

Opinion

How generic language shapes the development of social thought

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Generic language, that is, language that refers to a category as an abstract whole (e.g., ‘Girls like pink’) rather than specific individuals (e.g., ‘This girl likes pink’), is a common means by which children learn about social kinds. Here, we propose that children interpret generics as signaling that their referenced categories are natural, objective, and have distinctive features, and, thus, in the social domain, that such language affects children’s beliefs about the social world in ways that extend far beyond the content they explicitly communicate. On this account, even generics expressing uncontentious content (e.g., ‘Girls are great at math’) can lead children to think of categories as defining fundamentally distinct kinds of people and contribute to the development of stereotypes and other problematic social phenomena.

Highlights

Generic language contributes to the development of essentialist beliefs about social kinds beginning early in childhood.

Generic language affects children’s beliefs about social kinds because they interpret the use of generics as signaling objective and natural differences between people.

Given the inferences that children draw about category structure, the effects of generics are sometimes invariant to their content in unexpected ways

How generic language shapes the development of social thought

Generic language about social categories, such as, ‘Girls wear pink’ or ‘A scientist cares about the truth’, refers to categories as abstract wholes rather than to specific members (e.g., ‘Those girls are doing ballet’ [1,2]. Such expressions (hereafter, ‘generics’) are frequent in everyday conversation with young children [3] across diverse topics (‘The lion is a noble beast’, ‘Barns are red’, ‘Gold is shiny’; Box 1), including social categories (‘Muslims celebrate Ramadan’, ‘A boy doesn’t cry’, ‘Italians eat pasta’ [4,5]; Box 2). Generics often sound innocuous (e.g., ‘Girls wear pink’), but people, especially children, interpret them in ways that go beyond their explicit content, instead describing features that are distinctively prevalent (e.g., to imply that many girls wear pink, and that more girls than boys do) [6,7], inherent (e.g., that girls are born preferring pink) [8–10], normative (e.g., that girls are supposed to like pink) [11], and inflexible (e.g., that is impossible or impermissible for girls to like other colors) [12]. Generics also affect how children and adults think about the referenced categories more generally, leading to assumptions that such categories (e.g., girls) are coherent, objective, natural, and defined by an intrinsic essence [13,14] (Box 3). In turn, these essentialist beliefs can make a social category a target of stereotyping and social bias [15]. Here, we consider the mechanisms underlying these effects and their implications for how to limit some of the negative consequences of social essentialism and promote prosocial development.

Generics contribute to social essentialism

Evidence that generics contribute to the formation of essentialist beliefs comes from experimental studies manipulating the language that children hear when learning about new categories [12–17]. In these studies, participants were introduced to a novel group, for example, people called ‘Zarpies’, via a series of individuals with idiosyncratic features (e.g., one disliked ice cream; another ate flowers; Figure 1). Across conditions, participants heard generics (‘Zarpies love to eat flowers’), specific labels (‘This Zarpie loves to eat flowers’), or no labels (‘This one loves to eat flowers’). Exposure to generics increased children’s (and adults’) essentialist beliefs about Zarpies relative to the other two conditions, meaning that participants who were introduced to the novel category with generics subsequently viewed the category features as intrinsic and inborn (e.g., that Zarpies are born loving to eat flowers

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Box 1. How to identify generic utterances

The distinction between generic and nongeneric language is fundamentally a conceptual one: in the context of a generic statement, a noun refers to a category as an abstract whole rather than to an individual or set of individuals. Thus, 'Dogs are four-legged' is generic, but 'That dog is four-legged' or 'The dogs on my street are four-legged' are not. By 'abstract whole', we do not mean that the category is necessarily broad in scope, but rather that the generic encompasses the entire category (whether that category is broad, such as 'animal', or narrow, such as 'Chestnut-backed chickadee bird'). Thus, 'Chestnut-backed chickadee birds eat seeds and plant matter' is a generic statement, even though it is about a specific category.

Despite the clarity of the conceptual distinction, determining whether a given utterance is generic is complex. There is not one linguistic expression that is uniquely and exclusively generic, in English or any language [46,67,69,70]. Instead, generics can be expressed with multiple forms, which can also be used for nongenerics. For example, in English, generics can be expressed with bare plural ('Birds lay eggs'), indefinite singular ('A cat is a feline'), definite singular ('The lion is a majestic beast'), or mass ('Milk is white') noun phrases, as well as pronouns (e.g., 'You only live once'; 'As Americans, we drive on the right side of the road'). Moreover, each of these forms can also be used in nongeneric expressions ('Birds are singing outside my window'; 'A cat showed up on my doorstep'; 'The lion roared loudly'; 'Milk spilled on the carpet'; 'You ran a red light back there'; 'We got caught in a rainstorm last night').

This means that identifying an expression as generic requires a variety of linguistic and nonlinguistic cues. These include: verb tense, aspect, and meaning; linguistic and nonlinguistic context; and paralinguistic cues (gesture and intonation). By preschool age, children are aware of, and make use of, both formal and pragmatic cues [26].

The range and flexibility of linguistic devices for expressing generics suggest that the core conceptual distinction between kinds and individuals is multiply informed by all the information at hand. It is for this reason that generics may be a linguistic default [71]: any indication of specificity excludes a generic interpretation, but there are indefinitely many ways to do so. This is consistent with the observation that, in many languages, generics are unmarked, meaning that they are the interpretation given to expressions that lack all markers of specificity.

and will grow up to do so regardless of their environment), broadly shared across the category (e.g., that many Zarpies love to eat flowers), and inflexible (e.g., that an individual Zarpie cannot love crackers instead), even though such inferences went far beyond the explicit content communicated by the language they heard. These findings persisted for at least several days after the language manipulation, held for both children (ages 4–9) and adults, and across conceptual domains (e.g., social and animal categories) [13,14]; they also began to emerge by 2.5–3 years of age [18,19], and had immediate consequences for social behavior (e.g., [16]) and evaluations [20].

Natural language studies provide converging evidence of these effects. In daily life, children hear categories referred to in many ways, from different speakers, in different contexts, with many

Box 2. How the use and consequences of generics vary across domains

Although we focus here on the consequences of generic language for social categories, generics are not limited to the social domain and, indeed, are not domain restricted in any way. Generics refer to categories in domains ranging from animals to foods to artifacts and so forth. The only constraint is that a generic, by definition, refers to a category, not an individual (e.g., 'Santa Claus') or set of individuals (e.g., 'the three squirrels in my yard'). Many of the features and consequences of generics apply beyond the social domain, including that a feature is distinctive [7], inherent [9], and normatively prescribed [72,73].

Although generics are licensed for any domain, they are more commonly expressed for some categories than for others. Generics are more frequently used when talking about animals than about artifacts, in both natural conversation [3,21,47] and experimental contexts that control for prior knowledge and perceptual complexity [74,75]. Categories that elicit more generics have clusters of known intercorrelated features (e.g., birds have feathers, wings, claws, beaks, hollow bones, and warm blood) [76,77], compared with categories that support generics less often, such as artifacts. Domain-specific theories also provide different causal accounts for the rich structure of animal kinds versus the sparser structure of artifact kinds. Notably, these aspects of category structure that support generics also support essentialist construals (see Box 3 in the main text). Thus, the role of generic language in essentialism is likely to differ across domains. For artifacts, there is not enough conceptual support for an essentialist construal; therefore, generic language is not predicted to elicit essentialism. For animals, essentialist assumptions are high even in the absence of language, due to rich visual and behavioral commonalities within a kind as well as naive biological reasoning about animal structure [78]. In contrast to both artifacts and animals, for social kinds, generic language is predicted to have a larger role, because categories are highly variable in their support of essentialist inferences. Given this variability, cultural input in the form of generic language may be especially powerful for social kinds [18,28,79].

Box 3. Defining psychological essentialism

Psychological essentialism is the intuition that, for certain categories, there is an underlying, hidden reality that causes a host of other features [80]. This is a cognitive bias that oversimplifies and distorts people's understanding of both the biological and social world [81–87]. Essentialism is a 'placeholder' concept, in that people believe there is an essence before specifying what the essence might be. How this placeholder gets filled in varies cross-culturally (e.g., [88–92]). Given that essentialism is not a direct 'reading' of reality, and that there is cultural variability in which categories are essentialized, social processes are important for transmitting and maintaining essentialist beliefs.

Following from its placeholder structure, essentialism is not a single, undifferentiated construct, but instead has separable strands that do not necessarily or consistently cohere [80,93]. In this sense, essentialism is not all-or-none but exists on a continuum, and any given social category may evoke one or more of these strands [93]. Researchers distinguish two broad essentialist assumptions: that a category is a natural kind (cutting 'nature at its joints') and that there is some underlying cause (e.g., blood or genes) that is responsible for membership in that natural kind. The 'kind' assumption supports ideas such as that boundaries between categories are strict or absolute, that category members share underlying, nonobvious similarities, or that category membership is immutable. By contrast, the 'cause' assumption supports that a category has a biological basis, that properties are passed down from parents to children, and so on. Either or both of these components apply to biological kinds (such as 'tigers'), social kinds (such as 'girls'), and natural substances (such as 'gold'), but neither component applies to artifact kinds (such as 'hammers'; see [94] for discussion of kind representations more generally). Some components are more directly linked to generic language than others (see Outstanding questions); thus, it is inappropriate to draw negative conclusions about the role of generics on essentialism from examining a single component (e.g., [33]).

Finally, essentialism has a host of consequences, both positive and negative. Negative consequences include reinforcing stereotypes and prejudice [95–97], racism and sexism [98], exaggerating group differences [99], misconstruals of science [85–87], and support of public policies that enhance boundaries between groups [100]. However, essentialism can also have positive consequences, at times leading to greater empathy (e.g., of LGBTQ individuals [101]) and strategically embracing perceived category differences and re-interpreting them as positive [102]. Whether essentialism has positive or negative consequences can depend on the component of essentialism that is measured [101] and the other causal theories that people consider for a particular group difference [55,103]. Unpacking the consequences of generic language for both essentialism and its sequelae requires precision in measurement and interpretation.

competing demands on their attention. However, despite this variation, the proportion of generics that children hear about categories in conversations with their parents relates to variation in essentialist beliefs [3,4,21–23]. For example, generics in parental speech correlate with child essentialism about gender [24] and ethnicity [5], as well as with child race bias [25].

How do generics have these effects?

We next consider the processes by which generic language has these effects. We propose that children draw inferences about category structure from hearing categories described generically, which are separable from those inferences related to the informational content of generic claims. These processes rest on what children think that generics imply about the structure of the relevant categories in the world, as well as what they think that such language signals about a speaker's beliefs and intentions.

We propose that, in the social domain, children assume that categories referenced by generics are objective kinds. We suggest that children do so because, when they hear a generic such as 'Boys play baseball', they recognize that the generic refers to an abstract kind ('boys') rather than to specific individuals (children make this linguistic distinction by age 2.5) [26,27] and, therefore, assume that the abstract kind 'boys' exist objectively in the world [28,29]. Furthermore, we suggest that language has these effects in the social domain because children have abstract expectations that some social categories (although not all) reflect objective, fundamental distinctions between people; therefore, children are 'on the lookout' for which social categories have this structure. Within this context, generics provide a powerful cue that a particular social category is such a kind. On this account, children's inferences from generics interact with their developing expectations about the structure of categories within particular domains and, thus, contribute to essentialism differentially across domains (Box 2). In addition, expectations about the types of category that are

Learning phase			
Zarpies are/This Zarpie is scared of ladybugs	Zarpies/This Zarpie bounce(s) a ball on their head	Zarpies/This Zarpie hate(s) ice-cream	Zarpies/This Zarpie can flip in the air
			
Test phase			
Explanations	Rigidity	Heritability	Homogeneity
			
Why does this Zarpie not like walking in the mud? Because a lot of Zarpies are afraid of mud (1) or because he doesn't want to get his shoes dirty (0)?	This Zarpie loves to eat flowers. Do you think it might also love to eat crackers (0), or only flowers (1)?	A baby was born to a Zarpie Mom but grew up with a not-Zarpie Mom. Will the baby grow up to have striped hair, like the Zarpie Mom (1), or not, like the not-Zarpie Mom (0)?	This Zarpie buzzes when she's angry. How many other Zarpies do you think buzz when they are angry? (scored 0-4)

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Figure 1. Overview of methods from Leshin *et al.* [12] and Benitez *et al.* [17] testing the experimental effect of generic language on essentialist thought. During the learning phase, children were introduced to a fictional category of people called, 'Zarpies', via a 16-page picture book that showed individual 'Zarpies', one at a time, each with a new feature. Between participants, each page was accompanied by a generic (e.g., 'Zarpies are scared of ladybugs') or specific (e.g., 'This Zarpie is scared of ladybugs') description. Then, in the test phase, children completed measures of their essentialist beliefs about Zarpies, including the extent to which they thought individual 'Zarpie behavior' was caused by category-related processes, rigid, heritable, and generalizable across the category. Example trials are shown here; children completed multiple items of each type; all items were scored such that higher numbers indicated more essentialist responses. Children who heard generic descriptions of 'Zarpies' subsequently endorsed more essentialist beliefs about the category compared with those who heard the specific descriptions.

candidates for essentialized kinds likely constrain the social categories for which generics will have these effects to those expressed with unmodified nouns (e.g., 'boys', 'Muslims', etc.) and prevent essentializing heavily modified noun phrases, such as in the case of 'hazel-eyed Brooklyn boys' (which are, in any event, rarely produced in natural speech).

Also contributing to these processes, children assume that speakers choose their words intentionally and interpret language in this context [30]. Thus, a parent who says, 'Boys play baseball', could have said, 'This boy plays baseball' or 'Kids play baseball', but chose to make the generic claim about 'boys'. Thus, children assume that the parent meant to say something distinctive about boys [31] and perhaps to communicate more generally that 'boys' is a coherent category with distinctive properties. Thus, by choosing to utter a generic, the speaker signals an intention to communicate a particular view of the category and its features, namely that the speaker views it as an abstract, objective, and coherent kind that supports generalizations [28,32].

Predictions

The processes just described make several unique predictions; in particular, that the effects of generics on essentialism in the social domain: Prediction 1; involve inferences about category

structure and are not reducible to the information that generics convey about category features; Prediction 2; are distinct from other ways of learning about categories and their features; and Prediction 3; depend on the communicative context.

Prediction 1: generics elicit inferences about category structure

Generics can express all sorts of claims: biological (e.g., ‘Girls have ovaries’) and social (e.g., ‘Girls wear pink’); stereotypes (e.g., ‘A boy never cries’, ‘Girls are helpful’) and counterstereotypes (e.g., ‘Girls are great at math’); false messages intended to spread social discord (e.g., ‘Democrats steal elections’), and accurate messages intended to foster social justice (e.g., ‘Black people face discrimination’).

Intuitively, it appears that the implications of generics should vary for different types of content; for example, that generics describing biological features would lead to essentialism more so than those describing cultural features [33] or regularities explainable by extrinsic structures [34]. Indeed, several philosophers have argued that generics expressing counterstereotypic ideas (e.g., ‘Boys play with dolls too’) [35] or other accurate social information consistent with structural understandings (e.g., ‘Black people face discrimination’) [36] are important and likely have positive psychological and social consequences.

However, to the extent that children track generics as a cue to category structure, as we propose, then the implications of generics should depend less heavily on the features expressed and, in fact, could sometimes run directly counter to them. From this perspective, even generics that do not appear on the surface to express essentialist ideas, including those that communicate counterstereotypic and other positive messages, still imply that the referenced category reflects a real, objective, natural kind in the world. If so, then even well-intentioned generics could still have negative consequences for children’s thought.

Evidence for Prediction 1

Adults’ responses to generics do indeed sometimes depend on the type of feature information they convey. For example, adults view the features of a category as innate after hearing a series of generics describing biological but not social features [17,33]. In addition, adults understand that generics can describe structural relations, and this mitigates some of their psychological and social consequences [34]. Yet, whereas adults are certainly capable of understanding generics as describing extrinsic causal structures when such structures are made explicit and salient, this is often not their first guess [37,38].

Furthermore, children’s responses to generics appear less sensitive to their informational content compared with those of adults. For example, groups of children who heard a series of generics that explained category features with either internal (e.g., ‘Zarpies have striped hair because they are born with stripes in their hair’) or external causes (e.g., ‘Zarpies have striped hair because they are taught to paint stripes in their hair’) later viewed the category as more coherent, explanatory, innate, and inflexible compared with those who heard matched causal information presented nongenerically (e.g., ‘This Zarpie has striped hair because she was born with/taught to paint stripes in her hair’) [17]. Thus, hearing generics led children to essentialize a new social category more, even when the generics expressed antiessentialist causal information.

Natural language data also indicate that generics contribute to essentialism in young children even when such effects run counter to the content they communicate. For example, parents who produce proportionally more generic references to gender have children who endorse more gender essentialism, even controlling for the stereotypicality of what parents said, and even when considering only generics that express counterstereotypic content [24]; that is,

statements that expressed messages such as ‘Boys play football’, and those that expressed messages such as ‘Girls play football’, were both associated with more gender essentialism and stereotype endorsement in young children. This pattern, of parents explicitly denying gender stereotypes while nonetheless using generics to talk about gender, is common in speech to young children [4], and is consistent with experimental evidence that generics intended to express gender equality often counter-intuitively reinforce gender stereotypes [39,40]. Similarly, parents in Israel who generate more generic references to religious-ethnic categories endorse more essentialist beliefs about ethnicity, controlling for the content of those conversations [5], and parents in the USA who generated more generic references to race had children who endorsed more racial bias, even though most of these references communicated information about structural racism (e.g., ‘Black people face discrimination’) [25].

Thus, although adults may be more sensitive to the informational content of generics [33,34], children form more essentialist beliefs about a category when they hear it described generically, regardless of the feature information that it expresses. These findings are consistent with our proposal that, in the social domain, children assume that a kind described generically exists in a real, objective manner in the world. Therefore, they do so even when such an interpretation conflicts with the category information that a generic is intended to convey.

Prediction 2: the effects of generics are distinctive

Generics are an efficient means of transmitting information about categories, but there are many other ways to do so, such as via quantified descriptions (‘Many girls wear pink’; ‘10% of Democrats are union members’) or direct observations of how features are distributed. However, to the extent that consequences of generics elicit essentialist thought because children interpret them as a cue to category structure, the effects of generics may not be reducible to those that follow from these other ways of learning about categories.

Certainly, one thing that many generics do is imply that a category has a particular set of distinctive features. Generics are indeterminate regarding how many category members have the features they describe [41] and are sometimes used to describe features that have low objective prevalence in the kind [2,42]. Nonetheless, children and adults alike tend to assume upon hearing a novel generic that the mentioned feature is generally true of many instances [6,22,43,44] and true of more members of the mentioned category than of other salient but unmentioned categories (e.g., people interpret sentences such as ‘Girls have long hair’ as implying that more girls than boys do [6,7]). Thus, people tend to interpret the feature information conveyed by generics as implying that a category is more homogeneous and distinct than is justified, consistent with essentialist thought. Efficiently communicating that categories have characteristic and distinctive features could be another way that generics contribute to essentialism, particularly if people explain such regularities by appealing to intrinsic causes. From this perspective, other ways of learning that categories have characteristic and distinctive features (e.g., via quantified language or direct observation) could have similar consequences.

Nevertheless, we suggest that generics have distinctive effects on social thought in at least two important respects. First, due to their early acquisition, high frequency, flexible contexts of use, and resistance to counterevidence, generics have a much larger role in the development of essentialism compared with other means of expressing generalizations. Second, in addition to efficiently communicating distinctive features of social categories, generics can more directly shape social thought, because listeners assume that the categories that they reference are objective kinds. Therefore, generics will shape social thought even when they fail to communicate information about distinctive features at all.

Evidence for Prediction 2

Children understand generics at a younger age than they do quantifiers such as ‘many’, ‘most’, or ‘all’, and this finding holds across languages that express quantification very differently, including English, Mandarin, and Quechua [45–48]. In addition, parents commonly use generics in conversations with young children, but use quantifiers far less often [21,49]. These are important considerations because they indicate that, even if such quantified statements could have similar consequences as generics, they are unlikely to do so in the typical course of development, since quantified statements about kinds are rare in child-directed speech. In addition, both children and adults often misremember quantified statements as generics, with young children showing a considerably stronger tendency to do so compared with adults [48,50,51]. Whereas adults show this tendency only for quantifiers that are broad in scope, such as ‘all’, ‘most’, or ‘many’, but not ‘some’, younger children treat a broader set of quantifiers as generic compared with older children or adults. This suggests that, even if quantified statements have similar psychological consequences, it is likely because they are simply laid down as generics in children’s memory. Together, these findings suggest that differentiating generics from kind-wide quantified statements, such as ‘many’ and ‘most’, might not be particularly fruitful or informative: if children are rarely exposed to such language and have difficulty differentiating it from generics in memory, such statements are unlikely to be an important independent source of essentialist thought in development (neither are they likely to be good alternatives to generics if one wishes to avoid essentialism).

Nonetheless, generics differ from quantified statements in a critical way: they are more flexible in how they relate to the real (or perceived) state of the world. For example, when people hear that 25% of Democrats support affirmative action, they are likely to reject the statement, ‘Most Democrats support affirmative action’ (reasonably, since less than half do so) [6,43]. By contrast, people accept the generic, ‘Democrats support affirmative action’, even based on this low prevalence if they know that more Democrats (25%) than Republicans (5%) do so. In this way, generics and quantified statements require different conditions for endorsement and, thus, can suggest distinctive prevalence rates even when those rates are not so distinct or are unknown. In this way, generics can spread exaggerated beliefs about groups across populations more easily compared with other ways of conveying category information.

In addition, generics contribute to essentialism by communicating about category structure, beyond category regularities that could be learned through other means, and even when they fail to communicate information about distinctive features at all [52]. To illustrate, children heard two speakers describe a category generically but disagree about the feature information (e.g., ‘Zarpies have striped hair’, ‘No they don’t!’) or two speakers agree about a feature but disagree about whether it was appropriate to describe it generically (e.g., ‘Zarpies have striped hair’, ‘No, this Zarpie has striped hair’). Children developed more essentialist beliefs in the first case, when both speakers described Zarpies generically, even though no characteristic or distinctive features of Zarpies were clearly expressed, since the speakers disagreed on the particulars of which features they share.

Prediction 3: effects of generics depend on the communicative context

The proposal that children interpret generics as a cue to structure in the world, and sometimes as a cue to a speaker’s beliefs about the structure of the world, highlights the role of the communicative context in how generics elicit essentialist beliefs. From this perspective, generics can shape the transmission of essentialist beliefs about particular categories across communities and generations: when speakers view a category in essentialist terms, they are more likely to generate generics to describe it; children then interpret the generics as a cue to essentialize the kind and adopt such views.

Evidence for Prediction 3

For generics to operate in this manner, they must serve as a reliable cue to which social categories a community views in essentialist terms. That is, the generics children hear must reflect the beliefs held by their communities. Indeed, speakers tend to produce more generics for categories that they themselves view in essentialist terms. For example, parents with more essentialist views of animal and food categories produce more generics about them when talking to their young children [21]. Parents who endorse more intrinsic explanations for racial disparities produce more generic references about them in their conversations with children [25]. In addition, parents who were induced to hold more essentialist representations of a category subsequently produced more generics in conversations with their children about that group, indicating a causal connection [14]. Thus, if, as we have argued, children interpret generic claims as signaling that a referenced kind is coherent and objective, they will gradually develop essentialist views of categories that mirror those held by adults in their community, which indeed appears to be the case [53,54].

Further illustrating the role of children's inferences about what generics might indicate about a speaker's mental states, manipulating information about a speaker's mental states affects how children interpret generics. For example, children were introduced to two novel groups, Zarpies and Gorps, and heard generic statements regarding only one group (e.g., 'Zarpies are good at painting pictures' [31]). Children reliably inferred that members of the other category (Gorps) were not good at painting pictures, even though they did not hear anything about them, presumably because they realized that a speaker could have said, 'Zarpies and Gorps are good...' or 'Kids are good...' but chose to reference only Zarpies. Consistent with this interpretation, children did so only when they expected the speaker to be knowledgeable about Zarpies and Gorps; when the same generics were uttered by an unknowledgeable speaker, children did not reliably infer anything about the unmentioned group. Overall, these findings support the hypothesis that generics shape thought, in part, by serving as a cue to a speaker's beliefs.

Talking to children about social disparities

Thinking about how generics serve as cues to category structure raises considerations for how language might contribute to or reduce essentialist inferences in daily life. As reviewed earlier, because these processes sometimes lead generics to have effects that run counter to their content, counterstereotypic generics (e.g., 'Girls are great at math') or generics that convey important information about social structure (e.g., 'Black people face systemic racism') are unlikely to help reduce stereotyping and further social justice goals. Instead, such messages paradoxically appear to reinforce rather than challenge essentialism in children. We suggest that this is because generic statements are still interpreted by children as meaning that the referenced categories are real, objective, natural categories. Thus, even when generics express antiessentialist content, the speaker's use of a generic can reinforce children's essentialist beliefs.

That well-intended (and often accurate) social generics can backfire, makes it challenging to have conversations about social categories and social injustice with young children. Nevertheless, parents and educators cannot (and should not) avoid such discussions; the world is unfortunately rife with social disparities, and avoiding discussion altogether leaves children to interpret such disparities on their own, which often results in essentialist thought (Box 3). Our analysis suggests two considerations for how to approach this issue.

First, because experimental and naturalistic studies indicate that the use of generics to describe social inequalities can counterintuitively reinforce rather than inhibit essentialist thinking in young children, it is likely more helpful to focus on specific examples rather than generic descriptions when discussing social inequality with children. The overall use of category labels that parents

used for gender [24] and race [25] did not relate to essentialism, stereotyping, or bias, only the proportion of such labels that was generic. Indeed, the use of more specific category labels (e.g., ‘This girl plays football’; out of all gender-marked speech) related to less gender essentialism [24,52]. Thus, focusing on specific examples, rather than more abstract generalities, may be more helpful in conversation with young children, whereas focusing on generic descriptions (even counterstereotypic generics or those describing structural relations) are more likely to backfire.

Second, we think it is important to use such specific examples to help children understand that many social inequalities arise from structural factors (rather than intrinsic differences between groups). If children develop such a causal model of social group differences, they may become less likely to interpret generics in an essentialist manner. In addition, although even 4-year-olds can begin to understand that extrinsic factors explain patterns of group differences when structural causes are simple, salient, and perceptually marked [38,55], they are unlikely to do so as their first guess. It is also more challenging for children to understand such processes when the structural explanations are more abstract, such as involving cultural norms or policies [17] or counter to explanatory beliefs that the child already holds [56]. In addition, children appear somewhat more likely than adults to rationalize and justify structural disparities [55–57]; thus, the reasons why a social structure is unfair need to be made explicit to children for this understanding to lead to positive consequences [58,59]. Therefore helping children think structurally about social differences, including group inequalities, is a worthwhile, if challenging, goal, which likely requires sustained, ongoing conversations across time (more than is possible in a single experimental session). More research is needed to determine how to best help parents do this successfully [60,61]. The research reviewed here indicates that engaging children in conversations about group differences with the goal of reducing bias (which has been advocated for in developmental science and the popular press [62–64]) without a thorough understanding of the cognitive, developmental, and linguistic processes that underlie how children learn about the social world, could, unfortunately, backfire, reinforcing the very messages that speakers intend to counteract.

Concluding remarks

Generics are a common means by which children learn about social kinds. People interpret generic claims as revealing something fundamentally true about the categories they reference, above and beyond the features that are described. Experimental and natural language studies show that, from hearing generic claims (e.g., ‘Girls have long hair’), children learn more than what is explicitly stated (e.g., regarding hair length). They infer that the referenced category (e.g., girls) refers to an objective, real category in the world the members of which are fundamentally alike and different from other categories. In this manner, commonplace generics, even those expressing uncontroversial content (neutral or even counter to stereotypes, as in ‘Girls are great at math’), can lead children to think of social categories as fundamentally distinct kinds of people and, thus, contribute to representations that make children susceptible to acquiring harmful stereotypes and other problematic social phenomena. We encourage future work in this important area, particularly from a cross-cultural and cross-linguistic perspective (see [Outstanding questions](#)). Although generics have been attested in a broad range of unrelated languages [including American Sign Language (ASL) [65], Pirahã [66], and home signs used by children who are deaf [67]; indeed, we are unaware of any language that does not express genericity], and essentialism has also been documented broadly around the world [68], most of the research on the mechanisms linking the two comes from studies of majority-race, mid/high-socioeconomic status children in the USA, and, thus, we encourage further study examining other languages and cultures.

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Outstanding questions

Which aspects of essentialism do generics foster? Given that essentialism has different components, it is important to map out the consequences of generics for different components of essentialism. For example, generic language may more consistently promote the view of categories as natural kinds rather than the view of categories as having an underlying causal essence. By contrast, seeing categories as natural kinds and assuming they have an underlying essence might often relate to one another in people’s beliefs about certain kinds (e.g., for animal and perhaps social kinds).

How do the effects of generics change across development? Does the informational content of generic claims modulate their effects differentially across age? If so, why?

Are there stable individual differences in people’s tendency to use generics, and if so, what accounts for this variation? Can people learn to strategically use fewer generics to avoid spreading essentialist beliefs?

How are generics mentally represented? Do they reflect a default, unmarked mode of representation in addition to being a default interpretation in language?

How much cultural variation is there in the amount of generic talk that children hear, and in the degree to which people essentialize social kinds? Do cultural differences in generic language correspond to the degree and manner of essentialism?

Generics vary in their expression (e.g., indefinite singular versus bare plural generic noun phrases), conceptual interpretations (e.g., whether they are understood as expressing statistical, causal, or normative relations), and along other dimensions. How many different types of generics are there, and how is it most useful to understand their similarities and differences? Do different types of generics have different implications, or perhaps lead to different forms of essentialism?

What other social and cognitive consequences might generics have, beyond essentialism?

Declaration of interests

None declared by authors.

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