Humans are capable of categorizing people according to many dimensions, including age, athletic team affiliation, gender, occupation, race, and religion. Recognized social distinctions can also vary significantly from one culture to another. For example, whether one is a Hutu or a Tutsi is relevant in Rwanda, but not in Israel. The range and flexibility of social categorization across different contexts have led some to posit that the human propensity for social categorization may arise from a set of general mechanisms. Applied to the development of social categories in children, this might mean that humans come into the world able to divide the social world any which way. Certain distinctions could rise to prominence due to environmental influences (e.g., labeling by adults, de facto segregation), but the same processes account for the emergence of all social categories (Bigler & Liben, 2007).

The proposition that children and adults possess a general, flexible capacity for learning about social categories has received considerable empirical support in developmental and social psychology. Additionally, general-purpose social categorization is a parsimonious and satisfying way to account for the diversity of social categories across time and place. But is a general learning account the right way to think about the development of all social categories? Or are children predisposed to classify their social world according to some dimensions?

I would like to propose that gender is a social category whose development and prominence might be supported by a special cognitive system. Unlike many other human category distinctions (e.g., Catholics and Protestants; Packers and Vikings fans; Blacks and Whites), males and females exist in nearly every society. Moreover, being able to classify others according to gender is relevant to at least one important activity of our species: namely, reproduction. For these reasons, evolutionary psychologists have suggested that humans evolved cognitive machinery dedicated to gender categorization (Cosmides, Tooby, & Kurzban, 2003). As evidence in favor of this proposal, researchers point to experiments showing that gender encoding—unlike, race encoding—is automatic and difficult to suppress in adults (Kurzban, Tooby, & Cosmides, 2001).

Most adults have had extensive opportunities to learn about males and females and practice gender categorization. Do creatures with less social experience also consider gender? Indeed, young infants classify novel faces by gender when tested with looking-time procedures (Quinn, Yahr, Kuhn, Slater, & Pascalis, 2002) and most 2-year-old children can label and sort photographs of themselves and others according to gender (Weinraub et al., 1984). Children not only detect gender at an early age, but they also use gender to guide inferences and social evaluations (see Ruble, Martin, & Berenbaum, 2006). Perhaps the most robust and reliable phenomenon in the gender development literature is children’s early tendency to prefer others who match their own gender. Children as young as 2 years of age display gender segregation in naturalistic settings (Maccoby & Jacklin, 1987) and preschoolers demonstrate own-gender favoritism in controlled laboratory settings (Martin, 1989; Shutts, Roben, & Spelke, in press).

It is important to note that children detect, make inferences, and develop preferences based on other social category distinctions as well. However, gender appears unique in its early emergence and influence on young children. Studies that directly compare young children’s use of gender to another social category marked by visual information—namely, race—make this point most clearly. For example, when asked to select potential friends from photograph pairs consisting of either a boy and girl or a White and Black child, 3- and 4-year-old children showed reliable
preferences for children of their own gender but chose randomly between same- and other-race photographs (Abel & Sahinkaya, 1962; Shutts et al., in press). Additionally, after seeing novel objects and endorsed by pairs of people who differed either by gender or by race, 3-year-old children modeled their own choices of items after those of same-gender children; participants' use of race was less reliable (Shutts, Banaji, & Spelke, 2010). Outside the domain of preferences, studies focused on children's social concepts indicate that young children view gender distinctions as more objectively determined and inductively powerful than racial categories (Rhodes & Gelman, 2009; Waxman, 2010).

The similarity of children's gender-based social preferences both within and across cultures also underscores the power of gender, especially when viewed in comparison to variation in children's race-based social preferences. For example, both boys and girls from different racial groups and communities in Africa, Europe, North America, and South America show robust in-group favoritism on tasks designed to measure gender attitudes (e.g., De Guzman, Gustavo, Ontai, Koller, & Knight, 2004; Maccoby & Jacklin, 1977; Shutts, Kinzler, Katz, Tredoux, & Spelke, 2011; Yee & Brown, 1994). In-group favoritism based on race, however, is noticeably absent in some groups of children. For example, White children in Europe, North America, Oceania, and South Africa tend to prefer members of their own racial group over other groups; but, children from other racial and ethnic groups (e.g., Black children in the U.S. and South Africa) do not tend to exhibit racial in-group favoritism (Aboud, 1988; Shutts, Kinzler, et al., 2011). In-group preferences based on gender seem to emerge across varied contexts, while racial preferences seem more sensitive to cultural factors. This idea is consonant with social dominance theory, which describes gender as a universal distinction and classifies race as one of many "arbitrary-set" categories that depend on sociocultural factors (Sidanius & Pratto, 2001).

Does the fact that young children classify others based on gender, and initially care more about gender than about race, provide sufficient evidence to support the claim that children are predisposed to divide the social world into males versus females? No. The obvious alternative explanation for the early emergence and resilience of gender is that environments provide children with information that gender is a critical distinction. Such information could include language (e.g., labels and gendered pronouns), the promotion of gendered appearances (e.g., clothing, haircuts), and encouraged participation in gender-specific activities (e.g., toys marketed primarily to members of one gender; different restrooms for boys and girls). Any or all of these factors could account for why gender is such a salient and meaningful category for young children.

The long literature on "core knowledge" about aspects of the physical world (Spelke, 2004) provides guidance for research strategies that could shed light on whether humans are predisposed to consider gender categories (as well as other dimensions, of course). One suggestion is to study gender categorization and social preferences in creatures that have limited experience in the social world, namely, young infants. If young infants use gender information to guide their affiliation preferences and inferences about other individuals, this might suggest that children are predisposed to consider gender categories.

A second suggestion is to compare gender development in children whose environments lack specific properties that could contribute to the prominence of gender categories. This could include children who grow up in linguistic environments without gendered pronouns (e.g., Mandarin), as well as children being raised in gender-neutral environments. For example, with the help of the Bucharest Early Intervention Project, my colleagues and I recently examined gender preferences in institutionalized children who had spent their infancy and preschool years with limited exposure to gender distinctions. Boys and girls living in the institution were given identical haircuts, wore the same clothing, had minimal access to toys and play activities, and interacted (minimally) with adult females only. Despite this, both boys and girls in our sample showed significant preferences for unfamiliar children of their own gender (Shutts, Spelke, & Nelson, unpublished data). These findings suggest that gender-based, in-group favoritism can emerge without significant early exposure to highly visible gender contrasts, as well as without early participation in social environments that are explicitly organized by gender.

An additional suggestion for future research on whether gender is a privileged category is to identify unique signature patterns of gender categories.
in adults and test for those signatures in infants, animals raised under controlled conditions, and people living in varied cultures and environments. Again, this strategy has proven useful in identifying and understanding other potential cases of core knowledge in humans (Spelke, 2004). In the case of numerical cognition, for example, studies provide evidence for common systems underlying numerical representations in infants, nonhuman animals, and adults (Feigenson, Dehaene, & Spelke, 2004).

CONCLUSIONS
Humans—including those who have only been around for a handful of years—attend to a number of different social categories. An individual encountered on the street is not viewed simply as a person, but rather as female, Asian, and a Packers fan. Studies suggest, however, that gender may be a special category: Young children classify people by gender early in development (Weinraub et al., 1984); preschoolers use gender to guide their selection of social partners (Maccoby & Jacklin, 1987; Martin, 1989); and adults encode gender in an automatic and mandatory fashion (Kurzban et al., 2001). In contrast, very young preschoolers do not seem to exhibit robust racial bias (Abel & Sahinkaya, 1962; Shutt, et al., in press), and adults ignore racial group membership in the face of competing social alliance information (Kurzban et al., 2001).

As reviewed herein, there are important directions for future research on the origins of gender categorization. Although the question of whether humans are predisposed to consider gender as a meaningful distinction remains unanswered, psychologists are well situated to provide answers in the near future. Researchers have made significant advances in behavioral methods for testing infants' social preferences in recent years (see Chapter 5.12). Moreover, noninvasive tools for assessing cognitive processes over development (e.g., event-related potentials [ERPs], near-infrared spectroscopy [NIRS]) may also prove helpful in studies of social categories and preferences. Additionally, researchers who specialize in studies of nonhuman animals have also become interested in the emergence of social categories and intergroup biases (e.g., Mahajan et al., 2011). Because studies of nonhuman animals offer opportunities for controlled rearing, such research may provide particularly useful in understanding factors supporting the emergence of different social categories. The availability of new methods, together with increased cross talk between developmental and social psychologists, makes the present moment an exciting and fruitful time to be studying social categorization and intergroup preferences in children.

REFERENCES


