

“It Feels Like It’s in Your Body”: How Children in the United States Think About Nationality

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Concepts of national groups (e.g., Americans, Canadians) are an important source of identity and meaning in people’s lives. Here, we provide a developmental investigation of these concepts. Across 3 studies involving 5- to 8-year-olds and adults in the United States, we found that (a) compared with older children and adults, young children were more likely to think that national groups have a biological basis, but that (b) other aspects of national group concepts—such as the idea that national group membership is stable and informative about a person—changed less with development. Moreover, with age, the notion that membership in a national group is a meaningful fact about a person (vs. a mere formality) began to link up with attitudes that rationalized the national ingroup’s economic advantages and portrayed it as superior to national outgroups. This work contributes to theory on the development of social cognition and provides a unique source of insight into current political trends.

Keywords: nationality, national groups, development, concepts, essentialism

Since its origins in post-Renaissance Europe, the nation state has been important both politically and psychologically, shaping the identities of billions across the globe (e.g., Anderson, 2006). Even today, despite a trend of increasing globalization in nearly every aspect of modern life, nationality seems to function as a powerful source of meaning in people’s lives. For instance, 72% of Americans report that being an American is either “very important” or “extremely important” to their identity (The American National Election Studies, 2017). The recent rise of nationalist ideologies in the United States and beyond (e.g., The Economist, 2016) likewise points to the central role of national groups in the psychological landscape of the 21st century. In addition to their role as a source of personal meaning, national groups shape people’s attitudes toward others. Stronger national identification predicts, for example, more negative attitudes toward immigrants (e.g., Falomir-

Pichastor & Frederic, 2013; Kunovich, 2009; Meeus, Duriez, Vanbeselaere, & Boen, 2010) and views of ethnic minorities as outsiders rather than full-fledged citizens (e.g., Devos & Banaji, 2005; Huynh, Devos, & Altman, 2015). Given the broad influence of national group concepts over how people view themselves and others, understanding the structure of these concepts is a pressing goal for cognitive science.

Here, we report a developmental investigation of concepts of national groups. Although it may seem counterintuitive to study children as a way of understanding a complex sociopolitical concept, adults’ reasoning about many complex topics reflects a mix of the sophisticated concepts acquired through formal education and the intuitive concepts with which they operated as young children (for a review, see Shtulman & Lombrozo, 2016). For example, knowledge of evolution via natural selection coexists in adults’ minds with “essentialist” assumptions about species as static entities made up of interchangeable individuals—assumptions that are shared by most 4-year-olds (Shtulman & Schulz, 2008; see also Goldberg & Thompson-Schill, 2009; Kelemen, Rottman, & Seston, 2013; McCloskey, 1983; Strickland & Scholl, 2015). A similar analysis might apply to concepts of national groups. When asked to consider the factors that are important in making someone a member of a national group, most adults list formal requirements such as having citizenship (e.g., Schildkraut, 2007), which reflects an understanding that national group membership does not track anything particularly deep about a person. It is possible, however, that this understanding of national groups (i.e., as a formal, administrative way of partitioning the social world) is overlaid on an earlier concept according to which national groups reflect deeper, natural differences between people. Like other early concepts, this essentialist perspective on national groups (if present) may remain available to people throughout life and may even come to the fore under certain circumstances (e.g., when it satisfies certain motives or when people are under a

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cognitive load; Brescoll, Uhlmann, & Newman, 2013; Kelemen et al., 2013; Shtulman & Harrington, 2016).

Prior work on children's thinking about national groups has focused largely on charting the development of children's (a) feelings toward their own versus other national groups, and (b) knowledge of the distinguishing characteristics of national groups (for a comprehensive review, see Barrett, 2007). Like adults, children appear to identify strongly with their national group (Carrington & Short, 1995, 1996), and there is some evidence that a strong sense of national pride exists by age 7 (Moore, Lare, & Wagner, 1985; Piaget & Weil, 1951; Weinstein, 1957). Children as young as 5 are also able to report their nationality and recognize their country's flag, as well as identify the features most closely associated with national groups (such as language; DeJesus, Hwang, Dautel, & Kinzler, 2018). No research we know of, however, has investigated the extent to which, across development, children assume national groups to pick out meaningful, natural divisions in the social world.

The possibility that early concepts of national groups have this character is indirectly supported by prior work on the development of social group concepts. Children's thinking about many natural kinds (e.g., lions) and social categories (e.g., women) reflects a belief that membership in such categories is determined by deeper features or substances ("essences") that also cause category-typical properties and behaviors (for a review, see Gelman, 2003). With respect to social categories in particular, this essentialist bias is often stronger among younger children (e.g., Chalikh, Leslie, & Rhodes, 2017; Taylor, Rhodes, & Gelman, 2009) and then subsides with development—but by no means disappears. Moreover, young children are essentialist with respect to a wide range of social categories, including gender (e.g., Taylor et al., 2009), ethnicity (e.g., Birnbaum, Deeb, Segall, Ben-Eliyahu, & Diesendruck, 2010), race (e.g., Hirschfeld, 1995; but see Roberts & Gelman, 2016), and religion (e.g., Chalikh et al., 2017).

However, children do not automatically assume that any group they encounter has an essence; essentialism is not a default assumption for young children (e.g., Rhodes, Leslie, & Tworek, 2012). Thus, it is an open question whether national groups are initially seen as natural partitions of the social world. In fact, depending on the context in which they are growing up, children's experiences may reliably contradict this notion. The United States, where this research was conducted, is often described as a "nation of immigrants," and the idea that Americans are a heterogeneous group with ancestors coming from all over the world is one to which even young children are likely to be exposed. Given these cultural messages, the United States may provide a conservative test of whether children essentialize national group membership—if they did so, this belief would go against salient aspects of their input.

If present in young children, essentialist conceptions of nationality may also set the tone for later *attitudes* toward one's own and other national groups. For example, thinking that status differences between national groups are due to the essential qualities of these groups may lead children to view these differences as justifiable. In fact, essentialist views of social groups have been linked to greater support for status hierarchies among groups, and the sociopolitical status quo more generally, in both children and adults (e.g., Brescoll et al., 2013; Hussak & Cimpian, 2015, 2018; Mandalaywala, Amodio, & Rhodes, 2017; Morton, Postmes, Haslam, & Hornsey, 2009; Rhodes, Leslie, Saunders, Dunham, & Cimpian,

2018). Some studies have also found that essentialism predicts prejudice toward outgroups (e.g., disliking, avoiding affiliation; Diesendruck & Menahem, 2015; Haslam, Rothschild, & Ernst, 2002; Keller, 2005; Mandalaywala et al., 2017; Pauker, Ambady, & Apfelbaum, 2010), though there is also evidence that essentialist views are not by themselves sufficient to give rise to prejudice (Rhodes et al., 2018) and are thus sometimes unrelated to it (e.g., Haslam et al., 2002; Rhodes et al., 2018). To examine how these relationships play out in the context of children's developing concepts of national groups, we examined the links between these concepts and children's tendency to (a) rationalize inequalities that favor the national ingroup over outgroups and (b) view the national ingroup in a more positive light than national outgroups.

In addition to its potential contributions to the literature on concepts of national groups, the present research may also add to our understanding of essentialism as a construct. Theoretically, there is growing awareness that essentialism is a multifaceted phenomenon (e.g., Andreychik & Gill, 2015; Gelman, 2003; Haslam, Rothschild, & Ernst, 2000; Rangel & Keller, 2011). For example, Haslam et al. (2000) identified no fewer than nine different aspects of essentialism (e.g., stability, informativeness, and inherence), and recently Newman and Knobe (in press) have extended the notion of essences to cover not just physical, causal essences (Gelman, 2003) but also Platonic, ideals- or values-based essences (e.g., the essence of being a scientist is to value the search for truth via empirical means). However, these important theoretical developments have not been reflected in much of the developmental research on essentialism. Many developmental investigations equate essentialism with children's responses to a single measure (e.g., the switched-at-birth task; Gelman & Wellman, 1991), which likely assesses only one facet of this complex construct. Moreover, when multiple measures are administered, they are often averaged rather than being analyzed separately, which precludes inferences about differential developmental trajectories across the various aspects of essentialism (for a salient exception, see Gelman, Heyman, & Legare, 2007) or about differential relationships of these aspects with intergroup attitudes across development.

To address this empirical gap, the present studies used a broad set of measures to assess the structure of children's national group concepts. Specifically, we measured the extent to which children see national groups as stable, informative, rooted in a deeper biological reality (and thus heritable and detectable in a person's insides), and embodying a certain set of values (e.g., loving freedom; Knobe, Prasada, & Newman, 2013; Newman & Knobe, in press). This comprehensive array of measures, which were not collapsed into a composite, allowed us to investigate whether the various facets of children's concepts of national groups (and these facets' link with intergroup attitudes) differ in their developmental trajectories. With age, children may realize, for instance, that national groups are heterogeneous with respect to dimensions such as ethnicity and race, which may in turn undermine the idea that these groups are natural in a biological sense. In contrast, the idea that membership in a national group is stable, informative about a person, and rooted in a distinctive set of values and feelings (rather than being simply a formal, administrative matter) may persist longer, especially in a patriotic country like the United States (Smith & Kim, 2006). In fact, even adults may essentialize national groups in some of these ways (see Study 1).

Overview of Studies

We report three studies. Studies 1 and 2 investigated the development of American children's conceptions of their own national group (Study 1) and a national outgroup (Canadians; Study 2). In Study 3, we investigated the relationship between children's conceptions of their national ingroup and their attitudes toward national outgroups.

Study 1

Method

Participants. We recruited 70 children aged 5 to 8 (35 boys, 35 girls; $M_{\text{age}} = 7.12$ years, $SD = 1.26$). The sample size for this study, as well as Studies 2 and 3, was determined to achieve 90% power to detect a medium-sized relationship with age (e.g., DeJesus et al., 2018). Children were recruited from a small city in the Midwestern United States (as were the children in Studies 2 and 3) and were tested either in a university lab or in a quiet room at their school. We sampled 5- to 8-year-olds in all studies to cover a relatively broad period of development. We did not recruit children younger than 5 because this is generally the earliest age at which children reliably identify their own nationality and national symbols (Piaget & Weil, 1951; Weinstein, 1957), as well as develop systematic beliefs about national groups (e.g., DeJesus et al., 2018). Demographic information was provided by a subset of the participants' families ($n = 39$). Within this subset, a majority of the children (>80%) were European American and came from homes in which the primary caregiver had at least a bachelor's degree (79%) and a median income between \$80,000 and \$99,999. Neither parental education nor incomes were significant predictors of children's concepts of national groups when included in the multilevel models across Studies 1–3. A sample of 75 adults (39 men, 36 women; $M_{\text{age}} = 34.05$ years, $SD = 10.70$) was recruited via Amazon's Mechanical Turk and served as a comparison for the children in this study. The procedures reported below, as well as in Studies 2 and 3, were approved by a university-affiliated Institutional Review Board.

Materials. We investigated children's concepts of nationality with a broad spectrum of measures of essentialism, both forced-choice and open-ended. Analogous versions of the forced-choice measures were presented to the adult participants via Qualtrics.

Forced-choice measures. We adapted four types of items from previous work that investigated whether children's reasoning about other social and natural categories exhibits the hallmark features of essentialism. First, we assessed children's belief in the *stability* of national identity. We showed children a picture of a young child who was identified as an American. We then asked children whether that child (a) had always been an American and (b) would always be an American (adapted from Gelman & Heyman, 1999). Children who answered "yes" to the second question were then asked whether the American child would remain an American if they moved to another country "far, far away." Finally, all children were asked whether the child "can stop being American" if they did not want to be an American anymore. For the first question, children's responses were assigned a 1 for "yes" (has always been American) answers and a 0 for "no" answers. For the second question, children who said that the child

would not always be an American were given a score of 0; those who said that the child would always be an American, but not if they moved to a country far away were given a score of .5; those who answered "yes" to both questions (that the child would always be an American, even if they moved far away) were given a score of 1. For the last question, children's responses were assigned a 1 for "no" (cannot stop being American) answers and a 0 for "yes" answers. Scores were averaged to create a composite *stability* score.

Second, we tested whether children believe that national group membership is *heritable*. To measure this belief, we borrowed the classic switched-at-birth task from Gelman and Wellman (1991). We introduced children to two couples, an American couple and a couple belonging to an unfamiliar national group (Andorrans). The couples were of the same race (White). To distinguish between the two, children were shown pictures of each couple with the corresponding flag in the background. Assignment of nationality to each couple was counterbalanced across participants. We then told children that the American couple had a baby, but right after the baby was born, they went to live with the Andorran couple, with whom they grew up, and they never saw their birth parents or any Americans ever again. Children's memory for this information was tested and corrected, if needed. Children were then asked three questions about what the baby would be like when they grew up: specifically, whether they would be an American or an Andorran, whether they would speak English or the Andorran language, and whether they would like the same foods as the American couple or as the Andorran couple. Question order was randomized. Essentialist responses (i.e., those that reflected the belief that the adopted baby would retain American characteristics) were assigned a value of 1, whereas the nonessentialist responses were assigned a value of 0. We took an average of these values to construct a *heritability* composite score.

Third, we tested whether children believe that national group membership is manifested in a person's biology such that it can be detected in their *insides* (where the essence typically resides; Gelman, 2003). To measure this belief, we adapted a task from Gelman et al. (2007). Children were shown a picture of two similar-looking adults and were told that only one of the two was an American, while the other was not an American. Children were then presented with five "ideas" in random order for how they could solve this "mystery" and determine which individual was an American. Three of the ideas involved examining the insides of the two people in the photo (e.g., "Do you think we could tell who's an American by looking at their blood/bones/brains?"). For each question, children received a score of 1 if they answered "yes" and a score of 0 if they answered "no." To verify that children understood this task, we also asked two control questions that were designed to elicit agreement (e.g., "Do you think we could tell who's an American by talking to the girls and asking them questions?") and disagreement (e.g., "Do you think we could tell who's an American by finding out how old the girls are?"), respectively. As expected, levels of agreement were vastly different for these two questions (98.6 vs. 20.3% agreement for the "asking questions" and "age" questions, respectively; $p < .001$ by a sign test), which suggests that children had no difficulty understanding this task. The values for the blood, bones, and brains questions were averaged to create an *insides* composite score.

Fourth, we assessed children's beliefs about the *inductive potential* of national group membership—that is, whether they believe such membership to be informative about other aspects of a

person (e.g., Gelman & Markman, 1986). In this task, adapted from Diesendruck and HaLevi (2006), children were introduced to three people: two test characters and a target character. The test characters were always introduced first. One was labeled as American and the other as belonging to a different national group (e.g., South African). To further highlight the relations among characters' national identities, all were shown holding their respective countries' flags. In the two critical trials, the test characters were described as having differing preferences (e.g., "This is Megan. She's an American. Megan likes to play Gorp at recess. This is Mark. He's an Estonian. Mark likes to play Quid at recess."). Importantly, the test characters differed not just in their nationality but also in their race or gender (depending on the trial). Thus, this task contrasted national identity with other informative category markers (namely, race and gender) to test which social identity children found to be more inductively rich.

After being introduced to the test characters, children were shown the target character, who was always presented with an American flag and thus shared the national identity of one of the test characters. However, the target character shared membership in a different social category (gender or race) with the other, non-American test character. For example, if the test characters were an American girl and an Estonian boy, the target character would be an American boy.

Children were asked to guess whether the target character would share the preference of the same-nationality test character or the same-gender/race test character (e.g., "This is Aaron. Do you think Aaron likes to play Gorp at recess, like Megan, or does he like to play Quid at recess, like Mark?"). The order in which the test characters were mentioned within each test question was counterbalanced.

Both critical trials involved inductive generalizations about child-relevant preferences: (a) liking to play Gorp versus Quid at recess (the example above), and (b) liking the puzzle Joop versus the board game Flarp. A child might plausibly assume preferences of this sort to be shared by the members of a national group if the child were inclined to see membership in such a group as informative. The preferences concerned recreational activities (e.g., games, puzzles) both because these are salient in children's lives and because they do seem to vary quite a bit across countries. However, the focus on (a particular type of) preferences also means that our measure of inductive potential was relatively narrow—a limitation that should be kept in mind when interpreting the results.

To verify that children understood this task, we added two control trials to the task. The order of the critical and control trials was counterbalanced across children. The control trials asked children to make inductive inferences about properties that one would not expect to be predicted by nationality (namely, handedness and the gender of a character's sibling). Just as in the critical trials, children judged whether the target would share a property with a same-nationality, different-gender/race individual or with a different-nationality, same-gender/race individual. However, we expected children to select the American test character less often in the control trials than in the critical trials, which they did (62.9 vs. 77.9% same-nationality selections on the control vs. critical trials; paired $t(69) = 2.77, p = .007$).¹

For the two critical trials, children received a score of 1 when they chose the American test character (i.e., they generalized the property from the American test character to the American target character) and a score of 0 when they chose the non-American test

character. Scores on the critical trials were averaged to create an *inductive potential* composite.

Open-ended measures. Although the measures above are typical, well-established ways of assessing essentialist beliefs, we also wanted to obtain a more qualitative sense of children's concepts of national groups. Thus, we asked children three open-ended questions that explored (a) their explanations for the origins of national traditions, (b) the subjective meaning children assign to national identity, and (c) children's understanding of the process by which one acquires a certain national identity. We expected that children's responses to these open-ended questions would largely echo their answers to the forced-choice measures but perhaps also afford the opportunity to express other types of essentialist beliefs (e.g., that being an American is a matter of having certain values).

First, because national identity is bound up with certain traditions, we tested whether children explained *national traditions* in essentialist ways (e.g., if they believed that Americans eat a lot of apple pie because of some inherent features of Americans as opposed to their history or circumstances). Children were asked to explain three American traditions (eating apple pie, going to baseball games, and watching fireworks shows), in random order. Answers that explained the tradition as arising from inherent or internal features of the national group were given a score of 1 (e.g., "Americans watch fireworks 'because they're American and they like watching fireworks shows'"). Answers that attributed the tradition to historical or contextual factors (e.g., "because there's lot of big parks," "because they're pretty to watch") were given a score of 0. "I don't know" and unintelligible responses (e.g., "I watch fireworks on every show") were coded as missing for this and the other open-ended measures. All responses were coded both by the first author and by a second, hypothesis-blind coder (inter-rater agreement = 87%); coding was conducted blind to participants' age. Disagreements were resolved via discussion. Children's scores were averaged across questions to form a composite *traditions* score.

To more directly assess children's subjective understanding of membership in a national group, we asked them to explain what it "means to be an American" (henceforth, *meaning*). Responses that reflected an inherent or essentialist conception of national identity—that is, those that explained nationality in terms that went beyond the formal requirements of citizenship—were assigned a score of 1. These responses suggested that the meaning of being an American encompasses elements such as embodying certain values or possessing certain feelings (e.g., "being good," "to be nice," and "it's just how you feel in your body"). On the other hand, responses that reflected a more formal understanding of national identity (e.g., "you live in America") were assigned a score of 0 (inter-rater agreement = 90%).

The final measure of children's conceptions of national identity asked how one "becomes an American" (henceforth, *acquisition*). Again, responses that suggested becoming an American involves

¹ Children generalized the control properties (e.g., handedness) to same-nationality characters more often than expected by chance (50%), one-sample $t(69) = 3.09, p = .003$. Although somewhat surprising, this result may be because of spillover from the critical trials—when looking separately at the subset of children who received the two control properties *first*, the number of same-nationality selections was smaller ($M = 53.8%$) and not significantly different from chance, one-sample $t(12) = 0.56, p = .58$.

more than fulfilling the basic requirements for citizenship were assigned a score of 1 (interrater agreement = 82%). These responses generally claimed that certain special skills (e.g., “by going to school and learning,” “you learn the names, the words, and how to spell them”) or behaviors (e.g., “by waving a flag”) were required for membership in the national group.

Procedure. All participants completed all measures in a single session. The order of all measures (aside from the final two questions, meaning and acquisition, which were always presented at the end) was counterbalanced across participants.

Results and Discussion

We begin by reporting our analyses of children's responses. The comparison between children and adults is presented later in this section.

Children's data: Preliminary considerations. The average correlation among the seven measures in this study was only .06, range = [−.35, .35], Cronbach's $\alpha = .36$ (see Table 1 for means and SDs and Table 2 for the correlation matrix). This result supports the idea of essentialism as a multifaceted construct even early in development (e.g., Gelman et al., 2007), and suggests the importance of examining the various facets of essentialism independently. From a psychometric standpoint, there is little justification for aggregating these measures into a single index of essentialism.

We submitted the separate scores for each measure (all coded on a scale from 0 to 1, with higher scores indicating more essentialism) to a multilevel mixed-effects linear regression with a seven-level factor to indicate which measure the scores were for. This analysis also included each child's exact age in years (e.g., 5.48) as a continuous predictor and the interaction between measure and age. Each subject's intercept was allowed to vary randomly (i.e., we included a random intercept for subject). This mixed-effects model enabled us to simultaneously compute the relationship of each aspect of essentialism with age, as well as an overall slope between essentialism and age. The analyses were performed with the *mixed*, *margins*, and *contrast* commands in Stata 13.1, and the figures were plotted with the *ggplot2* package in R. The raw data and analytic syntax are available on the Open Science Framework (OSF; https://osf.io/qh2my/?view_only=8026414039ec48b3bf6a6d75c660a517).

Children's concepts of national groups. Consistent with the point that essentialism is not a monolith, the mixed-effects model revealed considerable heterogeneity among the various dimensions of essentialism in their developmental trajectories. Although the aggregate age slope in this model suggested a significant age-related decrease in the overall extent to which children essential-

ized Americans as a national group (i.e., thought that this category picks out deep, meaningful features of a person), $b = -.04$, $SE = .01$, $z = -3.04$, $p = .002$ (see Figure 1), not all dimensions fit this overall pattern (see Figure 2): Only five of the seven measures had negative slopes with age (heritability, insides, traditions, meaning, and acquisition); the exceptions were the dimensions of stability and inductive potential, which had nonsignificantly positive slopes (i.e., they increased slightly with age). Of the five negative slopes, two were significant (those for insides and acquisition) and one was marginally significant (for traditions).

The result for the insides measure seems to indicate a sharp decline in the extent to which children view national group membership in strictly biological terms—as something that can be detected in a person's blood, bones, or brain. This change is likely due children's increasing awareness of the fact that geography is at least as important as biology to the concept of (American) nationality. In fact, we see this realization in children's open-ended responses to the acquisition measure, which also showed a significant negative slope with age (indicating less essentialism): Children were increasingly likely to talk about being in or moving to a *place* as a means of becoming an American (e.g., “you have to travel to America, like Texas or somewhere in the United States,” “by getting into the United States of America,” “by moving to America”).

The results for the traditions measure are consistent with this interpretation. Although this measure did not ask about the requirements for being or becoming an American, it did ask children to explain behaviors that members of this national group engage in (e.g., eating apple pie). Paralleling the trajectory observed for the acquisition measure, the older the children were, the less likely they were to explain these common behaviors by appeal to inherent features of Americans (e.g., preferences) and the more likely they were to appeal to extrinsic, contextual factors. For example, some of the older children explained why Americans eat apple pie by saying things such as “because there's a lot of apple trees around here” or “because here there's lots of good weather for apples to grow.” This developmental trend is consistent with the literature documenting a broader inference bias in children's explanations, a bias that is stronger in younger than older children (Cimpian & Steinberg, 2014; Tworek & Cimpian, 2016) and that is linked to essentialist thinking (Cimpian & Salomon, 2014a, 2014b; Salomon & Cimpian, 2014; Sutherland & Cimpian, 2019).

Importantly, the decrease in children's biological conceptions of national groups does not mean that children viewed them as arbitrary “minimal groups.” For instance, our results also suggest that the view of national groups as signaling informative distinc-

Table 1
Means (and SDs) for the Essentialism Measures From Studies 1–3

Essentialism task	Study 1 (children)	Study 1 (adults)	Study 2 (American targets)	Study 2 (Canadian targets)	Study 3
Stability	.62 (.30)	.72 (.22)	.67 (.30)	.59 (.34)	.59 (.33)
Heritability	.40 (.31)	.14 (.28)	.40 (.34)	.41 (.37)	.46 (.36)
Insides	.30 (.35)	.10 (.24)	.27 (.33)	.31 (.36)	.24 (.30)
Inductive potential	.78 (.30)	.77 (.30)	—	—	.76 (.32)
Traditions	.36 (.33)	—	—	—	—
Meaning	.68 (.47)	—	—	—	—
Acquisition	.21 (.41)	—	—	—	—

Table 2
Intercorrelations Among the Measures of Essentialism and Participants' Age in Study 1

Variable	1	2	3	4	5	6	7	8
1. Age	1	.06	-.20	-.40***	.004	-.22 [†]	-.09	-.22 [†]
2. Stability		1	.04	.03	.21 [†]	-.08	-.12	-.22 [†]
3. Heritability			1	.16	-.12	.06	.24*	.19
4. Insides				1	-.35**	.35**	.22 [†]	.06
5. Inductive potential					1	-.04	-.15	.02
6. Traditions						1	.23 [†]	.21 [†]
7. Meaning							1	.34**
8. Acquisition								1

Note. *N* = 70.
[†] *p* < .10. * *p* < .05. ** *p* < .01. *** *p* < .001.

tions between individuals persists across the developmental window investigated here. As illustrated in Figure 2, children's scores on the inductive potential dimension were high across the age range in our study. This impression was confirmed by the results of our mixed-effects model. The model revealed a significant main effect of measure, Wald's $\chi^2 = 172.1$, *df* = 6, *p* < .001, and Bonferroni-corrected pairwise comparisons of the marginal means suggested that scores on the inductive potential measure were significantly higher than scores on all other measures (*ps* < .001) except stability (*p* = .13) and meaning (*p* = 1.00). Thus, children thought that knowing someone's national group membership is informative about what they are like as a person (specifically, about their preferences). We should also reiterate that the inductive inference measure used in this study contrasted national group membership with race and gender—two social categories that prior work has shown to be inductively rich themselves (e.g., Berndt & Heller, 1986; Diesendruck & HaLevi, 2006; Gelman, Collman, & Maccoby, 1986; Waxman, 2010). That is, children thought it was more likely that members of the same national group share preferences than that members of the same gender or race group do, which reinforces the conclusion that children see national groups as meaningful.

Also consistent with this conclusion, children's scores on the meaning and stability measures were relatively high across the age range in the present study, and significantly higher than all measures except inductive inference (*ps* ≤ .002; see Figure 2). When asked what it means to be American, children often talked about certain skills, privileges, and responsibilities (e.g., "that you have freedom because in other countries you don't get as much freedom," "fighting wars so you can go to church," "you have to know your flag," and "being good"). These responses suggested that, for younger and older children alike, membership in a national group carries additional meaning beyond the mere fact of belonging to the group. To speculate, perhaps children understand being an American not just in terms of formal requirements (and, in younger children, biological features) but also in terms of the values that members of the category are supposed to embody. As discussed above, this would be an instance of so-called Platonic essentialism (Newman & Knobe, in press; see also Knobe et al., 2013), whereby people essentialize a category by assuming that its members (e.g., scientists) realize a set of essential ideals or values (e.g., impartiality, desire for truth) rather than by assuming the presence of a physical, causal essence. The consistently high scores for the stability measure add to the notion that children see national groups as a meaningful way to divide the social world. Their responses indicated that they conceive of membership in these groups as "sticky"—as likely to endure across one's lifetime, regardless of changes in one's circumstances.

Changes beyond childhood. The adult participants in this study filled out the four forced-choice measures: stability, heritability, inductive potential, and insides. We compared their responses with children's to assess how national group concepts change beyond the age of 9, which is the upper limit of the age range for children in this study. To do so, we first used the mixed-effects model above to estimate the marginal means and 95% confidence intervals (CIs) for each these four measures at the age of 9. Next, we compared the adult average on each of the four measures to the corresponding CI for 9-year-olds. If adults' average on a dimension fell outside the estimated CI for 9-year-olds, then we inferred that further development occurs on that dimension of essentialism between the age of 9 and adulthood.

Adult participants' means (see Table 1) were contained within 9-year-olds' estimated CIs for three of the four measures: stability ($M_{adults} = .72$ vs. $M_{9-year-olds} = .65$ [.51, .80]), inductive potential ($M_{adults} = .77$ vs. $M_{9-year-olds} = .78$ [.63, .93]), and insides

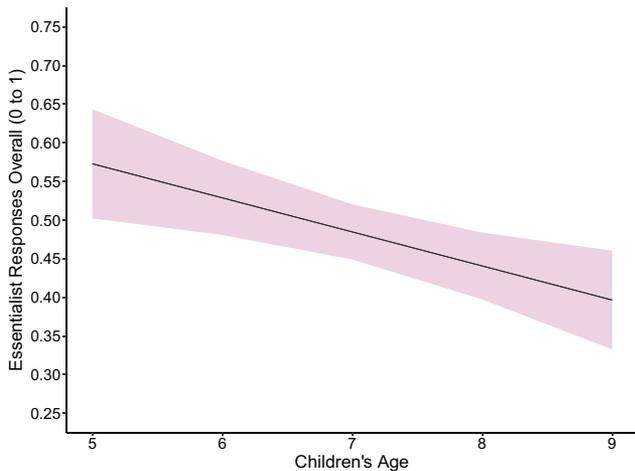


Figure 1. The relationship between age and overall essentialism of national groups in Study 1 (95% confidence intervals shown). See the online article for the color version of this figure.

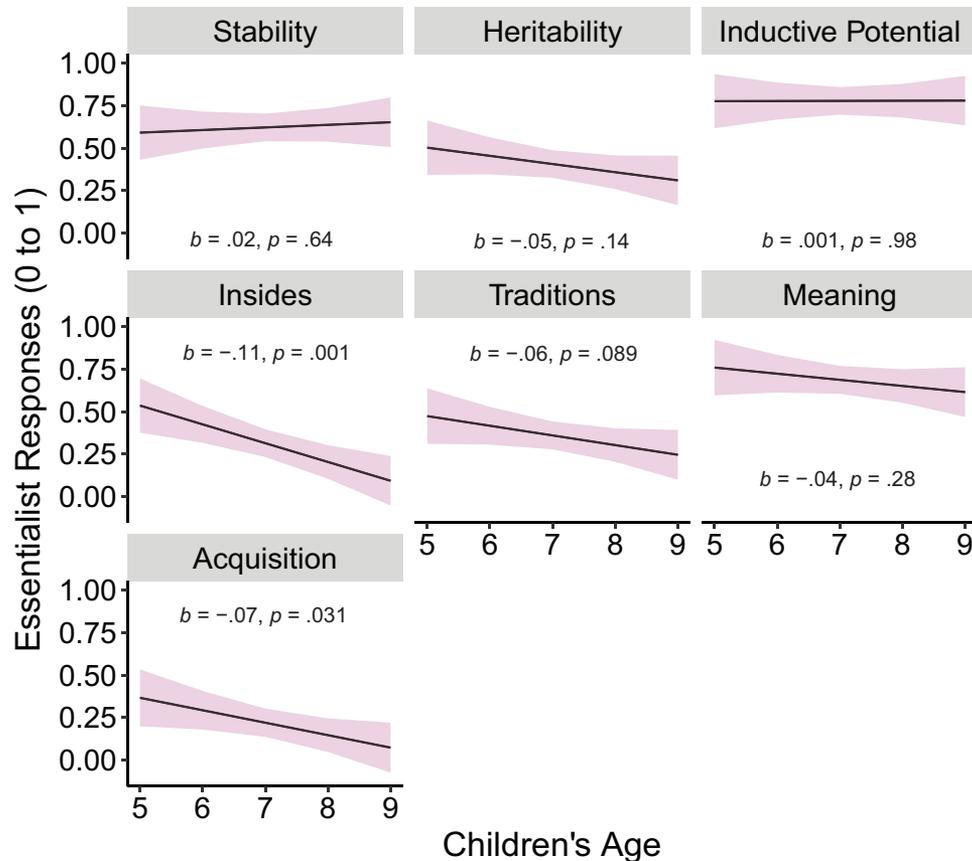


Figure 2. The relationship between age and each measure of national group concepts in Study 1 (95% confidence intervals shown). See the online article for the color version of this figure.

($M_{adults} = .10$ vs. $M_{9-year-olds} = .09 [-0.05, .24]$).² This suggests that responses to these measures might not change appreciably past the age of 9; however, this method of testing changes beyond early childhood is admittedly crude, so we make the claim of no further developmental changes cautiously. The only measure for which adults' mean was outside (specifically, below) 9-year-olds' estimated CI was heritability ($M_{adults} = .14$ vs. $M_{9-year-olds} = .31 [.16, .46]$). Thus, the idea that membership in national groups, as well as the behaviors and preferences associated with these groups, are automatically passed on from parents to their biological offspring seems to have a more protracted developmental course than the other dimensions of essentialism assessed here.

Conclusion. In summary, the results of Study 1 reveal both continuity and change across development in children's conceptions of national groups. Both children and adults saw national group membership as something that is stable and cannot easily be shed, that is informative about a person's behaviors and preferences, and whose meaning goes beyond the formalities of citizenship. On the other hand, young children seemed relatively more likely to assume that national identity has a physical, biological basis—something that can be detected in one's body and passed on from one generation to the next; this aspect of young children's concepts of national identity was revised over the course of development, being much less prevalent among adults.

While informative, Study 1 leaves open the question of whether these conclusions apply to children's conceptions of their *own* national group specifically or to their understanding of national groups more broadly. To answer this question, we compared American children's reasoning about Americans versus Canadians, with the latter being a distinct national outgroup that is nevertheless familiar to many American children.³ If children reason in similar ways about these two national groups, then it is (more) likely we are tapping their concepts of national groups per se. We chose Canadians as a comparison national group in Study 2 because we reasoned that children would be able to recognize them as a *national* group; with unfamiliar or fictional national groups,

² For completeness, we also computed independent-samples *t* tests comparing children and adults (see Table 1 for the means). These tests revealed significantly higher scores for children on the insides, $t(143) = 4.09, p < .001$, and heritability, $t(143) = 5.27, p < .001$, measures. Adults scored higher than children on the stability measure, $t(143) = 2.10, p = .038$. There were no significant differences on the inductive potential measure, $t(143) = 0.24, p = .81$.

³ None of our tasks required that children knew any specifics about Canadians as a national outgroup. However, we informally asked children three questions about Canada/Canadians at the end of the sessions (e.g., we asked them to pick out which of two flags was the Canadian one), and they could all answer at least one such question correctly.

Table 3
Intercorrelations Among the Measures of Essentialism and Participants' Age in Study 2

Variable	1	2	3	4	5	6	7
1. Age	1	.27*	-.17	-.26*	.10	-.33**	-.28*
2. American: Stability		1	.08	-.05	.49***	.05	-.02
3. American: Heritability			1	-.003	.14	.72***	.03
4. American: Insides				1	.10	.08	.67***
5. Canadian: Stability					1	.17	.04
6. Canadian: Heritability						1	.14
7. Canadian: Insides							1

Note. $N = 70$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

the nature of the group would have to be explained to children. Thus, relying on Canadians as a comparison to Americans in Study 2 was an efficient way of testing children's broader concept of national groups.

Study 2

Method

Participants. Participants were 70 children aged 5 to 8 (35 boys, 35 girls; $M_{age} = 6.97$ years, $SD = 1.26$) who were tested either in a university lab or in a quiet room at their school. One additional child was tested but excluded from the final sample because he refused to complete the study. Demographic information was provided by 39 families. The demographic characteristics of the participants in Study 2 were largely similar to those in Study 1; that is, participants were mostly European American (72%) and came from households in which the primary caregiver held at least a bachelor's degree (92%), with a median household income between \$100,000 and \$119,000. Because the question investigated in this study is specifically about the nature of children's concepts of national groups, we did not include an adult comparison group. For the same reason, adult participants were not included in Study 3 either.

Materials and procedure. As our goal in Study 2 was to measure children's reasoning about two national groups (Americans and Canadians), we were only able to use a subset of items from Study 1 to keep the sessions at a manageable length for children. We chose a combination of measures that showed developmental continuity and change in Study 1—namely, the *stability*, *heritability*, and *insides* measures. Each measure was administered exactly as in Study 1.

Children completed each measure twice, once about Americans and once about Canadians. The measures were blocked by nationality, and randomized within block. Additionally, the order of the American and Canadian blocks was counterbalanced across participants.⁴

Children did well again on the control questions that accompanied the insides measure (i.e., whether one could tell a person's nationality by asking questions vs. finding out the person's age): 88.6 versus 20.3% agreement for the "asking questions" versus "age" questions, respectively, on the American trials, and 88.6 versus 25.7% agreement on the Canadian trials; $ps < .001$ by sign tests.

Results and Discussion

The various aspects of children's concepts of national groups did not intercorrelate (Cronbach's $\alpha_{American} = .03$ and $\alpha_{Canadian} = .28$; see Table 3 for correlation matrix), providing further evidence of the multifaceted nature of essentialism in childhood. Thus, similar to Study 1, we analyzed children's responses to these measures with a mixed-effects multilevel model in which we included a three-level "measure" factor (stability vs. heritability vs. insides). In addition, this model included fixed effects for children's age, the national group we asked about (American vs. Canadian), and all two- and three-way interactions between the measure factor, age, and national group. A random intercept for participant was also included.

This model revealed no significant main effects or interactions involving national group. That is, children's reasoning about Americans (with respect to the stability, heritability, and insides measures) did not differ significantly from their reasoning about Canadians. Moreover, as in Study 1, essentialist conceptions of nationality declined overall with age, $b = -.04$, $SE = .02$, $z = -1.88$, $p = .060$, although this aggregate slope was only marginally significant in this study. The corresponding slopes for American and Canadian targets were not significantly different from each other ($b_{American} = -.02$ vs. $b_{Canadian} = -.05$; $p = .149$). Again, however, this overall decrease masked considerable heterogeneity among the age trajectories of the individual measures (see Figure 3). Endorsement of both measures of biological essentialism—heritability and insides—decreased significantly with age (heritability: $b = -.08$, $SE = .03$, $z = -2.94$, $p = .003$ [$b_{American} = -.05$ vs. $b_{Canadian} = -.10$; $p = .215$]; insides: $b = -.08$, $SE = .03$, $z = -3.08$, $p = .002$ [$b_{American} = -.07$ vs. $b_{Canadian} = -.09$; $p = .749$]). In contrast, children's endorsement of the belief that membership in a national group is stable increased slightly with age, just as it did in Study 1, $b = .05$, $SE = .03$, $z = 1.86$, $p = .062$ ($b_{American} = .07$ vs. $b_{Canadian} = .03$; $p = .348$).

As in Study 1, we also observed a main effect of measure, Wald's $\chi^2 = 92.6$, $df = 2$, $p < .001$. Bonferroni-adjusted pairwise comparisons of the marginal means revealed that, as before, stability scores were significantly higher than scores for either heri-

⁴ Children were also asked a few exploratory questions that served as pilots for the attitude questions we administered in the next study (Study 3; see below).

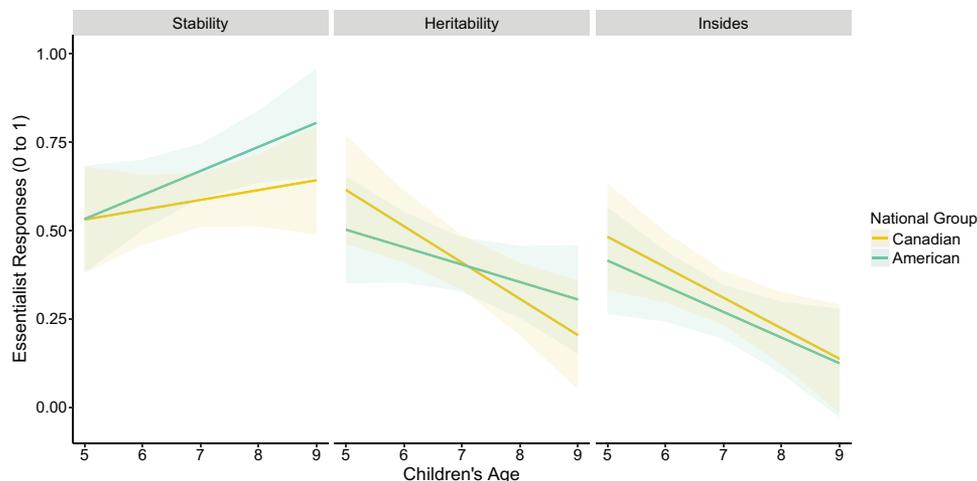


Figure 3. The relationship between age and each measure of national group concepts in Study 2, by national group (Canadian vs. American; 95% confidence intervals shown). See the online article for the color version of this figure.

tability or insides ($p < .001$), and heritability scores were significantly higher than insides scores ($p = .003$).

The results of Study 2 mirror those of Study 1, suggesting both continuity and change in children's concepts of national groups: continuity with respect to seeing membership in a national group as a stable aspect of a person, and change with respect to seeing nationality as inherent in one's biology (a belief that was more prevalent among younger than older children; see Figure 3). Moreover, the similarity in children's reasoning about Americans and Canadians suggests that these conclusions pertain to children's general concepts of national groups rather than their beliefs about their national ingroup specifically.

In Study 3, we investigated the links between children's concepts of national groups and their attitudes toward national outgroups. In particular, we examined whether individual differences in children's essentialism about national groups predict their (a) views that inequalities that favor the national ingroup are legitimate and fair, and (b) views of the national ingroup as better than national outgroups (i.e., proto-nationalism).

Study 3

Method

Participants. Participants in Study 3 were 72 children aged 5 to 8 (36 boys, 36 girls; $M_{age} = 6.94$ years, $SD = 1.12$) who were tested either in a university lab or in a quiet room at their school. Two additional children were tested but excluded from the final sample because they refused to complete the study. Demographic information was provided by 59 participating families. A majority of participants (79%) were European American and came from homes in which the primary caregiver earned at least a bachelor's degree (83%). The median household income was in the range from \$80,000 to \$99,000.

Materials and procedure. We administered measures of children's (a) concepts of national groups, (b) rationalization of in-

equalities, and (c) proto-nationalism. The order of these measures was counterbalanced across children.

Concepts of national groups. We added the inductive potential measure from Study 1 to the set of three measures used in Study 2 (stability, heritability, and insides; Cronbach's $\alpha = .02$). The order of the four measures was counterbalanced across children. Participants made judgments about American targets.

As in previous studies, children did well on the control questions that accompanied the insides and inductive potential measures. For the insides measure, 88.9 versus 22.2% of children thought that one can determine a person's nationality by asking them questions versus finding out their age, respectively, $p < .001$ by a sign test. For the inductive potential measure, children were significantly more likely to use national group membership to make inductive inferences about preferences than about properties that should not in principle generalize within a group (e.g., handedness), $M_s = 75.7$ and 59.0% same-nationality selections, respectively, paired $t(71) = 3.31$, $p = .002$.⁵

Rationalization of inequalities. We measured whether children believed that inequalities favoring the national ingroup (i.e., Americans) are legitimate and fair. The two items in this measure portrayed Americans as having an economic advantage over two different, unfamiliar non-American groups (e.g., "Americans tend to have a lot more money than Daxians"; adapted from Hussak & Cimpian, 2015). To facilitate children's understanding, we showed them pictures of an American flag and a non-American flag while presenting the inequality information. Children were asked three

⁵ As in Study 1, children generalized the control properties (e.g., handedness) to same-nationality characters more often than expected by chance (50%), one-sample $t(71) = 2.13$, $p = .036$. However, and also similar to Study 1, the number of same-nationality selections was smaller for the subset of children who received the two control properties first ($M = 54.2\%$) and was not significantly different from chance, one-sample $t(11) = 0.36$, $p = .72$, reinforcing the possibility of spillover from the critical trials (i.e., the trials that involved inferences about preferences).

questions about each inequality, in random order: (a) whether they thought it was fair that Americans had an advantage, (b) whether they thought the inequality was OK, and (c) whether Americans deserved their advantage. For the questions that asked about whether the disparity was fair or OK, we asked children to elaborate their initial “yes”/“no” responses on a six-point scale (“really not fair/OK” = 1 to “really fair/OK” = 6). For the third question (about whether Americans deserve their advantage), “yes” responses were scored as 1 and “no” responses as 0. Children’s responses were standardized and averaged into a *rationalization of inequality* composite score (Cronbach’s $\alpha = .65$).

Proto-nationalism. To assess children’s proto-nationalist attitudes, we administered a modified version of the Preschool Racial Attitudes Measure II (PRAM; Williams, Best, & Boswell, 1975). The PRAM II is a well-validated measure of children’s early racial prejudice; for example, this measure is correlated with behavioral measures such as playmate preferences and doll choice (e.g., Mabe & Williams, 1975; Nagata, 1985). On each of the 12 trials in our modified version of this task, participants were shown pictures of two children (1 American and 1 non-American, with corresponding flags in the background) and asked to choose which of them had a particular trait (e.g., “Here are two little boys. One of them is a selfish little boy. He doesn’t share his toys with his brother. Which is the selfish little boy?”). A different non-American flag was used on each trial; nationalists tend to see their country as superior to all others (rather than a particular one)—varying the non-American outgroup across trials was intended to capture the breadth of this sentiment. Children made judgments about six positive traits (e.g., kind, smart, and helpful) and six negative traits (e.g., mean, selfish, and grumpy). All children in the pictures were White and gender-matched with the participant (i.e., boys only saw pictures of boys). Nationality assignment of the children in the pictures was counterbalanced across participants. Picture placement was randomized, so that the American children appeared on the right and on the left approximately equally often. For the positive traits, children received a score of 1 if they chose the American child and 0 if they chose the non-American child; this scoring was reversed for the negative traits. Children’s scores were averaged across the 12 trials to create a *proto-nationalism* composite (Cronbach’s $\alpha = .28$).⁶

Results and Discussion

Children’s concepts of national groups. As in Studies 1 and 2, children’s concepts of national groups became overall less essentialist with age, $b = -.05$, $SE = .02$, $z = -3.17$, $p = .002$, with substantial variability across dimensions (stability: $b = .01$, $SE = .03$, $z = 0.25$, $p = .805$; heritability: $b = -.12$, $SE = .03$, $z = -3.51$, $p < .001$; insides: $b = -.04$, $SE = .03$, $z = -1.14$, $p = .253$; inductive potential: $b = -.06$, $SE = .03$, $z = -1.94$, $p = .053$; see Table 4 for correlation matrix). There was also a main effect of measure, Wald’s $\chi^2 = 101.6$, $df = 3$, $p < .001$. Bonferroni-adjusted pairwise comparisons revealed a pattern of differences that paralleled those in prior studies (e.g., scores on the inductive potential measure were significantly higher than all others; scores on the insides measure were significantly lower than all others; see Table 1 for means).

Relation to attitudes about inequality. Next, we examined the relationship between children’s concepts of national groups and their tendency to rationalize American-favoring inequalities.

We conducted a linear regression in which we predicted the extent to which children thought these inequalities were legitimate based on the four dimensions of their concepts of national groups (stability, heritability, insides, and inductive potential), children’s age, and the two-way interactions between each dimension and age. We expected that some aspects of children’s concepts would relate to children’s inequality-justifying attitudes, but we did not have strong a priori predictions about which specific aspects would do so; prior research on this topic has generally used composite measures of essentialism (e.g., Rhodes et al., 2018) rather than separate dimensions, as we do here.

The results revealed that thinking national identity and associated features are heritable was a marginally significant predictor of children’s endorsement of ingroup-favoring inequalities, $\beta = .24$, $p = .065$ (see Table 5 for the full results of the regression). In addition, the regression model revealed a significant interaction between the inductive potential dimension and children’s age, $\beta = .38$, $p = .010$. As illustrated Figure 4A, the relationship between inductive potential scores and endorsement of inequalities was negative among younger children, which was unexpected. However, with age, the belief that a person’s nationality is informative became increasingly likely to license inequality-rationalizing attitudes: The stronger was older children’s expectation that a person’s nationality conveys rich information about them, the more accepting they were of status inequalities favoring their own national group.

These findings are the first we know of to document a link between (aspects of) children’s essentialist conceptions of national groups and their acceptance of economic disparities between such groups. Prior work had found a similar link with race-based (e.g., Mandalaywala et al., 2017; Williams & Eberhardt, 2008) and gender-based (Morton et al., 2009) inequities. However, it is also important to keep in mind that these analyses were partly exploratory: Although we expected that one or more dimensions of essentialism would relate to inequality-justifying attitudes, we did not have strong a priori predictions about *specific* dimensions, so these findings should be interpreted with caution until replicated in subsequent work.

Why might the heritability and inductive potential measures have predicted children’s defense of the status quo in these data? One possibility is that children who score high on these measures may be more likely assume that (a) national groups differ in their traits and characteristics (inductive potential), and that (b) many of these differences are inherent rather than acquired (heritability). These presumed inherent differences may then influence how children make sense of why Americans have more than other groups. To the extent that children’s intuitive explanations for wealth disparities between nations invoke such inherent differences, children may also conclude that the disparities are fair and justified (Hussak & Cimpian, 2015, 2018). For example, if Americans have more money than Daxians because they are inherently

⁶ The α for this measure was surprisingly low, so we investigated further. Three of the 12 traits showed (slightly) negative correlations with the average of the other traits (“helpful,” “wonderful,” and “unfriendly”). When these items were removed, the α increased to .42, but pattern of significant results remained the same (see the Results and Discussion section). Thus, we retained all 12 traits in our analyses.

Table 4
Intercorrelations Among the Measures of Essentialism, Participants' Age, and Outgroup Attitudes in Study 3

Variable	1	2	3	4	5	6	7
1. Age	1	.03	-.37**	-.14	-.22 [†]	.07	-.17
2. Essentialism: Stability		1	-.03	-.16	.07	-.06	.07
3. Essentialism: Heritability			1	.22 [†]	.05	.12	.24*
4. Essentialism: Insides				1	-.14	-.11	.20 [†]
5. Essentialism: Inductive Potential					1	-.13	.05
6. Proto-nationalism						1	.14
7. Rationalization of inequality							1

Note. $N = 72$.

[†] $p < .10$. * $p < .05$. ** $p < .01$.

smarter, then they deserve their wealth, and the income disparity is reasonable.

Relation to proto-nationalism. A linear regression model with the same predictors as above was used to examine the relationship between children's concepts of national groups and their proto-nationalism (see Table 6). The only significant predictor in this model was the interaction between the insides dimension and children's age, $\beta = .32, p = .012$. With age, the children who thought that nationality is manifested physically inside a person's body also became likely to adopt nationalistic attitudes, assigning more positive and fewer negative traits to members of their own national group (see Figure 4B). Note that, among adults, a general belief in biological essentialism is a significant predictor of both nationalism and patriotism (Keller, 2005). Our findings suggest that the origins of this link may stretch all the way back to childhood. However, as with the prior set of findings, we did not predict a priori that it would be the insides measure that relates to proto-nationalism; confirmation of these findings in future work is needed to confidently claim that biological essentialism per se predicts nationalism among children.

Mini Meta-Analysis of Studies 1–3

The measures of essentialism used in the three studies reported here were largely overlapping. Thus, we had the opportunity to meta-analyze the results across Studies 1–3 ($Ns = 70, 70,$ and $72,$

respectively) to assess the developmental trajectory of essentialist conceptions of national groups with a greater degree of precision. Such mini meta-analyses across the studies in a single paper are increasingly common because they provide a means of more robustly estimating the magnitude of the relationships under investigation (e.g., Cumming, 2014; Goh, Hall, & Rosenthal, 2016). Four measures of essentialism were tested in more than one study and were thus eligible for inclusion in this meta-analysis: heritability, insides, stability—which were included in all three studies—and inductive potential, which was included in Studies 1 and 3. Because children's responses did not differ for American versus Canadian targets in Study 2, we included the overall estimates from this study rather than those for American targets specifically. The *metan* command in Stata 13.1 was used to calculate random-effects meta-analytic estimates.

The results reinforced the conclusion that, with age, children become less likely to see national group membership as a matter of biology. Both the heritability measure, $b_{meta} = -0.080, 95\% \text{ CI} [-0.116, -0.044], z = 4.33, p < .001$, and the insides measure, $b_{meta} = -0.077, 95\% \text{ CI} [-0.115, -0.039], z = 4.02, p < .001$, showed significant decreases with age.⁷ The results for the inductive potential measure suggested that the perceived informativeness of national group membership also declined somewhat with age, but this decline was not statistically significant, $b_{meta} = -0.032, 95\% \text{ CI} [-0.096, 0.033], z = 0.97, p = .33$. Finally, and in contrast to the other measures, children's expectations about the stability of national group membership showed a small (and nonsignificant) increase with age, $b_{meta} = 0.028, 95\% \text{ CI} [-0.006, 0.062], z = 1.63, p = .10$.

General Discussion

In an age of increasing nationalistic fervor, it seems critical to understand from a scientific standpoint why membership in a national group is such a powerful force in people's psychological lives. We took a developmental approach to answering this question by exploring the roots of national group concepts and their

⁷ Speculatively, these results could be interpreted as a developmental shift away from an *ethnic* conception of national groups, which defines these groups in terms of ancestry and descent. Ethnic conceptions of national groups are often contrasted with *civic* conceptions, which focus instead on adherence to a set of ideals and institutions (e.g., Meeus et al., 2010; Wakefield et al., 2011).

Table 5
Linear Regression Predicting Children's Rationalization of Ingroup-Favoring Inequalities on the Basis of Their Concepts of National Groups and Their Age in Study 3

Predictor	β	t	p
Age	-.11	-.82	.414
Stability	.12	1.07	.288
Stability \times Age	-.03	-.22	.823
Heritability	.24 [†]	1.88	.065
Heritability \times Age	.01	.05	.961
Insides	.17	1.34	.184
Insides \times Age	.13	1.07	.290
Inductive Potential	-.04	-.33	.739
Inductive Potential \times Age	.38*	2.65	.010

Note. All variables were standardized before inclusion in the model.

[†] $p < .10$. * $p < .05$.

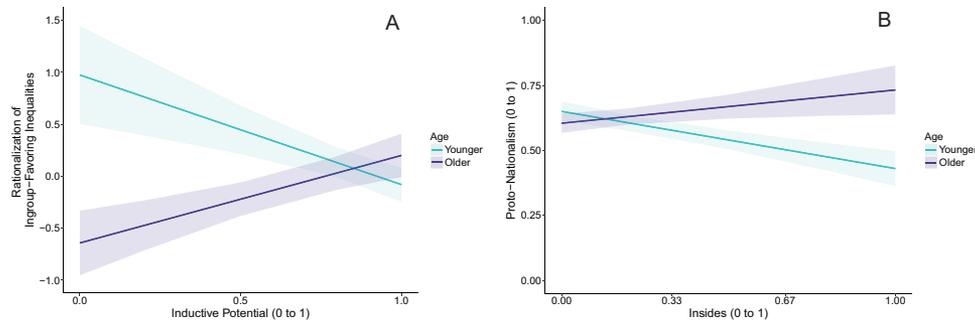


Figure 4. The relationship between concepts of national groups and rationalization of ingroup-favoring inequalities (A) and proto-nationalism (B) for younger and older children ($-1 SD$ [5.82 years] and $1 SD$ [8.07 years] from the average age, respectively). Confidence bands represent *SEs*. See the online article for the color version of this figure.

relation to intergroup attitudes. We found that young children, more so than older children and adults, believe that national groups are to some extent biological in nature. This view that national group membership is reflected in a person's (inherited) biology declined substantially with age. However, other facets of national group concepts changed little with development. In particular, the idea that national groups are meaningful and nonarbitrary (even if not in a biological sense) remained fairly constant across development: Children and adults alike thought that an individual's nationality is a stable aspect of their identity that is informative about who they are as a person and that goes beyond the formalities of citizenship. Thus, the early developing belief that nationality tracks "deep," meaningful aspects of the social world appears to remain a part of adults' concepts of national identity, providing further insight into why these concepts are psychologically powerful.

Our data also document the gradual alignment between children's concepts of national groups and their attitudes toward such groups. With age, the notion that membership in a national group is more than a formality began to link up with attitudes that defended the national ingroup's advantages and portrayed it as superior to other national groups. Thus, surprising as it may seem, the nationalist sentiments seen among adults may be partly rooted in psychological processes that are at work within the first decade

of life. The set of developmentally early, intuitive beliefs identified here are consistent with such sentiments and might play a role in fomenting them.

Theoretical Contributions to the Literature on Essentialism

In addition to providing new insights into the development of national group concepts and associated phenomena (e.g., nationalism), the present findings make several contributions to the literature on psychological essentialism. First, these findings provide the first evidence we know of that, relative to older children and adults, young children are more likely to assume national groups to have a causal, biological essence. The meta-analysis revealed a robust decline across age in children's endorsement of the idea that nationality and associated properties are reflected in a person's biology (blood, bones, etc.) and inherited from one's biological parents. We should note, however, that while young children endorsed these ideas more than older children and adults, in absolute terms their endorsement was middling. Nevertheless, even moderate endorsement of the idea of nationality as a biological feature is striking when juxtaposed against the input that children in these studies were likely to have received. The United States has a long history of immigration; in addition, the citizens of the United States are also relatively diverse demographically, and the country's laws grant citizenship to anyone born within its borders (regardless of parental nationality). This is all evidence against a biological concept of nationality. The fact that children growing up in the United States showed *any* tendency to essentialize national groups in biological terms is striking and highlights the appeal of this conceptual assumption in early childhood (see also Astuti, Solomon, & Carey, 2004).

Second, our findings hint at the presence of Platonic essentialism in children's concepts (as opposed to the causal essentialism investigated in prior work; e.g., Gelman, 2003). Recent theoretical arguments have brought to light the relevance of Platonic ideals to people's intuitive conceptions of the world (e.g., Knobe et al., 2013; Newman & Knobe, in press). Specifically, concepts of some categories seem to cohere psychologically because the members of these categories are assumed to instantiate or approximate some abstract ideal. For example, poems vary widely in terms of their surface features (length, meter, rhyming pattern, etc.) but are

Table 6
Linear Regression Predicting Children's Proto-Nationalism on the Basis of Their Concepts of National Groups and Their Age in Study 3

Predictor	β	<i>t</i>	<i>p</i>
Age	.12	.86	.391
Stability	-.05	-.40	.690
Stability \times Age	.08	.64	.526
Heritability	.20	1.55	.125
Heritability \times Age	-.03	-.24	.815
Insides	-.08	-.66	.514
Insides \times Age	.32*	2.59	.012
Inductive Potential	-.14	-1.07	.287
Inductive Potential \times Age	.03	.22	.826

Note. All variables were standardized before inclusion in the model.

* $p < .05$.

nevertheless conceived as members of the same category because they are written as a means of realizing some deeper aesthetic value.

Although we know of no prior research on whether national group concepts are essentialized in this Platonic sense, it seems likely to us that they are. (In fact, in adults it may be the only way they are essentialized.) That is, people might conceive of national groups not just in terms of the formalities of citizenship but also in terms of an abstract essence—a set of core values. For example, imagine an individual who is legally a U.S. citizen but hates freedom and democracy and would enjoy seeing their country led by a dictator (Knobe et al., 2013). Although, in a sense, this hypothetical individual is clearly American, it also seems felicitous to say that they are not a *true* American because they fail to possess the core values of their group—just as it seems felicitous to say that a scientist who wears a lab coat and does experiments but does not care about the truth is not a true scientist.

Children's answers to some of the open-ended questions in our studies hinted that they may conceive of national groups in a similar way. Although their ideas about the deeper values that underpin national groups are likely to be placeholder-like initially—as suggested by the fact that children supplied a wide range of candidate values when asked what it means to be American (from “being good” to “fighting wars so you can go to church”)—these ideas may narrow as children acquire the consensual beliefs of their culture. More broadly, this finding suggests that Platonic essentialism may also characterize some of children's concepts, a topic that is so far underexplored.

Related to the distinction between causal and Platonic essentialism, a third contribution of this work is that it highlights the importance of including, and analyzing separately, a range of measures of essentialism, which might tap dissociable dimensions of this construct. The measures of essentialism we included in our studies were only weakly intercorrelated (see Tables 2–4), and they also showed consistently different trajectories with age. For example, the measures that tapped the notion of a biological essence (insides and heritability) were negatively related to age across studies, but the measures of stability and inductive potential were not. These differences would have been overlooked had we used an aggregate measure of essentialism. Although we are not the first to find that different measures of essentialism are dissociable in childhood (see Gelman et al., 2007), researchers studying essentialism have generally either used composite measures that average across several dimensions or, more commonly, used a single measure of essentialism. One contribution of this work is to underscore that essentialism is most likely a multidimensional construct. We hope that findings such as these will spur further theoretical development to identify the broad dimensions that underlie essentialist intuitions and will prompt researchers to pay closer attention to the issue of how we measure essentialism, which is not trivial.

Limitations and Future Directions

Our studies provide a first attempt to chart the structure of national group concepts across development; much remains to be explored. For instance, administering tasks such as ours in samples of children from other nations will be critical. Nations vary enormously in their demographic composition, in the laws and regu-

lations that govern citizenship, and so on. This variability is likely to shape the development of children's ideas about national groups. A child growing up in a country where nationality is isomorphic with ethnicity may provide different answers to our questions than the American children we interviewed. Given that the “nation of immigrants” narrative is so common in the United States, the fact that our participants were American provided a conservative test of whether children essentialize national groups. It is not unreasonable to expect that essentialist conceptions could be even stronger and more widespread in other parts of the world. On the other hand, we should also note that Americans exhibit unusually high levels of national pride (Smith & Kim, 2006), which could suggest to children growing up in this country that nationality is a central part of one's self-concept. Future work with children from other nations could disentangle these competing predictions.

Another limitation of our studies is that we did not independently assess how children understood the term “American” or how they represented the content (i.e., intension) of the concept denoted by this term. In principle, it is possible that children understood this term differently—or less well—than adults, and were operating with a different concept. Although our studies do not speak to this issue directly, some of the open-ended questions in Study 1 might provide an indirect assessment of whether children had a radically different interpretation of the term “American” from adults. In particular, the questions that asked children (a) what it means to be an American and (b) how one becomes an American, which we previously coded for signs of essentialism, might also provide some insight into whether children were operating with a fundamentally different concept from adults. To investigate this issue, we asked two independent coders (blind to our research questions and to children's age) to judge, based on the responses to these two questions considered together, whether each child understood the question to refer to a national group (1 = *no*, 2 = *maybe*, 3 = *yes*). We made clear to the coders that they were not rating the accuracy of children's responses but rather simply whether their answers revealed that they understood the question to be about a national group. For example, “you live in America” is not entirely correct as an answer to the question of how one becomes an American, but it nevertheless reveals that the child understood the question to be about the right sort of social group—that is, a group of people that (tend to) live in a particular place or country.⁸ The children in Study 1 scored well on this measure, $M = 2.46$ (on a 1–3 scale), $SD = 0.84$, which suggests that they understood the meaning of “American” in ways that resemble those of adults; in fact, the average score was significantly above the midpoint of the scale, one-sample $t(69) = 4.60$, $p < .001$. The scores on this measure did increase with age, $r(68) = .44$, $p < .001$, indicating that older children's answers more clearly reflected an understanding of “American” as referring to a national group. However, even when looking at the younger half of the sample ($M_{\text{age}} = 6.08$ years), the average score was numerically

⁸ To assess agreement between the coders, we calculated an average-measures two-way random-effects intraclass correlation coefficient (McGraw & Wong, 1996), $ICC(A, k) = .73$, 95% CI [.56, .83], which indicated good reliability (Cicchetti, 1994). The ratings for each child were averaged to derive a final score, except in cases where they were two points apart; in these cases, the final rating was decided via discussion.

above the scale midpoint ($M = 2.19$, $SD = 0.92$), though not significantly so, one-sample $t(35) = 1.27$, $p = .21$. Taken together, these results suggest that children generally understood our questions as intended; however, in future work it would be useful to include measures that assess this matter more directly and comprehensively. It is also worth noting that our use of children's open-ended responses to questions about what it means to be and how one becomes an American may be conservative—that is, children may have given immature-sounding answers (and, thus, received low ratings) because the questions themselves were difficult, not because they did not understand the words we were using.

In future work, it may also be useful to compare, using the same measures, the developmental trajectory of children's essentialist views of nationality versus other social groups. For example, certain aspects of essentialism decrease over time even for social categories that are robustly essentialized, such as gender (e.g., Taylor et al., 2009). It would be informative if the declines in essentialism over the early childhood years followed a parallel course for gender and nationality; such a result would perhaps suggest that children's reasoning about a wide range of social groups is underlain by similar processes and influenced by similar types of information. Another potentially useful comparison may be a shallow social category that we would not expect children to essentialize (e.g., people who wear purple). Divergences in the developmental trajectory of children's thinking about a category of this sort versus nationality would further suggest that children understand the referent of the term "American" and reason about this category accordingly (as opposed to treating it like an unfamiliar, generic social category).

Another fruitful direction for future research may be to examine whether children's thinking about national group membership depends on whether they themselves, or close family members, are immigrants or citizens of a different country. Our sample was not diverse enough to allow this sort of comparison: Although we did not ask directly about immigration or citizenship status (which may be sensitive information for some families), an optional demographics form allowed parents to indicate what languages were spoken in the household, which is a reasonable proxy for whether children's families included members of other national groups. Of the parents who filled out this information, only 4.5% mentioned that a language other than English was (also) spoken in the household; this sample size is inadequate for testing moderation by children's prior exposure to immigrants. However, this is an important question to explore in future work—for example, we might expect children who know people who have switched national group membership to exhibit less essentialism about this social dimension. More generally, such work would add to our understanding of why, and under what circumstances, children essentialize some social groups but not others.

Conclusion

To conclude, the present research provides a comprehensive developmental investigation of the structure of national group concepts. In addition to its contribution to theory on the development of social cognition, this work provides a unique source of insight into current sociopolitical trends that prioritize national interests over globalization and cosmopolitanism.

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