

Examining developmental changes in how people evaluate claims of inequality

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Abstract

Group-based inequality continues to be a problem across the globe, as the past decade has seen a backlash against growing racial and religious diversity, particularly in the West. Here, using a novel groups paradigm with a high-, medium-, and low-status group, we examine how participants conceptualize inequality and investigate their expectations about how inequality comes about, and we investigate beliefs of the fairness behind the inequality. Across our two separate cohorts – adults and children – participants expressed concerns about the fairness of inequality between novel groups, and there was low levels of belief that the low-status group was merely whining about being treated unfairly. Together, these results demonstrate that there may be some age-related changes in perceptions of inequality and fairness.

Introduction

Inequality has long been a part of human society. Ever since the shift from hunter-gatherer societies to agricultural towns and cities, there has been a distinct hierarchy between the “haves” and the “have-nots” (Kohler & Smith, 2018). Currently, inequality between groups exists on the basis of race, sexual orientation, gender, and religion, to name a few.

While an increasingly interconnected and globalized world has given many hope that equality is well within reach for these disadvantaged groups, a recent rise in far-right authoritarianism has swept through the Western world, at the expense of many marginalized groups.

Hungarian prime minister Viktor Orbán has built a wall on the southern border of Hungary in order to block the immigration of Syrian refugees to “keep Europe Christian”, and migrants have been held in detention camps where guards have been spotted throwing food at them.

Brexit – the 2016 withdrawal of the UK from the European Union (EU) – is considered by many to be motivated largely by xenophobia of incoming immigrants. Finally, of course, America’s president Donald Trump filed an executive order in 2017 to close the US border to refugees from seven Muslim-majority nations, many of whom were fleeing civil war, and responded to far-right violence in Charlottesville, Virginia by saying there were “very fine people on both sides”. All of the politicians above have supported policies that support and maintain inequality and bigotry on the basis of a group-based identity, whether that be race, religion, sexual orientation, or some combination therein. The onus is not just on these politicians, though; it is also on the many people who voted these elected officials into office.

As such, understanding why many people justify and uphold inequality is crucial. In particular, understanding the developmental shifts behind reasoning and inferences made about claims of inequality (as children often have a strong preference for fairness (e.g. Li et al., 2014) will help us better understand when and why justifications and support for inequality emerge.

Developmental understandings of fairness

The development of fairness begins early on in humans. As early as 12 months, infants expect that resources will be allocated equally between two recipients (Geraci & Surian, 2011; Schmidt & Sommerville, 2011). By 18-24 months of age, children consistently share resources (e.g. access to toys, food, etc.) with each other, indicating an early human proclivity towards equality in resource control (Brownell, Iesue, Nichols, & Svetlova, 2013). Further along in the developmental timeline, 3-to-5 year-olds also prefer an equal distribution of resources. This age group also encourages reciprocity in sharing resources (i.e. giving resources in exchange for receiving resources) and providing resources and rewards for those who share their resources with others (LoBue, Nishida, Chiong, DeLoache, & Haidt, 2011).

This early-emerging preference for fairness holds steady even when sharing resources allocating resources to those other than oneself, such that children as young as 3 years old will consistently distribute resources equitably (Olson & Spelke, 2008). In a study by Olson & Shaw (2012), many 6- to 8-year-old children opted to throw away a resource, rather than having to distribute it unequally, whether that be distribution between two third parties or between themselves and a third party. In fact, the results of many studies conclude that it is not until age 6, 7, or even 8 that true “equity preferences” emerge; prior to this age, children will still share, but not in total equity, and are likely to keep more for themselves (Benenson et al., 2007).

Age-related changes in responses to inequality

Most pertinent to the current research is how group status influences how children evaluate inequality. One study that looked at this was Elenbaas & Killen’s 2016 study. The researchers first showed children unequal resource allocation (i.e. providing medical supplies) to hospitals serving only African-American people vs. hospitals serving only European-American children. After the demonstration, children were asked both how they

would allocate medical supplies if they were the mayor of a city and how they viewed the unequal resource allocation that they had witnessed. Children had the chance to decide how they would distribute medical boxes to the two different hospitals if they were the mayor of the city. The 10-11-year-old children chose to allocate more medical resources to the disadvantaged hospital – as opposed to the advantaged hospital – if the disadvantaged hospital was the African-American hospital, whereas if the disadvantaged hospital was the European-American hospital, neither group gave more resources to make up for the inequality. Furthermore, the children in the 5-6-year-old age group did not allocate significantly more resources when the disadvantaged hospital was European-American or African-American. However, the children in the 10-11-year-old age group did allocate significantly more resources when the disadvantaged hospital was African-American, but not when the disadvantaged hospital was European-American. All in all, the results of this study demonstrate that status – at least pertaining to resources – is taken into account by older children when evaluating structural inequality. Furthermore, children may have an increasingly complex concept of fairness -- taking into account the impact of past actions and attempting to rectify these past actions -- as they get older.

Influence of self-interest

However, evidence also suggests that biases cloud the decisions of 3-6 year-olds when sharing resources is an option. Children within this age group tend to share with far less consistency when they are told that the resources they are sharing will be split evenly amongst themselves and other individuals as opposed to when they are told that they will be able to maintain most or all of the resources while the other person is given a separate, equal amount (Smith, Blake, & Harris, 2013).

Preference for dominant group

Li, Olson, & Spitzer (2014) found that 4- and 5-year-olds allocated resources to a recipient who was disadvantaged, rectifying the inequality, but also judged the advantaged recipient more positively than they did the disadvantaged recipient. This finding suggests that while children may indeed seek to eliminate inequality when they see it, they are also likely motivated to prefer those with more resources. The idea that children prefer individuals with more resources is consistent with other literature demonstrating that children perceive those with more resources as more likely to engage in helpful, “good” behaviors and that those with more resources are nicer (Olson, Banaji, Dweck, & Spelke, 2006), even when those with more resources only obtained more resources by chance (e.g. finding \$5 on sidewalk; Olson, Dunham, Dweck, Spelke, & Banaji, 2008).

Olson, Dweck, Spelke, & Banaji (2011) randomly assigned children to observe either a situation where Black children received more cookies than White children, or White children received more cookies than Black children. Then, participants were given three cookies to distribute among the targets. Interestingly, results showed that younger children were more likely to perpetuate inequality by offering more cookies to the situationally advantaged group, while older children were more likely to rectify inequality by offering more cookies to the situationally disadvantaged group. Notably, this occurred regardless of whether the White or Black children were advantaged. However, in subsequent studies, older children were also likely to perpetuate situational inequality when the two groups were relatively equal in status (i.e., using White and children). These results suggest that children only seek to rectify inequality with age when they are aware of broader social realities. What the results from across the three experiments suggest is that the default of children may be to perpetuate inequality when that inequality is viewed as the “status quo”. More specifically, there exist a few possibilities for why the first experiment, in which children were asked to distribute cookies to Black and White children, yielded the results it did. One

possibility is that older children are simply more aware than younger children of inequality between Black and White people, and thus the decision to rectify the inequality is seen as a recognition in older children of the fact that equality is often discussed in the context of relationships between Black and White people. Regardless, the results of this study show that as children age, they are more likely to rectify existing inequalities than to perpetuate them.

Current study

While researchers have uncovered much about how children think about social power and inequality, there are several significant gaps that our study hopes to address. First, there is very little research analyzing which cues (e.g. social dominance, resource control, physical size) are more salient in children's perceptions of power and status across different age groups. Finally, and perhaps most importantly, how do perceptions and evaluations of claims of inequality change over age, particularly from middle childhood to late childhood? Our goal is to uncover if – and potentially why – adults may make different evaluations of who is causing the inequality and how valid they believe complaints about mistreatment are. A better understanding of changes in how people evaluate claims of inequality will help contribute to more productive and effective conversation and action in acknowledging inequality.

Hypotheses

Our hypotheses for the present study are as follows:

H1: Permission-giving and resource control will be more influential in determining participants' evaluations of who is causing the inequality than physical size or numerical group size will be. Both permission-giving and resource control are incredibly important in one's early childhood, particularly if they are in school, so this will positively influence the primacy of permission-giving and resource control

H2: Children across the different age ranges will assume that the group that is committing harm is the one with the most resources (i.e. the high-status group). Previous research has

demonstrated the connections between permission-giving and status (e.g. Neary et al., 2009) and how children expect those in status to set norms group norms and rules. Associations with status and permission-giving will lead to an implication of the high-status group in causing harm.

H3: Younger children in particular will prefer the high-status group as compared to the low-status group. Research by Li et al. (2014) demonstrated that 4-5-year-old children often prefer the high-status group as opposed to the lower-status group (or group with fewer resources)

Methods

Participants

In total, we recruited 27 children (13 girls, 13 boys, one unreported) aged 5-10 ($M = 7.96$, $SD = 1.46$). from community sites near Philadelphia, Pennsylvania. We chose this age range because past research has demonstrated some differences that emerge in early-to-late childhood concerning perceptions and actions regarding inequality (Elenbaas & Killen, 2016; Olson et al., 2011, etc.), and based on the knowledge that children develop increasingly complex language and vocabulary until the age of 5, at which pronunciation is clear, and understanding of cause and effect are solidly developed.

In terms of the racial makeup of the same, 29.6% of participants were of mixed racial background, 25.9% of participants were Black or African-American, 18.5% were White, and one participant was Latinx. The parent or guardian of seven participants (26%) chose not to disclose the race of their child.

We also recruited a comparison sample of adults using Amazon's Mechanical Turk platform. After exclusions, we retained 91 adult participants, 62.6% of whom identified as men, 36.2% as women, and 1.2% who chose not to report their gender. Participants were on average 38.10 years old ($SD = 8.86$). Participants had a median income of between \$50,000-

74,999, and the racial breakdown is as follows: 72.5% White, 8.8% Asian-American/Asian/Pacific Islander, 7.7% South Asian/Indian-American/Southwest Asian, 5.5% Black/African/African-American/Caribbean, 3.3% Hispanic-American/Latinx)/Chicano(a), 1.1% bi-racial/multi-racial, and 1.1% Native-American/American Indian.

Materials and procedure

After the parent or legal guardian provided consent, children were randomly assigned to one of two conditions: short-inequality or long-inequality. The short-inequality condition consisted of a statement that the Gorps -- one of our novel groups -- had been mistreated, whereas the long-inequality condition stated that the Gorps had been mistreated for a long time. We used this methodology in order to examine if the length of mistreatment (or inequality) influenced the salience of different dimensions of social power as children heard the story and considered the outcomes of the inequality (e.g. who was perpetuating it, whether it was fair). 15 kids (55.5%) of kids were placed in the short-inequality condition, and 12 kids (44.5%) were placed in the long-inequality condition.

A trained research assistant read the script aloud to the participant and began by introducing the participant to three novel groups -- the Zarpies (yellow-colored), Flurps (purple-colored), and Gorps (orange-colored). Each of the novel groups had different physical characteristics and had differential access to keys that could be used to access a pool in the middle of town; the access varied across novel group such that the Zarpies (high-status) could access the keys every day of the week, the Flurps (medium-status) could receive the keys 4 times a week, and the Gorps (low-status) could receive the keys 2 times a week. After each of the novel groups was presented independently, participants completed a comprehension check to see if they remembered how often the novel group in question received the keys (i.e. "Can you remind me, how often can the [group] get the keys to the pool?). The Zarpies were presented as the high-status group (e.g. "Zarpies are kind of small,

and not that strong. There are only a few Zarpies in town. The Zarpies can get the keys to the pool 7 times a week, which is every day of the week. That means they go swimming whenever they want”). The Flurps were presented as the middle-status group (e.g. “Flurps are also big and strong, and there are a lot of Flurps. The Flurps can get the keys to the pool four days a week. That means they can go swimming more often than the Gorps, but not all the time like the Zarpies”). Finally, the Gorps were presented as our low-status group (e.g. “The Gorps are big and strong, but there are only a few Gorps in town. The Gorps can only get the keys to the pool two days a week. That means they can only go swimming twice a week”). The physical shape of the individuals within these novel groups were adapted from Gulgoz & Gelman (2017).

Participants then heard that there was a town meeting every week, and all the different novel groups are there. Then, as described above, the script either contained the short-inequality condition or the long-inequality condition. The description of the situation was the same across conditions, except in the long inequality condition, participants also heard that “...this has been going on for a very long time”.

“Thumbs” scale

We used a laminated scale with differentially-sized and -oriented thumbs such that the symbols and sizes from the left side of the scale was: a) two large thumbs down, corresponding to the response of “definitely not”; b) two smaller thumbs down, corresponding to the response of “maybe not”; c) two smaller thumbs up, corresponding to the response of “maybe yes”; d) two large thumbs up, corresponding to the response of “definitely yes”. We used this scale in order to more accurately gauge participants’ responses for several of our dependent measures.

Dependent measures

Immediately after hearing about the inequality context, participants were asked our primary dependent variable--whether children thought the Zarpies or Flurps were being mean to the Gorps. Responses were coded such that choosing the higher status Zarpies was coded as 1, and choosing the middle-status Flurps was coded as 0.

Next, participants were asked how much they thought the Gorps were asked our secondary dependent variable – whether children thought the Gorps were “just whining” about being treated unfairly. Responses were coded such that belief that the Gorps were “definitely not whining” was coded as 1, “maybe not whining” as 2, “maybe whining” as 3, and “definitely whining” as 4. To aid in the understanding of the question, researchers showed participants a scale from a big thumbs down (1 = definitely not) to a big thumbs up (4 = definitely yes).

After giving their beliefs in how likely it was that the Gorps were whining, participants were asked to come up with their own reasoning (i.e. the question was open-ended) for why they said either the Flurps or Zarpies were the ones being mean to the Gorps. Once the participants told the experimenter their reasoning, participants were asked whether they thought that the group they had determined was being mean to the Gorps would also be mean to the other, remaining novel group. Responses were coded such that belief that the mean group would “definitely not” be mean to the remaining group was coded as 1, “maybe not” as 2, “maybe yes” as 3, and “definitely yes” as 4, using the thumbs scale.

After participants provided their answer regarding the possibility of the mean group being mean to the remaining group, researchers presented participants with a picture of one the groups in the following order: Gorps, Zarpies, Flurps. Participants decided how much they liked the group based on a 5-point smiley scale that participants pointed to in order to

indicate their level of liking. Responses were coded such that a response of “really not like” (frowny face) was coded as a 1, “not like” (slight frown) was coded as a 2, “just okay” (straight-mouthed) was a 3, “like” (slight smile) was a 4, and “really like” (full smile) was a 5.

Subsequently, participants were presented with two of the groups and were instructed to choose which group they would rather invite to their birthday party whether children thought the Zarpies or Flurps were being mean to the Gorps. Responses were coded such that choosing the higher status Zarpies was coded as 1, and choosing the middle-status Flurps was coded as 0.

Following the determination of who was being mean to the Gorps, participants were shown pictures of every group side-by-side and asked, “which group do you think looks the most like you?” such that choosing the high-status Zarpies was coded as a 2, choosing the middle-status Flurps was coded as a 1, and choosing the low-status Gorps was coded as a 0.

Researchers next asked participants if they thought it was fair that the Zarpies got to go to the pool whenever they wanted. Responses were coded such that choosing “definitely not” was coded as a 1, “maybe not” was coded as a 2, “maybe yes” a 3, and “definitely yes” a 4, using the thumbs scale.

Upon completion, participants were offered a sticker for their participation in the study.

Adult participants were presented with the same questions as the children, but were asked to fill out a Qualtrics survey instead, and paid \$1 for their time and participation.

Analytic Strategies

We used R (Lei et al., 2019) to analyze the data we collected, primarily analyzing the data using multiple regression. For binomial dependent variables, we ran logistic regressions.

In the case of the liking variable, we used multi-level modeling, nesting rating of target stimuli within participant.

Results

We present the data from children first, followed by results from the adults. Additionally, our data collection plans for our child sample were curtailed because of the COVID-19 global pandemic. Thus, we report the estimated means from our analyses for inspection, even when the inferential statistics are not significant.

Do children believe low-status Gorps are just whining? When asked how likely they thought it was that the Gorps were whining, the most common answer (29.6%) was that the Gorps were “maybe whining ($P_{50} = 2.00$, $M = 2.26$, $SD = 1.06$). In a model predicting Gorps whining as a function of age ($B = -.20$, $SE = .15$, $t = -1.4$, $p = .18$). and inequality condition ($B = -.35$, $SE = .43$, $t = -.82$, $p = .42$), there were no significant effects. However, examination of means indicated that when deciding how much they felt the Gorps were whining, those in the short-inequality condition were directionally more likely to think that the Gorps were whining ($M = 2.4$, $SE = .28$) than were those in the long-inequality condition ($M = 2.05$, $SE = .32$). In terms of age-related changes, older children were *less* likely to think that the Gorps were whining than younger children were (though again, this change was not significant).

Do children think it's fair that high-status Zarpies can go to the pool all the time? When asked whether it was fair that the Zarpies were able to go to the pool whenever they wanted, most participants (55.5%) said that it was “definitely not fair” ($P_{50} = 1$, $M = 1.67$, $SD = .83$). In a model predicting perceived fairness of Zarpies getting unlimited pool access, as a function of age ($B = -.19$, $SE = .11$, $z = -1.7$, $p = .10$) and inequality condition ($B = -.33$, $SE = .33$, $t = -1$, $p = .33$), there were no significant effects. However, examination of the means revealed that child participants were marginally more likely to say that it was fair that the

Zarpies could go to the pool whenever they wanted as participants got older. Child participants in the long-inequality condition ($M = 1.5$, $SE = .25$) were marginally *more* likely to say that the Zarpies' access to the pool was unfair than were participants short-inequality condition ($M = 1.83$, $SE = .21$).

Who do children believe is being mean? When asked who was being mean to the Gorps, most participants (55.5%) said they thought it was the Flurps ($P_{50} = 0$, $M = .44$, $SD = .51$). In a model predicting who participants thought was being mean to the Gorps, as a function of age ($B = -.1$, $SE = .28$, $z = -.36$, $p = .72$) and inequality condition ($B = .55$, $SE = .81$, $t = .68$, $p = .50$), there were no significant effects. However, examination of the means revealed that child participants were marginally more likely to say that the Flurps were the group being mean when in the short-inequality condition ($M = .40$, $SE = .13$), while children in the long-inequality condition were split as to whether it was the Flurps or Zarpies who were being mean to the Gorps ($M = .54$, $SE = .15$). Younger participants were marginally *more* likely to say that the Zarpies were being mean than were the older participants.

Do children believe the group mean to the Gorps would be mean to other group? When asked if they thought the group they thought was being mean to the Gorps (e.g. Flurps or Zarpies) would be mean to the remaining group (e.g. "would Zarpies be mean to Flurps?"), most participants said that it was likely that the group being mean to the Gorps would also be mean to the other group, with the most common answer split between "maybe yes" (33%) and "definitely yes" (33%; $P_{50} = 3$, $M = 2.81$, $SD = 1.11$). In a model predicting whether the offensive group would be mean to the other remaining group, as a function of age ($B = .04$, $SE = .16$, $t = .24$, $p = .81$) and inequality condition ($B = -.06$, $SE = .46$, $t = -.13$, $p = .90$), there were no significant effects. Further examination of the means revealed that child participants in the short-inequality condition were marginally *more* likely to say that the offending group would be mean to the remaining group ($M = 2.80$, $SE = .30$) than were child participants in the long-

inequality condition ($M = 2.74$, $SE = .35$). Older children were marginally *more* likely to say that the offending group would be mean to the remaining group than were younger children.

How much do children like the different groups? When asked how much they liked the three different novel groups, participants said that they liked the Gorps most of all the groups ($M = 3.61$; $M = 3.19$ and $M = 2.85$ for Zarpies and Flurps, respectively). However, participants did not like the Gorps significantly more than they liked the Zarpies ($B = .43$, $SE = .40$, $t = 1.07$, $p = .29$) or Flurps ($B = .76$, $SE = .40$, $t = 1.9$, $p = .06$). There was no significant difference in how much participants liked the Zarpies as compared to the Flurps ($B = .33$, $SE = .40$, $t = .84$, $p = .41$).

Adult Data

Do adults believe low-status Gorps are just whining? When asked how likely they thought it was that the Gorps were whining, many adult participants (46%) said that the Gorps were “maybe not whining” ($P_{50} = 2.00$, $M = 1.84$, $SD = .72$). In a model predicting Gorps whining as a function of age and inequality condition, there was a significant effect of age on perceptions of whining ($B = -.02$, $SE = .01$, $t(23) = -2.2$, $p = .28$), such that younger adult participants were significantly *more* likely to say that the Gorps were just whining than were older participants.

Do adults think it's fair that high-status Zarpies can go to the pool all the time?

When asked whether they thought it was fair that the Zarpies got to go to the pool whenever they wanted to, most participants (43%) said “maybe not” ($P_{50} = 2$, $M = 1.98$, $SD = 1.03$).

Who do adults believe is being mean? When asked who they thought was being mean to the Gorps, most participants (69.2%) said that the Flurps were being mean to the Gorps ($P_{50} = 0.00$, $M = .31$, $SD = .46$). In a model predicting who participants thought was being mean as a

function of age ($B = -.11$, $SE = .06$, $z = -2.03$, $p = .04$) and inequality condition ($B = -4.34$, $SE = 2.44$, $z = -1.8$, $p = .07$), there was a significant effect of age on who participants perceived as being mean such that younger participants were significantly more likely than older participants to perceive the Zarpies as being the mean group.

Do adults believe the group mean to the Gorps would be mean to other group? When asked whether they thought the group they thought was being mean to the Gorps (e.g. Flurps or Zarpies) would be mean to the remaining group, most participants said “maybe yes” ($P_{50} = 3$, $M = 2.79$, $SD = .68$).

How much do adults like the different groups? When asked how much they liked the three different novel groups, participants liked Gorps significantly more than they liked Flurps ($B = 1.05$, $SE = .15$, $t(270) = 6.86$, $p < .001$), and they liked Gorps significantly more than they liked Zarpies ($B = .70$, $SE = .15$, $t = 4.6$, $p < .001$). Participants also liked Zarpies significantly more than they liked Flurps ($B = .35$, $SE = .15$, $t = 2.3$, $p < .05$).

Discussion

The present research found that people tend to have doubts about the fairness of an existing inequality between novel groups. Participants expressed uncertainty over the fairness of the high-status group receiving access to a resource whenever they wanted while the remaining two groups had differing levels of (partial access). Furthermore, most participants felt that the low-status group was not merely whining and felt that there was a valid reason for the low-status group to be upset. Most participants also felt fairly confident that the group who was being mean would be mean to both the low-status group and the other group remaining.

Many of these results fall in line with previous research on the notion of fairness in children that suggest that children are biased towards equal distribution of resources (e.g.

Olson & Spelke, 2008; Kenward & Dahl, 2011). Thus, the finding that children were unlikely to think that the Gorps -- the low-status group -- were “whining” when they expressed frustration with others mistreating them may come as no surprise. Children may have viewed the Gorps’ complaints as valid because of an early-emerging predisposition to fairness (Brownell, Iesue, Nichols, & Svetlova, 2013). Similarly, children viewed the unequal access to the pool as unfair, too. This study builds on previous research in children by demonstrating children’s aversion to inequality, at least in the context of novel groups.

There were a few findings from our child sample that ran counter to our hypotheses. First, we predicted that child participants would be more likely to assume that the high-status Zarpies were the group being mean to the Gorps than they were to assume that the medium-status Flurps were being mean to the Gorps. We assumed the primacy of resource control and permission-giving in children’s perceptions of who has social power, and by extension, who would be perceived as being mean (i.e. the group with more social power would be viewed as being mean). Past research has demonstrated that children use cues about who has the most access to resources and who sets the rules for who gets what (i.e. permission-giving) to determine who is “in charge” (Pietraszewski & Shaw, 2015; Neary, Friedman, & Burnstein, 2009; Noles & Gelman, 2014), the logical conclusion therein being that the group “in charge” is being mean, since it has the most social power. However, children were more likely to view the Flurps as being the mean group than they were to say that the Zarpies were the group being mean, counter to our expectations. Many children expressed that the Flurps’ group size and physical size was the reason for their perceptions of the Flurps as the mean group. However, given that children were fairly split on who was being mean (55.5% chose Flurps, while 44.5% chose Zarpies), any speculation about the reasons for attributing mean behavior towards the Gorps to either the Flurps or the Zarpies would be premature.

Our final hypothesis was that children would like the high-status group most of all, as previous research had demonstrated that children tend to favor those who are advantaged (e.g. Olson & Shutts, 2010). The process behind this preference remains somewhat murky, but work by Olson et al. (2008) and Li et al. (2014) suggests that there may be an “affective tagging” process in which children “automatically evaluate others based on their associations with positively or negatively valenced events or items” (Li et al, 1124). By extension, those with more resources -- which many would view as a positive outcome -- may be viewed positively than those with fewer resources. Our study did not support this finding, as our child participants were more likely -- albeit not significantly -- to rate the Gorps as their favorite group, with the Zarpies as their second-favorite and the Flurps as their least favorite. It is unclear why participants marginally favored the Gorps over the other two groups. Perhaps the racial diversity of our sample -- more than half of our participants were either of mixed racial background or were Black -- led to more complex and dynamic understandings of inequality than predicted. Invoking the affective tagging hypothesis, it is possible that many of the children we tested had positive evaluations of the low-status group as a result of being members of a racial minority (i.e. marginalized) in society. However, the adult population we surveyed -- who was majority White -- also liked the Gorps most, so further examination of the data will be necessary in order to determine the reason for the results we obtained. Furthermore, given that there were no significant differences in liking of the different groups within our child cohort, some caution is warranted in delving too far into possible explanations for why children preferred one group over the other.

As for the adult participants, we did not have any specific hypotheses prior to data collection. Previous research suggests that some adults hold a belief that social hierarchies are fair and justified (Sidanius & Pratto, 2011), but whether this would occur in the context of novel groups was unclear. Interestingly, we found that younger adult participants were

significantly more likely to perceive the Gorps as whining than the older participants were. Given the unexpected nature of this finding, it is unknown why this might be. Haack and Sieweke (2017) suggest that younger adults may have less experience with encountering inequality and less awareness of it within society by virtue of having spent less time in a given nation-state (i.e. they've had fewer years to identify and understand inequality), while [blank] compiled and analyzed survey data from the International Social Survey Programme (ISSP) and found that increased age had a positive correlation with perceived inequality such that the older a person was, the more likely they were to describe their home country (which included 26 different countries). Additionally, research by Meadows et al. (2017) found that younger age amongst adults predicted more negative attitudes towards "fat" individuals. Looking specifically at race, several studies have found similar levels of anti-black prejudice between white millennials and their older white counterparts.

Regarding racial prejudice, researchers have explored racial attitudes by asking participants to rate white people and Black people on a scale from hardworking (on one end) to lazy (on the other). From data collected between 2010 and 2014, white millennials were statistically indistinguishable from Gen X white people and Baby Boomers in that they were just as likely to say that Black people were lazier or less hardworking than white people as Gen X white people and white Baby Boomers (31%, 32%, and 35%, respectively). This finding is concordant with the 2012 American National Election Studies Time Series study in which an average of 61% of white millennials said that Black people were lazier and less intelligent than white people, as compared to 64% of white people over 30 who said this. Taken in conjunction with earlier findings suggesting that young people may be more inclined to be prejudiced against certain individuals (Meadows et al., 2017) and that younger individuals may be less aware of existing inequalities (Haack & Sieweke, 2017): the idea that younger people are more likely to perceive inequality or rectify it is called into question.

Nevertheless, the general conceptualization of changes in prejudice as one ages considers aging to have a positive correlation with prejudice; that is, many studies have suggested that older people have more prejudiced beliefs (Hippel et al., 2000; Stewart et al., 2009; Radvansky et al., 2010; Pettigrew, 2006, for review) as a result of a lower ability to consciously inhibit stereotypes and having less automatic control over the activation of stereotypes. This correlates with Pew Research data that consists of more explicit attitudes regarding inequality. American millennials are more likely than other generations to say that racial discrimination is the main barrier to Black people being able to succeed in society (52%, whereas no other generation was above 40%), and nearly 80% of American millennials surveyed said that immigrants' hard work and talents strengthen the US, while no other generational cohort was above 66%, with the Silent Generation falling below 50%. Similar generational trends exist when considering whether same-sex marriage should be legalized, with 70% of Americans ages 18-29 supporting the legalization of same-sex marriage, as compared to 56% for ages 30-49, 48% for those 50-64, and 39% for those 65 and older. Given these findings regarding inequality and support for marginalized groups, the idea that younger people are either more or less averse to and aware of inequality than older adults remains questionable.

Younger adult participants were also significantly more likely to view the Zarpies as the group being mean than were older participants, but the relationship between these two findings is uncertain. It is possible that physical size and group size are simply more salient for older adults, as compared to younger adults, such that the Flurps – who are larger than the Zarpies and have more group members than Zarpies – were seen as being the offensive group. However, to our knowledge, no existing studies have analyzed age-related changes in the relative salience of group size and physical size. Moreover, amongst the younger adults, the majority still considered the Flurps to be the group who was being mean to the Gorps, so

future research should examine the way in which younger adults and older adults differ regarding attributions of inequality or harmful behavior.

Finally, although we did not directly compare children and adults, looking at the means from children and adults, children were more likely to say that the Gorps were “just whining” but were less likely than adults to perceive the unequal access to the pool as fair. It may be that children have not yet begun reasoning about the wider existence of the world, inasmuch as they are less aware of existing inequalities within the world, and their lesser exposure to it means they have not internalized the ideas of rigid hierarchy that exist within society. Indirect support for this supposition comes from a 2010 study by Almas and colleagues, which found that egalitarian views were more common among kids up until the time between 5th and 7th grade, after which merit-based resource allocations become more popular. Perhaps this is what caused the differential results between the children and the adults regarding Zarpies’ access to the pool, but it doesn’t explain why children are more likely to think that the Gorps are whining.

There were several limitations of our study. One readily apparent limitation is that we had a limited child sample because of logistical challenges. Future studies should aim to look at a wider age range of children that includes 5th and 7th graders in order to uncover the development and trajectory of system-justifying ideologies. Furthermore, unpacking the relationship between different social identities -- such as age, race, gender, and political affiliation -- may be fruitful in determining who is most likely to exhibit a tendency towards system justification.

Conclusion

In sum, our study examined perceptions of power, fairness and inequality using a novel group paradigm. We obtained responses from two separate groups of participants -- children

and adults -- in order to uncover potential differences in conceptualizations of power, fairness, and inequality across the lifespan. Our results suggest that there are age-related changes in perceptions of fairness and inequality, but the exact nature of these changes remains unclear. Future studies should aim to more cleanly examine what aspects of social power people might pay attention to and what situational variables might contribute to changing notions of fairness and equality.

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