



# Psychological essentialism and stereotype endorsement

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## Abstract

Research on implicit person theories shows that people who believe that human attributes are immutable (“entity theorists”) are particularly prone to endorse social stereotypes and to explain them with reference to innate factors. We argue that entity theories belong to a broader set of beliefs that represent differences between people in terms of underlying essences. New measures of three essentialist beliefs (i.e., in the biological basis, discreteness, and informativeness of human attributes) were developed in a pilot study. In the main study, these beliefs were found to covary with entity theories, and to predict the endorsement and innate explanation of stereotypes. Essentialist beliefs predicted stereotype endorsement independently of popular stereotyping-related individual difference measures, and in a way that was not reducible to the effect of entity theories. We propose that research on implicit person theories can be placed within an encompassing framework of psychological essentialism.

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Research on implicit person theories (Levy, Plaks, Hong, Chiu, & Dweck, 2001) has demonstrated the critical importance of beliefs about the nature of human attributes. People who believe that attributes are fixed versus malleable, referred to as “entity theorists” and “incremental theorists,” respectively, appear to process information in distinct ways that have profound implications for behavior and motivation. A vigorous program of research has established the role of implicit theories about intelligence (Dweck & Leggett, 1988), morality (Chiu, Dweck, Tong, & Fu, 1997a), and personality (Chiu, Hong, & Dweck, 1997b; Gervy, Chiu, Hong, & Dweck, 1999) in a wide variety of cognitive and behavioral domains and with both adults and children.

Recent work on implicit person theories has investigated their role in stereotyping and intergroup relations. Levy et al. (2001) argued that entity theorists hold a static view of human nature that deeply affects how

information about social groups is interpreted. In particular, they argued that entity theorists are especially prone to social stereotyping. In an influential paper, Levy, Stroessner, and Dweck (1998) found that entity theorists made more stereotypical trait judgments of ethnic and occupational groups, made more extreme and rapid stereotypic judgments on the basis of limited information about novel groups, and attributed stereotyped traits more to innate group properties than did incremental theorists, although they did not have greater stereotype knowledge. Entity theories also predicted stereotype endorsement independently of several stereotype-relevant individual difference variables. Later research (Plaks, Stroessner, Dweck, & Sherman, 2001) showed that entity theorists pay greater attention to stereotype-consistent information than incremental theorists. As Levy et al. (1998) note, “people’s implicit theories about the malleability or fixedness of traits affect the degree to which they engage in the processes that produce and perpetuate group stereotypes” (p. 1433).

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Beliefs in the fixedness of traits and categories have not only been a focus of research in the implicit person theory tradition, but have also been addressed in work on psychological essentialism (Gelman, 2003). This work proposes that people understand some attributes and social categories in terms of fixed, underlying, and identity-determining essences, and that such essentialist understandings may have important implications for phenomena such as prejudice. Rothbart and Taylor (1992), for example, proposed that holding essentialist beliefs about social categories amounted to viewing them as “natural kinds,” a misapprehension that exaggerates, deepens, and renders inevitable perceived differences between groups. They argued that essentialist beliefs have two main components, construing differences between people as inalterable (i.e., fixed) and inductively potent (i.e., richly informative and meaningful). By this account, a belief in the fixedness of human attributes is just one of an ensemble of essentialist beliefs that frame these attributes as informative, deeply rooted, and “natural.”

Empirical research has borne out Rothbart and Taylor's (1992) proposed links between perceived inalterability and a broader set of essentialist beliefs. Haslam, Rothschild, and Ernst (2000) showed that beliefs about the nature of social categories formed two distinct factors. A “natural kind” factor combined beliefs in the immutability, naturalness, discreteness, necessary features, and historical invariance of categories, and a “reification” factor combined beliefs in categories' informativeness, uniformity, and inherence (i.e., existence of underlying similarities). Racial, ethnic and gender categories were highly naturalized, whereas many stigmatized categories (e.g., gays, Jews, and AIDS patients) were highly reified. Haslam, Rothschild, and Ernst (2002) replicated this factor structure for individual differences in beliefs about particular social categories (e.g., women, African Americans). Thus, immutability beliefs (entity theories) covary with a diverse set of essentialist beliefs.

Essentialist beliefs about social categories have recently received a surge of interest. They have been studied in relation to a wide range of social categories such as race (Hirschfeld, 1996), ethnicity (Gil-White, 2001; Verkuyten, 2003), gender (Mahalingam, 2003), sexual orientation (Haslam & Levy, *in press*), and mental disorder (Haslam & Ernst, 2002), as well as in connection with personality attributes (Giles, 2003; Haslam, Bastian, & Bissett, 2004). Some research and theory has linked essentialist beliefs to intergroup phenomena, with Leyens et al. (2001) arguing that they underpin the tendency to selectively deny human attributes to outgroup members, but little work has directly addressed links between these beliefs and stereotyping. However, Yzerbyt, Corneille, and Estrada (2001), Yzerbyt and Rocher (2002), and Yzerbyt, Rocher, and Schadron (1997) have

proposed that essentialist theories play a major role in giving explanatory coherence to group stereotypes, and in guiding the social information processing (e.g., illusory correlation, accentuation) that produces them. Consistent with this theoretical position, Estrada, Yzerbyt, and Seron (2004) demonstrated that people who scored high on an essentialist belief scale were more likely to explain intergroup differences with reference to biological factors.

If entity theories belong to a broader set of essentialist beliefs, then it is possible that some of the findings obtained in implicit person theory research might also be obtained if essentialist beliefs were examined instead. In particular, if essentialist beliefs play a role in stereotyping, as Yzerbyt and colleagues' work indicates, then the associations between entity theories and stereotyping obtained by Levy et al. (1998) might be understood in terms of these beliefs. More radically, the stereotyping effects ascribed to entity theories by Levy et al. might be attributable to essentialist beliefs (i.e., to the whole rather than to the part). Immutability might be one element of essentialist beliefs, but other correlated elements might be equally responsible for fostering stereotype endorsement. Alternatively, entity theories might covary with other essentialist beliefs but serve as the sole “active ingredient” among them in promoting stereotyping. To determine whether entity theories are specifically responsible for stereotype endorsement, or whether a more comprehensive set of essentialist beliefs is equally or more responsible, we must replicate Levy et al.'s work using measures of entity theories and additional essentialist beliefs, and tease apart their contributions.

To this end, we conducted two studies that were closely modelled on Levy et al.'s (1998) Studies 1, 2, and 5. In a pilot study we developed new measures of three essentialist beliefs identified by Haslam et al. (2000, 2002): belief that human attributes are biologically based (i.e., “natural”), discrete (i.e., placing people in bounded types), and informative [i.e., “inductively potent” (Rothbart & Taylor, 1992)]. In the main study, these new measures, along with Levy et al.'s measure of entity theories, were used to predict endorsement of stereotypes and innate explanations of them. This study was designed to assess associations among the essentialist beliefs and entity theory scales, and to determine whether these scales predicted stereotype endorsement independently of other individual difference predictors of stereotyping, and of one another.

### Pilot study

A pilot study was first conducted to develop new essentialist belief measures and to derive stereotype content for several social categories. Participants were 60

undergraduates (39 females, 21 males), mean age 19.7, who were recruited for a study of “Beliefs about social groups” and took part for course credit.

Participants completed a two-part questionnaire. In the first part, they completed four scales that assessed beliefs about kinds of people. One of these was the 8-item implicit person theory measure employed by Levy et al. (1998), which assesses beliefs that people can or cannot change their characteristics (e.g., “Everyone, no matter who they are, can significantly change their basic characteristics”; “People can change even their most basic qualities”). Within the essentialist beliefs framework this scale assesses immutability beliefs, and we refer to it as the “Immutability” scale here. Three additional scales, closely modelled on the implicit person theory measure (i.e., containing eight similarly worded items, with four items reverse scored) assessed additional essentialist beliefs (see Appendix A). The “Biological basis” scale assessed beliefs that human attributes are biologically grounded (e.g., “The kind of person someone is can be largely attributed to their genetic inheritance”). The “Discreteness” scale assessed beliefs that people fall into discrete categories (e.g., “Everyone is either a certain type of person or they are not”). Finally, the “Informativeness” scale assessed beliefs that differences among people allow many inferences to be drawn about them (e.g., “It is possible to know about many aspects of a person once you become familiar with a few of their basic traits”). Items from the four scales were randomly ordered and rated on a 6-point scale from 1 (*strongly agree*) to 6 (*strongly disagree*).

In the second part of the questionnaire, corresponding to Levy et al.’s (1998) Study 1, participants were instructed to think about characteristics that people commonly associate with nine social categories relating to sex and gender (males, females, and homosexuals), ethnicity (Japanese, Aboriginals, and Jews), and occupation (doctors, lawyers, and politicians). They were instructed to think of as many attributes as possible for each group, whether or not they personally agreed that the attributes were in fact associated with the categories. The questionnaire provided space for 20 attributes for each of the nine categories. Participants completed the questionnaire in groups of 2–12 in a laboratory setting, under the supervision of one of the researchers. Completion typically took about 30 min.

Inspection of item–total correlations for the three new essentialist belief scales indicated that most items covaried satisfactorily. However, one poorly performing item was dropped from the Informativeness scale, leaving it with seven items. Correlations among the four scales are presented in Table 1, which reveals a pattern of modest positive associations, consistent with the view that implicit theories about the immutability of human attributes (i.e., entity theories) are linked to a broader set of essentialist beliefs about these attributes.

Table 1  
Intercorrelations among the four essentialist belief scales, pilot study

	1	2	3	4
1. Immutability	1.00			
2. Biological basis	0.26*	1.00		
3. Discreteness	0.38**	0.13	1.00	
4. Informativeness	0.25*	0.12	0.36**	1.00

\*  $p < .05$ .

\*\*  $p < .01$ .

Stereotypical attributes listed by participants were collated and classified as positive or negative. Two researchers agreed on the valence of all attributes. The six most commonly listed positive and negative attributes for each of the nine categories were then selected for use in the main study. The total number of attributes listed by participants, across the nine categories, was uncorrelated with scores on the belief scales (Immutability:  $r = -.07$ ; Biological basis:  $r = .09$ ; Discreteness:  $r = -.10$ ; Informativeness:  $r = .03$ ; all  $ps > .05$ ), indicating that stereotype knowledge is not associated with essentialist beliefs, consistent with Levy et al. (1998).

## Main study

Having developed measures of essentialist beliefs in the pilot study, and obtained preliminary evidence that they are associated with one another and with an entity theory measure, we investigated whether essentialist beliefs might predict the endorsement and explanation of stereotypes in the same manner as entity theories. Levy et al. (1998) demonstrated that entity theorists explained social stereotypes in terms of innate or inherent factors more than incremental theorists, and endorsed these stereotypes more strongly (Studies 1, 2, and 5), despite being equally knowledgeable about stereotype content. Moreover, entity theories predicted stereotype endorsement independently of and more powerfully than a variety of individual difference measures with established links to stereotyping (Study 5). Thus, we replicated Levy et al.’s Study 5, adding the new essentialist belief scales to the entity theory measure and adding items from their Study 2 for investigating stereotype explanation.

Our main study tested four hypotheses. First, we predicted that entity theories would be positively associated with the new scales, belonging to an encompassing set of essentialist beliefs. Second, we predicted that essentialist beliefs, as a set, would uniquely predict stereotype endorsement, independent of other potential predictors of stereotyping. Third, we predicted that the unique contribution of essentialist beliefs to the prediction of stereotype endorsement would not be reducible to entity theories, so that it is essentialist beliefs more broadly that predict stereotype endorsement. Fourth, we predicted that essentialist beliefs would predict innate

explanations of stereotype persistence. In addition, we expected that essentialist beliefs would not be associated with stereotype knowledge.

## Method

### Participants

Participants were 114 undergraduates (85 women, 29 men), mean age 20.3, who participated in the study for course credit. They were recruited for a study of “Beliefs about social groups.”

### Materials

Following the procedure adopted by the Levy et al. (1998) Study 5, participants were advised that there were two separate parts to the study. Participants were instructed that the first part would include a “number of questionnaires that ask you about your beliefs regarding different kinds of people” as well as some questionnaires “regarding different aspects of yourself and your preferences.” The four belief scales (Immutability, Biological basis, Discreteness, and Informativeness) were again included to assess essentialist beliefs, with the revised 7-item version of the last used and all items randomly ordered. In addition, five individual difference scales were employed. Levy et al. (1998) used four of these (with the exception of the Social Dominance Orientation scale) as additional predictors of stereotype endorsement.

*Need for cognitive closure* (Webster & Kruglanski, 1994). This widely used 42-item scale measures people’s motivation towards epistemic confidence, with items rated from 1 (*strongly disagree*) to 6 (*strongly agree*).

*Right-wing authoritarianism* (RWA: Altemeyer, 1988). This scale assesses support for harsh forms of traditional authority and rejection of egalitarianism. The 30 items are rated from 1 (*strongly disagree*) to 6 (*strongly agree*).

*Attributional complexity* (Fletcher, Danilovics, Fernandez, Peterson, & Reeder, 1986). This 28-item scale measures individual differences in complexity of attributional processing. Items are rated from 1 (*strongly disagree*) to 6 (*strongly agree*).

*Need to evaluate* (Jarvis & Petty, 1996). This 16-item scale assesses stable individual differences in the tendency to engage in evaluative responding, with items rated according to “how characteristic each statement is of you,” scored from 1 (*extremely uncharacteristic*) to 5 (*extremely characteristic*).

*Social dominance orientation* (Pratto, Sidanius, Stallworth, & Malle, 1994). This 16-item scale is a measure of preference for inequality among social groups, with items rated from 1 (*strongly disagree*) to 6 (*strongly agree*).

The first part of the questionnaire therefore contained nine distinct scales, in the order above. The second part

was described to participants as “a study of people’s agreement with several attributes that are often associated with particular social groups.” A list of the most commonly generated stereotypes from the pilot study (6 positive and 6 negative for each of the 9 social categories) was provided to participants. To assess stereotype knowledge, participants were asked to indicate whether they were aware that each of the attributes are commonly associated with the respective categories by circling “yes” or “no.” Participants were then asked to rate on an 11-point scale (ranging from –5 to +5, with 0 indicating neutrality) whether they considered each attribute to reflect positively or negatively on the category. To assess stereotype endorsement, participants were then shown the list of attributes for each social category and asked to indicate how much they agreed that each of the attributes were true of the category on a 5-point scale (0 = *not at all true*, 1 = *a grain of truth*, 2 = *moderately true*, 3 = *mostly true*, and 4 = *extremely true*). They were given an example of a “true” stereotypical attribute to reduce the demand to report that all stereotypical attributes are false (i.e., greater average physical strength in men than women), as in Levy et al. (1998) Study 1.

In the final section of the second part of the questionnaire, participants were asked to consider six possible explanations for why certain views of social categories tend to persist. A shorter list of three positive and three negative attributes relating to Aboriginals and homosexuals was taken from the first section, with an explanation listed for each attribute. As in Levy et al. (1998) Study 2, two competing explanations were provided to participants. Two items reflected innate or inherent factors within the group (e.g., “The view of Aboriginal people as more \_\_\_ has persisted because of innate causes associated with being a member of that group” & “The view of Aboriginal people as more \_\_\_ has persisted because of factors that are internal to that group”) and one item reflected social or environmental factors (“The view of Aboriginal people as more \_\_\_ has persisted because of past or present environmental or social causes within Australian society”). Three filler explanations were also used, ascribing the persistence of stereotypes to behaviors consistent with them, ignorance of the category, and the media. Participants were told that each statement referred to a possible reason for the existence or perpetuation of each attribute for each group, and instructed to rate their agreement with each explanation for each attribute on an 11-point scale (0 = *not at all*, to 10 = *very much*). In total, then, 72 statements (6 attributes × 2 categories × 6 items) were rated.

### Procedure

Participants completed the questionnaire in small groups in a laboratory setting, under the supervision of one of the researchers. They were thoroughly debriefed



after completing the study, which typically took about 45 min.

## Results

### Analysis of the belief scales

Internal consistencies of the Immutability (i.e., entity theory) and Biological basis scales were very good (Cronbach's  $\alpha = .87$  and  $.80$ ), and reliabilities of the Discreteness and Informativeness scales were somewhat lower, but still adequate ( $\alpha = .69$  and  $.62$ ). Principal components analyses of the three new scales supported unifactorial models of each, or models in which the positively and negatively worded items fell on distinct factors, implying that the scales are reasonably coherent. Scale intercorrelations are presented in Table 2, which consistently shows moderately positive associations, although those involving the Biological basis scale were relatively weak. A principal components analysis of the four scales supported a unifactorial model according both to the scree test and the Kaiser criterion, and accounted for 41.1% of the variance. Three scales load substantially ( $>0.64$ ) on this factor, and Biological basis loaded moderately ( $.27$ ). The study therefore supports the hypothesis that entity theories are components of a broader set of essentialist beliefs. Believing human attributes to be fixed is typically associated with believing them to be biologically based, deeply informative about individuals, and tending to divide individuals into discrete categories. In view of the apparent unidimensionality of essentialist beliefs in the present study, an overall "Essentialism Index" (EI) was constructed by summing participants' scores on the four scales ( $\alpha = .82$ ).

### Stereotype knowledge, evaluation, and endorsement

Participants' stereotype knowledge was operationalized as the total number of attributes out of 108 (12 attributes  $\times$  9 categories) of which they were aware (i.e., number of "yes" responses). As indicated in Table 3, stereotype knowledge was not significantly correlated with the four essentialist belief scales, or with the EI. This finding is consistent with expectation and with the pilot study.

Table 2  
Intercorrelations among the four essentialist belief scales, main study

	1	2	3	4
1. Immutability	1.00			
2. Biological basis	0.12	1.00		
3. Discreteness	0.38**	0.09	1.00	
4. Informativeness	0.20**	0.02	0.34**	1.00

\*\*  $p < .01$ .

Table 3  
Correlations among essentialist beliefs and stereotype knowledge, evaluation, and endorsement, main study

	Stereotype knowledge	Stereotype evaluation	Stereotype endorsement
Immutability	.15	-.09	.21*
Biological basis	.03	.19	.22*
Discreteness	.17	.22*	.20*
Informativeness	.00	.10	.20*
Essentialism index	.15	.14	.33**

\*  $p < .05$ .

\*\*  $p < .01$ .

Participants' mean evaluation of the stereotypical attributes across the 108 attributes was computed and correlated with the essentialist belief scales (see Table 3). Discreteness had a weak association with more positive stereotype evaluation, but the other scales and the EI did not, indicating that there is little or no association between essentialist beliefs and the evaluation of stereotype content.

The main aim of the present study was to show that essentialist beliefs would be positively associated with stereotype endorsement. Stereotype endorsement was calculated as the mean level of endorsement for all attributes across all nine social categories. Correlations between stereotype endorsement and the essentialist belief scales are presented in Table 3, and consistently support our hypothesis. Replicating Levy et al. (1998), the Immutability (entity theory) scale predicts stereotype endorsement, as do the three new essentialist belief scales and the combined measure of these beliefs (EI). The EI predicted endorsement of both negative ( $r = .36, p < .001$ ) and positive ( $r = .22, p < .05$ ) stereotypes.

To assess whether essentialist beliefs predict stereotype endorsement independent of alternative individual difference scales, four simultaneous multiple regression analyses were conducted, with stereotype endorsement serving as the dependent variable and the five individual difference scales and each essentialist belief scale as predictors. Replicating Levy et al. (1998), the Immutability scale demonstrated an association with stereotype endorsement ( $\beta = .18, p < .05$ ) independent of the individual difference scales, as did the Biological basis ( $\beta = .28, p < .005$ ) and Informativeness ( $\beta = .16, p = .05$ ) scales. The independent effect of the Discreteness scale was marginal ( $\beta = .15, p = .06$ ). When combined into the EI, the essentialist belief scales and individual difference measures significantly predicted stereotype endorsement,  $F(6, 107) = 3.58, p = .003, R^2 = 0.17$ . Only the EI and the RWA scale made independent predictive contributions (see Table 4). These analyses therefore support our hypothesis that essentialist beliefs independently predict stereotype endorsement, as entity theories did in Levy et al. (1998).

It is possible that the predictive contribution of the EI to stereotype endorsement is reducible to the Immutability scale, one of its four constituents, and that the other

Table 4  
Results of regression analyses predicting stereotype endorsement, main study

Variable	Zero-order correlation	Final $\beta$ coefficient
Essentialism index	.33**	.31**
Right-wing authoritarianism	.27*	.27*
Need to evaluate	.04	.09
Attributional complexity	-.03	.08
Need for closure	.10	-.07
Social dominance orientation	.18	.00

\*  $p < .05$ .

\*\*  $p < .01$ .

constituents are predictively inert. Alternatively, Immutability beliefs might have no privileged role among the essentialist belief measures in accounting for stereotype endorsement. To examine these possibilities, we conducted a further regression analysis in which the four essentialist belief scales were simultaneously entered as predictors of stereotype endorsement. Collectively these scales predicted stereotype endorsement,  $F(4, 109) = 3.45, p < .01, R^2 = .11$ . Biological basis ( $\beta = .19, p < .05$ ) and Informativeness ( $\beta = .14, p = .08$ ) had significant or marginal individual effects, with those of Immutability ( $\beta = .12, p = .11$ ) and Discreteness ( $\beta = .09, p = .18$ ) weaker. Given the multicollinearity (redundancy) among the essentialist belief scales, these independent effects may be underestimated.<sup>1</sup> In any event, the association between essentialist beliefs and stereotype endorsement is clearly not reducible to immutability, consistent with hypothesis.

### Stereotype explanations

To test the hypothesis that essentialist beliefs would be associated with greater agreement with innate or inherent explanations for the perpetuation of stereotypes, an innate/inherent explanation variable was calculated by summing the two relevant explanation items across the 12 attributes (6 attributes  $\times$  2 categories). An environmental explanation variable was constructed by summing the corresponding environmental item across the same attributes. As hypothesized, and consistent with Levy et al.'s (1998) Study 2 finding for entity theories, the EI was positively correlated with endorsement of innate/inherent explanations ( $r = .33, p < .001$ ), and when these explanations were simultaneously regressed on the EI and the five individual difference scales the EI

was the only significant predictor ( $\beta = .35, p < .005$ ). In contrast, the EI was not associated with endorsement of environmental explanations ( $r = .03, p > .05$ ). To examine whether the individual essentialist belief scales independently predicted innate/inherent explanations, these explanations were simultaneously regressed on the four essentialism measures. Collectively these measures significantly predicted innate/inherent explanations,  $F(4, 109) = 4.13, p < .005, R^2 = .13$ . Only Immutability ( $\beta = .26, p < .01$ ) and Biological Basis ( $\beta = .16, p < .05$ ) had independent effect, with Discreteness and Informativeness nonsignificant ( $\beta s = .10$  and  $-.03, p s > .05$ ).<sup>2</sup> Thus, people who hold essentialist beliefs about human attributes generally believe that stereotypical attributes arise from factors intrinsic to group members, and this association is not reducible to the effect of entity theories.

### Discussion

The findings of the main study supported all of our hypotheses. Essentialist beliefs formed a reasonably coherent set that appears to encompass the immutability beliefs that have been the focus of research on implicit person theories. Individual differences in essentialist beliefs predicted stereotype endorsement independently of other measures linked to stereotyping. This effect was not reducible to entity theories, as other essentialist beliefs independently predicted stereotype endorsement. People who held more essentialist beliefs also tended to explain the persistence of stereotypes with reference to innate and inherent factors. On the other hand, essentialist beliefs were not associated with greater knowledge of stereotype content, a finding also obtained in the pilot study.

These findings closely replicate those reported for entity theories by Levy et al. (1998), but address the broader class of essentialist beliefs. Given that entity theories appear both theoretically (Rothbart & Taylor, 1992) and empirically (Haslam et al., 2000) to be components of essentialist beliefs, the findings suggest that at least some demonstrated effects and correlates of implicit person theories may be understood in terms of psychological essentialism. Although our findings only relate to stereotyping, and not to the many other phenomena that implicit person theories illuminate, they suggest that it may sometimes be profitable to conceptualize and conduct implicit

<sup>1</sup> To reduce the effect of this multicollinearity, another regression analysis in which the essentialist belief scales and the five individual difference measures were subjected to optimal scaling, a standard regression option in SPSS 11.5. The nine measures successfully predicted stereotype endorsement,  $F(45, 65) = 2.53, p < .001, \text{adj } R^2 = 0.38$ , and all of the essentialist belief scales had significant independent effects (Biological basis  $\beta = .29, p < .01$ ; Discreteness  $\beta = .22, p < .01$ ; Immutability  $\beta = .20, p < .01$ ; and Informativeness  $\beta = .18, p < .01$ ).

<sup>2</sup> Given the multicollinearity among the essentialist belief scales, the regression analysis was again repeated using optimal scaling, with the five individual difference scales added as predictors. In this analysis, Immutability ( $\beta = .48, p < .01$ ), Biological basis ( $\beta = .29, p < .01$ ), and Discreteness ( $\beta = .23, p < .01$ ) were all independently associated with innate/inherent explanations. Informativeness ( $\beta = -.23, p < .01$ ) had an unexpected negative association.

person theory research within this broader framework. We suggest that it may be fruitful for researchers interested in these theories to explore beliefs beyond those to do with the fixedness of human attributes. Little is known, for example, about the implications of holding biological theories of individual differences (cf. Keller, 2005), and it is possible that the “lay dispositionism” that Chiu et al. (1997a, 1997b) identify as a feature of implicit theories of personality involves a broadly essentialist understanding of traits (Haslam et al., 2004). An expanded concept of implicit person theories that incorporates other essentialist beliefs may offer a variety of theoretical and empirical advantages.

Our findings of links between essentialist beliefs and stereotyping may appear to be inconsistent with previous research showing nonexistent, weak, conflicting, or negative associations between essentialist beliefs and prejudice (e.g., negative correlations between some essentialist beliefs and anti-gay attitudes; Haslam et al., 2002). However, that work had several differences from the present studies. First, it assessed beliefs about specific social categories, rather than about human attributes in general. Second, it obtained evidence that essentialist beliefs fall on two distinct factors, whereas the present research pointed to a single factor. Third, it concerned endorsement of negative stereotypes only, whereas the present work involved a balanced sample of positive and negative stereotypes.

We believe that these differences help to explain the apparent inconsistency between the findings of the two studies. We propose that essentialist beliefs about human attributes have a different structure from essentialist beliefs about specific social categories, consistent with the unifactorial structure recently obtained for essentialist beliefs about personality (Haslam et al., 2004). Beliefs that personal attributes are biologically based, discrete, and immutable are tightly bound up with beliefs that they are deeply rooted, consistent with the close links between essentialism and entitativity proposed by Yzerbyt et al. (2001). In addition, we argue that essentialist beliefs predict endorsement of stereotypes in general, not negative stereotypes in particular, and so they would not be expected to have a straightforward relationship with prejudice. We therefore propose that people who hold essentialist beliefs about human attributes are apt to endorse stereotypes both negative and positive, consistent with Levy et al.’s (1998) findings regarding entity theorists.

Our studies have several limitations that militate against overly strong conclusions and suggest the need for replication. First, we only employed one measure of stereotyping, borrowed from Levy et al. (1998), and other measures might yield different results. Second, our new measures of essentialist beliefs are somewhat less reliable than the entity theory measure, although clearly reliable enough to yield robust correlations with one

another and with stereotype endorsement. Despite these limitations, however, our findings point out promising directions for future research on stereotyping and implicit theories, and demonstrate that psychological essentialism may prove to be a valuable concept for research on intergroup relations.

## Appendix A. Biological basis, discreteness, and informativeness scales

### *Biological basis*

- “The kind of person someone is can be largely attributed to their genetic inheritance”
- “Very few traits that people exhibit can be traced back to their biology” (reversed)
- “I think that genetic predispositions have little influence on the kind of person someone is” (reversed)
- “Whether someone is one kind of person or another is determined by their biological make-up”
- “There are different types of people and with enough scientific knowledge these different ‘types’ can be traced back to genetic causes”
- “A person’s attributes are something that can’t be attributed to their biology” (reversed)
- “With enough scientific knowledge, the basic qualities that a person has could be traced back to, and explained by, their biological make-up”
- “A person’s traits are never determined by their genes” (reversed)

### *Discreteness*

- “The kind of person someone is, is clearly defined; they either are a certain kind of person or they are not”
- “People can behave in ways that seem ambiguous, but the central aspects of their character are clear-cut”
- “A person’s basic qualities exist in varying degrees, and are never easily categorized” (reversed)
- “Everyone is either a certain type of person or they are not”
- “A person’s basic character is never easily defined” (reversed)
- “A person either has a certain attribute or they do not”
- “No matter what qualities a person has, those qualities are always indefinite and difficult to define” (reversed)
- “People can have many attributes and are never completely defined by any particular one” (reversed)

### *Informativeness*

- “When getting to know a person it is possible to get a picture of the kind of person they are very quickly”

“It is possible to know about many aspects of a person once you become familiar with a few of their basic traits”

“A person’s behavior in a select number of contexts can never tell you a lot about the kind of person they are” (reversed)

“Although a person may have some basic identifiable traits, it is never easy to make accurate judgments about how they will behave in different situations” (reversed)

“Generally speaking, once you know someone in one or two contexts it is possible to predict how they will behave in most other contexts”

“It is never possible to judge how someone will react in new social situations” (reversed)

“There are different ‘types’ of people and it is possible to know what ‘type’ of person someone is relatively quickly”

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