we suggest that, during adolescence, relatively advantaged adolescents are increasingly exposed to the colourblind theory being used to justify their place in the social system; that is, to deny that other groups are disadvantaged and facing racism.

Below, we review evidence in the US that the colourblind theory is related to social tolerance, particularly among children (across races), and then discuss evidence that it also is related to intolerance, particularly among adults in the numerical majority group. We then briefly describe the findings of a study in which we compared lay theory use among a racially diverse group of children and adults.

As noted, one way that the colourblind theory may facilitate social tolerance is by turning people's attention towards the universal qualities of people instead of social group membership. In one supportive experiment, Houser (1978) examined the effects of viewing films that suggested that "appearance or colour should not be considered important in relating to others" (p. 119) on the prejudice of 5- to 9-year-old racially and ethnically diverse US children (Black, Mexican, Asian, and White). One film depicted the story of two puppets who were best friends until they realised that one had stripes and the other had spots. The toymaker reunited the friends by emphasising their similarities, namely that they were both created by him. Although the film clips were brief (each 10–15 minutes), children who watched either or both films, compared to children who did not view any films, assigned more positive (e.g., hardest worker) and less negative (e.g., steals) attributes to drawings of Black, Asian, and Latino children, relative to drawings of White children.

The positive relation between the colourblind theory and greater social tolerance has also been supported by several experiments in which children's attention was directed to individual differences within a group (e.g., Katz, 1973; Katz & Zalk, 1978). For example, Katz (1973) trained 7- and 11-year-old Black and White US children to attend to the unique characteristics of people. In one condition, the uniqueness of individuals within a racial group was highlighted by having children associate names with photographs of children of a different race. In the other condition, children were explicitly prompted to determine whether pairs of photographs were the same (thus to attend to individual differences). Both experimental conditions led to reduced reported social distance and prejudice among both Black and White children of both age groups studied, when compared to a control condition in which children simply viewed the photographs.

Several recent experiments (e.g., Jones & Foley, 2003) have used a combination approach in which attention is diverted from social group

category information to how people are both similar and unique (*all people are the same in a way, but each person is also unique*). In one experiment, Levy et al. (2005c) had Black and Latino children, 11 to 14 years old, read two science readers (one about the weather, the other about recycling), which featured an equal number of light- and dark-skinned males and females. For example, in a scene in the “weather” book in which the depicted children appear frightened by thunder and lightning, the similar–unique combined message was: “All humans are the same. Everyone gets scared sometimes, but each person also is a unique individual. Different things scare different individuals.” Children who were randomly assigned to the control condition read only about the main topic of the book (e.g., weather). Children in the colourblind-relevant condition reported greater levels of egalitarianism and greater desired social closeness to unfamiliar White peers compared to those in the control condition.

The role of the colourblind theory in intergroup relations has also been investigated with adult (generally White) participants. Because we hypothesise that adults are likely familiar with both proposed meanings of the colourblind theory and use the one that is most personally relevant or salient at the time, a given adult sample endorsing the colourblind theory could show tolerant responses, intolerant responses, or both.

Experiments with US White college students (Richeson & Nussbaum, 2004; Wolsko et al., 2000), using a colourblind-relevant message similar to the one just described with children (e.g., Jones & Foley, 2003; Levy et al., 2005c) yielded tolerant and intolerant responses. Participants read a half-page essay suggesting that “intergroup harmony can be achieved if we recognise that at our core we are all the same, that all men and women are created equal, and that we are first and foremost a nation of individuals”, before being asked to list five reasons why adopting that view “could potentially strengthen US society” (Wolsko et al., 2000, p. 638). Participants randomly assigned to the control condition did not read an essay, but were asked to list five different thoughts, reactions, or ideas that the groups “Blacks” and “Whites” in the US brought to mind.

Demonstrating that the colourblind theory facilitates greater social tolerance, participants in the colourblind condition, relative to the control condition, reported less racial ingroup preference (Wolsko et al., 2000). However, colourblind-induced participants did not show less racial stereotyping than control participants. Also, subsequent experiments showed that colourblind-induced White participants exhibited greater implicit racial attitude bias than participants who were exposed to an anti-colourblind induction (Richeson & Nussbaum, 2004).

The intolerant or denial of racism implication of the colourblind theory has been uncovered in other work with adults (e.g., Schofield, 1986).

Neville et al. (2000) directly tested the intolerant aspect of the colour-blind theory through the development of the Colour-Blind Racial Attitudes Scale (CoBRAS). This scale consists of items tapping a lack of awareness of racial privilege (e.g., “White people in the US have certain advantages because of the colour of their skin” [reverse-scored]), blatant racism (e.g., “Social problems in the US are rare, isolated situations”), and institutional racism (e.g., “Due to racial discrimination, programs such as affirmative action are necessary to help create equality” [reverse-scored]). Studying predominately White US college students, and also community members, Neville et al. found that greater agreement with the CoBRAS was positively and significantly related to negative attitudes toward Blacks as well as negative attitudes towards race and gender equality.

Taken together, results from the above studies suggest that the colourblind theory may have two opposite intergroup implications. The colourblind theory seemed to promote greater social tolerance among children of diverse groups in the US, while both the tolerant and intolerant aspects of the colourblind theory were revealed among samples of predominately White US adults. Because these studies sometimes tested different aspects of the colourblind theory (drawing attention to cross-group similarity, individual differences, or both), it is important to examine the tolerant and intolerant implications of the colourblind theory while defining and assessing it in a consistent manner.

We (Levy, Karafantis, & Velilla, 2005a) have begun to address these issues in research with participants of varying ages and races. US Black and White adults (on average, 22 years old) and Black and White children (on average, 13 years old) completed a measure of egalitarianism from Levy et al. (2005b) and a measure of the colourblind theory in which they rated their agreement with items such as “People’s race or ethnicity is not useful information about the kind of person they are”. As noted earlier, we predict that the social equaliser meaning of the colourblind theory is available in the immediate environment of Black and White children. For adults, we expected that Whites receive greater exposure to and are more receptive to the “denial of racism” meaning of the colourblind theory than Blacks because it is more self-serving to them, on average.

The correlation between the colourblind theory and egalitarianism was significantly positive for both age groups of Black participants, suggesting that the colourblind theory seems to have an egalitarianism meaning across ages. However, for Whites, the correlation between colourblind theory and egalitarianism was significantly positive among the children and non-significant among the adults, consistent with our theorising that with age, Whites are increasingly familiar with the denial of racism meaning of the colourblind theory and are more receptive to it.

Among the college students, we have begun to look in more detail at how the colourblind theory is used. In one US study, we compared the responses of Whites to Blacks and Latinos, two of the largest racial and ethnic numerical minority groups in the US (Levy et al., 2005a). Consistent with our previous predictions, we expected that the social equaliser meaning of the colourblind theory would be endorsed by all groups, while the denial of racism meaning of the colourblind theory should be less strongly endorsed by Black and Latinos relative to Whites. We included relatively direct measures of the intergroup meanings of the colourblind theory, similar to measures used in our work with the PWE (Levy et al., 2005b). A sample item is: "When you say things like 'Race doesn't matter', tell us the extent to which you mean this: 'Race doesn't matter because racism is not really a problem in the US anymore' [denial of racism meaning] or 'Race doesn't matter because people from different groups are all equal in worth and should be given equal treatment regardless of the colour of their skin' [social equaliser meaning]." Indeed, Blacks, Latinos, and Whites did not differ in their endorsement of the egalitarian meaning of colourblind theory. Also in line with our hypotheses, Blacks and Latinos agreed less with the denial of racism meaning of colourblind theory compared to Whites. It should also be mentioned that, in this study, we included a measure of the degree to which people identified with their ingroup, expecting that the findings would be accentuated for participants with stronger ingroup identifications. Level of identification was not significantly related to their endorsement of either meaning of the colourblind theory. Since all groups reported relatively high levels of group identification, our ability to detect differences was limited.

In summary, the colourblind theory appears to have both a tolerant and intolerant meaning in the United States. In keeping with the social-developmental perspective, the meaning depended on the lay perceivers' personal characteristics (e.g., age, race) and context.

IMPLICATIONS AND FUTURE DIRECTIONS

Initial support for a social-developmental perspective

At the outset, we proposed a social-developmental perspective that builds on a large body of findings on lay theories in intergroup relations as well as on interactionist theories of social behaviour (ecological, self-categorisation, and social identity) from developmental and social psychology. We suggested that an integrative social-developmental perspective that takes into account the dynamic interaction between people's characteristics and the many nested environments in which they live would help expand the understanding of the nature and role of lay theories in intergroup relations. We then reviewed research on PWE and the colourblind theory with

children and adults from different racial, ethnic, and national groups, showing that a single lay theory can have a tolerant and intolerant meaning. Further, perceivers' use of one versus the other meaning seems to be determined by the salience or personal relevance of that meaning in a particular context or life transition.

Although more parsimonious alternative interpretations of lay theory use are plausible, none seems to fully account for the growing set of findings for PWE and the colourblind theory as well as does a social-developmental perspective. As one example, the pattern of findings does not point to a simple age- (or cognitive sophistication) differences explanation in how PWE or the colourblind theory is used in different ways. Among US Whites, children generally use the egalitarian meaning more than adults, while adults generally use the intolerant meaning more than children (regarding PWE, Levy et al., 2006b, Studies 1 and 2; regarding colourblind theory, Levy et al., 2005a); however, these age differences do not occur in all settings. Adults' use of the intolerant meaning of PWE, for example, is triggered by thinking about others using PWE to support arguments (Levy et al., 2006b, Studies 3 and 4) and by motivational aspects of a competitive life transition (Levy & Karafantis, 2005). White adults endorse the egalitarian meaning of the PWE (Levy et al., 2005b) and colourblind theory (e.g., Levy et al., 2005a; also see Wolsko et al., 2000), and likely communicate that meaning to children. Further, a simple age-differences explanation does not apply to US Blacks and Latinos, who seem to predominately subscribe to the egalitarian meaning of both PWE (e.g., Levy et al., 2005b) and the colourblind theory (e.g., Levy et al., 2005a) regardless of age.

A race- (or social status) differences explanation also does not fully account for findings thus far for either lay theory. Both the PWE and colourblind theory appear to be used in similar ways among US children of different races, with studies showing an egalitarian use of PWE for US Black, Latino, and White children (Levy et al., 2006b; Levy et al., 2005b) and of the colourblind theory for a diverse group of US children (e.g., Houser, 1978; Katz, 1973; Levy et al., 2005c). Further, differences in use of PWE among adults as a function of race are limited to certain contexts. Both US Black and White adults endorsed the egalitarian meaning of PWE (Levy et al., 2005b) and the colourblind theory (e.g., Levy et al., 2005a) to a similar degree, and adults from different racial and ethnic groups can be led to think about the intolerant meaning of PWE, with resulting reductions in their egalitarianism and monetary donations to a homeless shelter (Levy et al., 2006b, Study 3 and 4). Additionally suggesting that the findings cannot be reduced to differences as a function of social status, adults in the numerical majority group in Colombia (Mestizos) tend to use the egalitarian meaning of PWE, whereas adults in the numerical majority group in the US

(Whites) tend to use both the egalitarian and justifier of inequality meaning of PWE.

Thus, the aforementioned alternative explanations for the nature of lay theory use across and within groups (e.g., age, race) do not support the findings on PWE and the colourblind theory. Our proposed social-developmental perspective is consistent with the findings, although not unequivocally so. We are at the early stages of testing the fit of this perspective; hence, more work is needed. Below, we spell out several lines of future inquiry.

Some remaining issues for the study of PWE and the colourblind theory

Greater investigation of the social identification aspect of the proposed social-developmental perspective is needed. Our perspective builds on social identity and self-categorisation perspectives, which highlight the impact of the dynamic interrelation between people's multiple social identities and context on people's motivational states and intergroup behaviours (e.g., Abrams & Hogg, 1988; Turner et al., 1987). Yet work on PWE and the colourblind theory, including our own, has yet to focus on the salience of a particular social identity or degree of social identification; instead, work to date has focused on group membership, which does not take into consideration the salience or importance of that group identity. In one study comparing US Whites', Blacks', and Latinos' uses of different intergroup meanings of the colourblind theory (Levy et al., 2005b), we did include a measure of group identification. However, group identification did not seem to impact the findings, likely due to the relatively high levels of group identification in our sample.

Yet level of group identification likely plays a moderating role in lay theory use, at least in some contexts. For example, US White early adolescents who highly identify with being White or whose White identity is made salient in a particular context may indeed be aware and use the intolerant meaning of PWE or the colourblind theory. Members of groups that have historically been discriminated against who highly identify with their group or whose group identity has been made salient may reject PWE or the colourblind theory in any form because of the potentially negative implications. Future work on these lay theories that takes into consideration people's degree of social identification in a particular context rather than simply considering people's group membership (e.g., age, social status) is needed.

Another crucial next step in applying our social-developmental perspective is the use of longitudinal and in-depth studies of the interplay between personal characteristics and contexts in impacting intergroup uses of PWE

and the colourblind theory. An important aspect of an ecological orientation is studying “development-in-context”; that is, in-depth investigations of people and their environments, ideally over time (e.g., Bronfenbrenner, 1979, 1986). We (Levy & Karafantis, 2005) have begun a longitudinal investigation of US White students as they manoeuvre their way through high school and through the transition to college and work, in an effort to explore changes in the use of PWE and colourblind theory, particularly as they unfold within the school environment. Longitudinal studies of a wide variety of groups, especially through life transitions that signal a self or group threat are also needed to understand the personal, motivational, and sociocultural dynamics that can produce shifts in the endorsement and intergroup implications of lay theories such as PWE and the colourblind theory.

Extension of social-developmental perspective to other lay theories

Beyond further testing the fit of our social-developmental perspective to PWE and the colourblind theory, tests of the generalisability of this social-developmental perspective to other lay theories is needed. A social-developmental perspective seems especially useful for examining a dynamic relation between personal characteristics and contexts in setting in motion different intergroup uses of lay theories. As suggested earlier, lay theories that are justifiers of inequality in a seemingly egalitarian society are good candidates for having more than one intergroup meaning, one that justifies intolerance and also one that supports egalitarianism.

Serving as a justifier of inequality within a seemingly egalitarian environment is just one consideration in determining whether a particular lay theory has more than one meaning. If a lay theory is salient and socially acceptable in a setting in which people have a range (i.e., tolerant and intolerant) of social beliefs, people may attempt to use that lay theory in multiple ways. For example, PWE and colourblind theory are pervasive theories in which Americans are invested; therefore, Americans may be motivated to accommodate such lay theories to their varying needs across situations and over time, rather than simply discarding the lay theories. Moreover, a lay theory would need to be somewhat vaguely and broadly defined to allow for flexibility in its implications and to appeal to people with a wide range of beliefs and goals. Further, the social and political climate would need to be receptive to different uses of that lay theory. For instance, as noted 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. Political movements or campaigns, nonetheless, could alter the conditions above by changing the receptiveness of a culture

to a particular intergroup meaning of a lay theory (see Hong et al., 1999, 2003).

Given the above considerations, other lay theories likely have more than one intergroup meaning. Indeed, essentialism, a lay theory about the core qualities of a group, which has long been considered an ingredient in and justifier of intolerance (e.g., Allport, 1954; Leyens et al., 2000; Yzerbyt et al., 1997), is being shown to also relate to tolerance. An essentialist theory is pervasive in many societies and is defined as several interrelated beliefs (e.g., beliefs about the immutability, biological basis, and discreteness of a group; Haslam et al., 2002; Yzerbyt et al., 1997; see Yzerbyt et al., 2004). Some dimensions of essentialist theories (e.g., viewing sexual orientation as an immutable and biologically based) have been related to pro-gay attitudes among US adults (e.g., Haslam et al., 2002; Haslam & Levy, in press; Hegarty, 2002) but not British adults (e.g., Hegarty, 2002). Biological explanations, however, have been related to *greater* endorsement of sexism and racism among German college students (e.g., Keller, 2005) but not US college students (e.g., Haslam et al., 2002). Further, among US adults, other components of essentialist theories (e.g., viewing sexual orientation as discrete and historically invariant), have been shown to be related to anti-gay attitudes (Haslam & Levy, in press; Haslam et al., 2002). Thus, a complex picture of associations to tolerance and intolerance is emerging for essentialist theories. Research on essentialism and other lay theories with more than one intergroup meaning might fit and also benefit from a social-developmental perspective that directs research towards examining how lay perceivers' characteristics interact with the environments in which perceivers are nested, to impact lay theory use in a particular context, during life transitions, and over time. At the same time, work on essentialism is informing and expanding our social-developmental theorising.

Implications of findings for the study of lay theories in intergroup relations

Taken together, work on PWE and the colourblind theory, along with other work on lay theories with multiple intergroup uses, sheds new light on the nature and role of lay theories in intergroup relations. Research on lay theories with more than one intergroup implication suggests the potential for additional flexibility and stability not afforded to lay theories with a single intergroup implication. A lay theory can be used in more than one way across situations and over time. This flexibility provides a mechanism for the potential stability of lay theories with more than one meaning. People do not need to discard a lay theory when one of its meanings is not personally relevant or appropriate in a particular context; rather, they can

invoke the other meaning of the lay theory. Future work is needed to test these conjectures.

Research on lay theories with more than one intergroup implication also emphasises the role of psychological and social motivations in lay theory use. Guided by an intuitive scientist metaphor, lay theories have been discussed as serving epistemic functions (e.g., for reviews, see Fletcher, 1995; Furnham, 1988; Hong et al., 2001; McGarty et al., 2002; Wegener & Petty, 1998). Yet lay theories are increasingly being shown to also serve psychological and social motives, such as fostering social relationships and supporting values (see Levy et al., 2006a). A growing body of research, including our own, highlights that people use lay theories to justify their prejudice and prevailing social inequalities (e.g., Crandall, 2000; Haslam & Levy, *in press*; Keller, 2005; McGarty et al., 2002; Yzerbyt et al., 1997). Further, work on PWE and the colourblind theory, as well as work on essentialist theories, suggests that people's use of a particular meaning of a lay theory can depend on how personally useful it is in a context.

Our work, and that of others, then, is increasingly demonstrating some key differences between lay theories and scientific theories. Although lay people and trained scientists may develop and adopt theories as epistemic tools to approximate the truth, lay people appear to blatantly use lay theories in other self-serving ways (for a review, see Levy et al., 2006a). Lay people seem to use lay theories to best suit their social and psychological needs in a particular situation or over time, even using a single lay theory in opposite ways.

CONCLUSION

Lay theories are pervasive in our social world. They are powerful social filters because they are socially transmitted and shared, but also because they serve epistemic, social, and psychological needs. In this chapter, we proposed a social-developmental perspective to expand the understanding of the nature and role of lay theories in intergroup relations. The perspective builds on a large body of findings on lay theories in intergroup relations as well as on well-established and largely complementary interactionist theories of social behaviour from developmental and social psychology. This integrative social-developmental perspective suggests that lay perceivers' characteristics (e.g., age, race, psychological motivations) interact with the environments in which perceivers are nested to impact lay theory use in particular contexts, during life transitions, and over time. Using this perspective to guide our investigation of the Protestant work ethic and colourblind theory, we showed that a single lay theory can have a socially tolerant or intolerant meaning. Our review of research with a racially and ethnically diverse group of children and adults in the US,

as well as research with Colombian children and adults (Mestizos), showed similarities and differences in perceivers' uses of PWE and the colourblind theory. Children and early adolescents from all racial and ethnic groups tended to use the tolerant meanings of the lay theories. Late adolescents and adults were found to use either the tolerant or intolerant meaning, depending on the salience and personal relevance of that meaning in a context or life transition through which they were navigating. Thus, even when both meanings were prevalent in a given culture (e.g., the US), they did not appear to be equally emphasised in all environments or for all people living in those environments; nor were all people in that environment receptive to a particular meaning of the lay theories. Alternative theories suggesting differences in lay theory use based solely on perceivers' age or cognitive sophistication or solely on perceivers' race or social status cannot fully account for the findings. Much more work is needed in testing this integrative social-developmental perspective with the Protestant work ethic and the colourblind theory as well as with other lay theories. We look forward to future work in this area that will move us towards a fuller understanding of the nature of lay theories, while also contributing to a fuller understanding of the dynamics of intergroup relations.

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