

**Children's Socio-Moral Judgments and Behaviors toward Peers with and without  
Incarcerated Parents**

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**Abstract**

Adults often respond negatively toward children with incarcerated parents. Yet, the developmental foundations for such negativity remain unclear. Two studies ( $N=331$  U.S. residents; plurality White; plurality male; data collected between Winter 2019 and Spring 2021) addressed this topic. Study 1 probed 5- to 6-year-olds' and 7- to 8-year-olds' inferences about peers with and without incarcerated parents. Children reported less certainty that peers with, versus without, incarcerated parents possess moral beliefs. Study 2 showed that among older children, inferences about parental absence did not fully account for this pattern of results. Across studies, children behaved less generously toward peers with, versus without, incarcerated parents. These studies illuminate how early socio-moral judgment may contribute to negativity toward children with incarcerated parents.

**Keywords:** moral cognition; punishment; social cognitive development

### **Children's Socio-Moral Judgments and Behaviors toward Peers with and without Incarcerated Parents**

As of 2020, nearly 2.3 million people in the U.S. were incarcerated (Sawyer & Wagner, 2020). Most proximally, incarceration impacts individuals who are behind bars. While incarcerated, people in the U.S. often live in degrading conditions (e.g., Forbes, 2016; Hopwood, 2021) and lose many of their freedoms (e.g., National Conference of State Legislatures, 2021). Beyond impacting those spending time behind bars, incarceration negatively influences their families, including children. Between 1991 and 2007, the number of children with incarcerated fathers rose by 77%, while the number of children with incarcerated mothers increased by 131% (Glaze & Maruschak, 2010). More recently, estimates suggest that more than 5.7 million children in the U.S., a majority of whom are minoritized on the basis of race or ethnicity (Elderbroom et al., 2018), have experienced parental incarceration at some point in their lifetime (Gotsch, 2018).

Though incarceration includes a multitude of losses, it does not typically inspire the types of responses that other losses do. Institutional actors often respond to incarcerated and formerly incarcerated individuals with scorn and judgment (e.g., Forbes, 2016; Van Cleve, 2016), and this disapproval spills over into judgments of their children. Teachers, social workers, and other community stakeholders often exhibit negativity toward children with incarcerated parents (Phillips & Gates, 2010). For instance, adults often view children with incarcerated parents as “the apple who did not fall far from the tree” (Krupat, 2007, p. 40) and as destined toward a life of crime (Murray et al., 2012). In addition to making negative inferences about children with incarcerated parents, adults readily withhold resources from them, and these children often experience material hardship as a result (e.g., Murray et al., 2012; Phillips & Gates, 2010).

While this literature has highlighted the intergenerational consequences of legal punishment within the U.S., less work has examined the psychological processes that may contribute to negativity toward children with incarcerated parents. The current work addressed this topic by examining how early systems of socio-moral processes may lay the foundations for such negativity. We began to address this topic by probing elementary schoolers' perceptions of peers with, versus without, incarcerated parents. Specifically, we examined elementary schoolers' inferences regarding the extent to which peers with, versus without, incarcerated parents possess moral beliefs. Several prior studies have examined children's evaluations and expectations of others' morally relevant behaviors (e.g., Chalik & Rhodes, 2014; Liberman et al., 2018; Marshall et al., 2020). However, relatively less work has focused on children's inferences about the potential precursors of such morally relevant behaviors—namely, moral beliefs. Given that behaviors can arise from beliefs (e.g., Hommel, 2003), the current work focused on children's inferences about peers' socio-moral beliefs.

We recruited elementary schoolers to test between two competing possibilities regarding the extent to which children's views might change throughout the elementary school years. On the one hand, older children may report more pessimism that peers with, versus without, incarcerated parents possess moral beliefs. This possibility is consistent with work suggesting that older children are typically more pessimistic than younger children (Boseovski, 2010). This possibility is also consistent with scholarship suggesting that, with age, elementary schoolers increasingly make negative moral inferences about out-group members (e.g., Liberman et al., 2018). A similar pattern may emerge in our work: with age, elementary schoolers who do not have an incarcerated parent themselves may become increasingly pessimistic that peers whose parents are, versus are not, incarcerated possess moral beliefs.

On the other hand, both younger and older children may report similar levels of pessimism that peers whose parents are, versus are not, incarcerated possess moral beliefs. Beginning early in development, children make inferences about individuals based on those individuals' social relationships. By preschool, children expect people who have a close relationship with each other to share knowledge (Lieberman et al., 2020) and use information about relationships to infer how people within a given social network might think and behave (e.g., Chalik & Rhodes, 2014). By extension, even the youngest children in our work may make judgments about incarcerated individuals and use these judgments to make inferences about peers with incarcerated parents. Critically, elementary schoolers often view incarcerated individuals as possessing negative internal characteristics (e.g., bad moral character, immoral desires, Dunlea & Heiphetz, 2020). Because even young children draw negative inferences about punished individuals and also make inferences about individuals based on social relationships, both younger and older participants in our work may report similar levels of pessimism regarding the extent to which peers with incarcerated parents possess moral beliefs.

In addition to probing elementary schoolers' inferences about others' moral beliefs, we examined their views of others' conventional beliefs (e.g., thinking it is wrong to break the rules of a game). This approach allowed us to clarify whether negativity toward children with incarcerated parents stems from inferences about their moral beliefs or, more generally, inferences about their normative beliefs. Children typically respond negatively toward individuals who act in ways that counter either moral or conventional norms (e.g., Ingram & Bering, 2010). By extension, children's negativity toward peers with incarcerated parents may stem from relatively broad inferences about their normative beliefs. However, there is reason to think that negativity toward children with incarcerated parents largely stems from inferences

about their moral beliefs. Critically, children typically respond *more* negatively toward individuals who act counter to widely shared moral beliefs than those who act counter to conventional beliefs (e.g., Hardecker et al., 2016). Because negativity toward children with incarcerated parents is so robust (e.g., Phillips & Gates, 2010), it may primarily stem from pessimistic inferences about these children's moral beliefs (often linked with relatively intense negativity) as compared to pessimistic inferences about conventional beliefs (often linked with relatively less negativity).

Alongside clarifying whether negativity toward children with incarcerated parents stems from inferences about their moral beliefs or, more broadly, about their normative beliefs, probing inferences about moral and conventional beliefs allowed us to contribute to literature on children's reasoning about different norms. Past work on this topic has typically asked children about both types of norms as a way of elucidating the extent to which children differentiate between norm types (Dahl & Kim, 2014; Hardecker et al., 2016; Liberman et al., 2018; Smetana, 1981), finding that children typically distinguish moral from conventional norms (Yucel et al., 2020). However, the extent to which children differentiate between norm types when making inferences about others' beliefs remains unclear. Asking about both moral and conventional norms allowed us to address this topic.

Finally, in addition to probing elementary schoolers' inferences about others' beliefs, we examined their pro-social behaviors toward peers with, versus without, incarcerated parents. This approach allowed us to examine the extent to which age-related changes concerning children's belief attributions and pro-social behaviors parallel one another. Social psychology has engaged in long-standing conversations about the extent to which mental states are associated with behaviors (e.g., the extent to which negative evaluations of group members co-occur with

negative behaviors toward those group members, LaPierre, 1934). Including variables measuring both cognition and behavior allowed us to investigate the extent to which these processes might be linked relatively early in development.

To address the topics discussed above, we recruited 5- to 6-year-olds and 7- to 8-year-olds. Testing children in this age range was important for two main reasons. First, prior work suggests that, around age 7, children begin to report relatively more pessimism about out-group members' morally relevant characteristics (e.g., Liberman et al., 2018). Thus, testing children in these groups allowed us to extend, and compare our results with, previous scholarship examining age-related changes in children's group-based reasoning. Second, children of this age readily attend to others' beliefs, including those that are morally relevant (e.g., Heiphetz et al., 2014). Therefore, recruiting 5- to 8-year-olds allowed us to probe children's inferences about others' normative beliefs. Third, children of this age can reason about legal punishment and those affected by it (Bregant et al., 2016; Dunlea & Heiphetz, 2021; Dunlea et al., 2020). Thus, we could investigate children's views of peers whose parents were incarcerated.

### **Overview of the Current Work**

Two studies examined children's socio-moral judgments and behaviors toward peers with and without incarcerated parents. Study 1 investigated this topic by asking elementary schoolers to indicate the extent to which peers with, versus without, incarcerated parents possessed moral beliefs. Study 2 sought to determine whether the results observed in Study 1 would replicate in a new sample and to probe several questions arising from these results, including (a) whether the responses in Study 1 were driven by reasoning about parental absence generally rather than incarceration specifically and (b) whether these responses might reflect a broader failure to attribute mental states to children with incarcerated parents or a more specific hesitation to

attribute *moral* beliefs. In addition to probing children's moral judgments, both studies also measured their pro-social behaviors toward peers with, versus without, incarcerated parents. In both studies, the majority of participants did not have an incarcerated parent themselves.

Across studies, we specifically probed children's socio-moral responses to peers with incarcerated mothers, as opposed to fathers. As discussed more fully in the procedure for Study 1, we did so because younger children generally have a more robust understanding of how mothers, as opposed to fathers, shape children's personal attributes (Goldman & Goldman, 1983; Johnson & Salomon, 1997). Additionally, asking about mothers allowed us to extend scholarship on parental incarceration. Perhaps because there are fewer incarcerated women than incarcerated men in the U.S. (Bronson & Carson, 2019), scholarship on parental incarceration has primarily focused on *paternal* incarceration (e.g., Andersen & Wildeman, 2014; Haskins, 2015; Turney, 2015). The current work thus broadens the scope of past scholarship on parental incarceration by focusing on mothers.

### Study 1

Study 1 investigated the extent to which children attributed moral and conventional beliefs to peers with, versus without, incarcerated parents. Additionally, we examined elementary schoolers' pro-social behaviors toward both groups of peers. We collected data for Study 1 between Winter 2019 and Summer 2019.

#### Method

**Participants.** Participants included 91 5- to 6-year-olds ( $M_{age}=5.47$  years,  $SD_{age}=.50$  years; 56% female, 44% male; 41% White or European-American, 18% Black or African-American, 15% Asian or Asian-American, 1% Native American or Pacific Islander, 19% multiracial, 4% other/not listed, remainder unspecified; 21% Hispanic or Latine [our



demographic questionnaire asked about ethnicity separately from race]) and 71 7- to 8-year-olds ( $M_{\text{age}}=7.64$  years,  $SD_{\text{age}}=.48$  years; 52% female, 48% male; 37% White or European-American, 21% Black or African-American, 14% Asian or Asian-American, 14% multiracial, 7% other/not listed, remainder unspecified; 18% Hispanic or Latine). Initially, we planned to include a mediator in Study 1 that would have required approximately 70 children per age group to detect our expected effect. We powered our study based on this analysis and overrecruited younger children because we expected that some data would not be usable (e.g., due to failure to understand the experimental items). As noted below, we used data from most participants in each age group.

The mediator used a switched-at-birth task (Gelman & Wellman, 1991) to test the extent to which children viewed contact with the legal system as heritable. Children learned about a baby who was born to an incarcerated mother but raised by a non-incarcerated mother and indicated (a) whether or not the baby would come into contact with the legal system after growing up, and (b) how sure they were of their answer. We asked about multiple types of contact with the legal system, including going to jail, being a criminal, and breaking the law. For each item, we created a scale where the low anchor indicated certainty that the character *would not* come into contact with the legal system and the high anchor indicated certainty that the character *would* come into contact with this system. We then averaged across the three types of contact with the legal system to create one composite score. Responses to this measure did not reliably mediate the relation between participant age and any of our dependent measures (moral belief attributions, conventional belief attributions, resource allocation). We also failed to find significant mediation when using only the item about future incarceration, which was most closely related to the dependent measure (which asked about incarceration specifically and did

not directly probe other forms of contact with the legal system). Although children may view contact with the legal system as heritable to some extent (Heiphetz, 2020), and children also use information about parental incarceration to draw conclusions about their peers' moral characteristics, the current study did not find strong evidence that these two processes are related to each other. Study 2 did not measure perceptions of heritability.

We excluded data from two 5- to 6-year-olds and two 7- to 8-year-olds due to parental interference ( $n=3$ ) and experimenter error ( $n=1$ ). The main pattern of results reported below emerged even when we opted not to exclude any participants from analyses. We recruited children from a departmental database and from a children's museum, both located in a large city in the northeastern U.S., and from a public library in a large suburb in the midwestern U.S.. Here and in Study 2, families signed up for inclusion in the departmental database either in person (at public street fairs, public parks, and the aforementioned children's museum) or by visiting our laboratory's website. Any family with eligible children could participate. As in other studies (e.g., Dunlea & Heiphetz, in press; Marshall et al., 2020), recruitment method did not reliably predict children's responses. All children received a small prize such as a sticker.

Fifteen parents reported that their child (seven 5- to 6-year-olds and eight 7- to 8-year-olds) knew someone who has been incarcerated; however, this variable did not reliably predict participants' responses (see Supplementary Materials for relevant analyses). Here and in Study 2, we also conducted a series of exploratory analyses examining the extent to which participant race and ethnicity predicted participant responses. Although people who are minoritized on the basis of race and ethnicity often have very different experiences in the criminal legal system than members of racial and ethnic majority groups (e.g., Forbes, 2016; Van Cleve, 2016), neither of

these variables reliably predicted participants' responses; see Supplementary Materials for relevant analyses.

**Procedure.** An experimenter tested children individually in a quiet room. At the start of each testing session here and in Study 2, the experimenter told children that they would answer questions about other people and that there were no right or wrong answers. The remainder of the study progressed in two parts (Blocks I and II).

Block I examined children's inferences about others' beliefs. The experimenter showed children pictures of eight pairs of stick figure characters, one pair at a time, on a Power Point display. During each trial, the experimenter pointed to each character and described them as being born to a mother who either had never gone to jail or was currently in jail (e.g., "See this person right here? [He/She] was born to a mom who is in jail right now. See [his/her] mom right here? And see this person right here? [He/She] was born to a mom who has never gone to jail. See [his/her] mom right here?"). The experimenter then asked children a test item to gauge their understanding of the story ("Can you point to the person whose mom is in jail right now?"). All but one child answered this question correctly on the first try; the participant who answered incorrectly received corrective feedback and provided the correct answer on her second try. The experimenter referred to the characters using pronouns matching the child's reported gender.

Although most people incarcerated in the U.S. are male (Bronson & Carson, 2019), the experimenter referred to the incarcerated individual as a mother in both Studies 1 and 2. We asked children about incarcerated mothers because younger elementary school-aged children generally have a more robust understanding of how mothers, as opposed to fathers, contribute to children's personal characteristics (e.g., morally relevant attributes, Johnson & Salomon, 1997; Springer, 1996; Williams & Tolmie, 2000) and development (e.g., Goldman & Goldman, 1983).

If we had asked about fathers, it would be unclear whether any age-related effects emerged because of developmental changes in socio-moral reasoning or in how children understand the link between fathers and children. Asking about mothers allowed us to circumvent this concern. Additionally, as previously mentioned, asking about mothers allowed us to extend literature on parental incarceration. Although the rate of maternal incarceration in the U.S. has risen exponentially over the past few decades (Equal Justice Initiative, 2020; Glaze & Maruschak, 2010), literature on parental incarceration has primarily focused on fathers (e.g., Andersen & Wildeman, 2014; Haskins, 2015; Turney, 2015). Asking about mothers thus broadens the scope of past scholarship on parental incarceration.

Next, the experimenter asked the participant which of the two characters held a certain moral or conventional belief. During each trial, the experimenter said, “One person here thinks that [X] is wrong. Can you point to the person who thinks that [X] is wrong?” For items probing participants’ perceptions of others’ moral beliefs, X included the following phrases: “pushing another person down on the playground,” “making another person cry on purpose,” “stealing another person’s toy,” and “hitting another person.” For items probing participants’ perceptions of others’ conventional beliefs, X included the following phrases: “breaking the rules of a game,” “not saying ‘please’ when asking for something,” “talking in class without raising your hand,” and “wearing pajamas to school.” After participants indicated their response directly to the experimenter, the experimenter followed up each initial item with an additional, more fine-grained item (“Are you very sure, kind of sure, or not very sure about that?”). We took this two-step approach from prior work in developmental psychology (e.g., Bregant et al., 2016; Dunlea & Heiphetz, 2021) and adapted all experimental items from work probing children’s views of moral and conventional norms (Lieberman et al., 2018; Smetana, 1981).

We assigned responses numerical values from -2.5 (indicating the most certainty that the peer whose parent had never been incarcerated possessed a certain belief) to +2.5 (indicating the most certainty that the peer whose parent was incarcerated possessed a certain belief). Because participants could not obtain a score of 0 on a single trial, this coding scheme allowed for the distance between scores on the same side of 0 (e.g., +2.5, indicating that the participant was “very sure” that the peer whose parent was incarcerated possessed a certain belief, and +1.5, indicating that the participant was “kind of sure” that the peer whose parent was incarcerated possessed a certain belief) to correspond to the distance between scores on opposite sides of 0 (e.g., -.5, indicating that the participant was “not very sure” that the peer whose parent had never been incarcerated possessed a certain belief, and +.5, indicating that the participant was “not very sure” that the peer whose parent was currently incarcerated possessed a certain belief).

Block II investigated children’s pro-social behaviors toward peers with, versus without, incarcerated parents. Here, the experimenter introduced participants to a resource allocation task. First, the experimenter showed children pictures of one of two peers on a Power Point display. The experimenter described each peer as being born to a mother who either had never gone to jail or was currently in jail. Next, the experimenter said, “Now, here are some stickers. You can decide how many stickers you want to give the person I just told you about. You can give as many stickers as you want, but you cannot keep any for yourself.” Participants received five stickers. The experimenter then showed children how to distribute stickers between two envelopes, one of which was blank and the other of which was illustrated with a picture of a trash bin. The experimenter told participants that the peer being discussed would receive stickers placed in the former envelope and that any stickers placed in the latter envelope would be discarded. The experimenter closed their eyes while the child distributed stickers. After children

allocated stickers during this first trial, the experimenter placed both envelopes aside until the end of the session and introduced the next peer. We adapted this procedure from scholarship examining children's pro-social behavior (Dunlea et al., in press; Huppert et al., 2020).

The following items were counterbalanced across participants: (1) order of experimental items, (2) order of peers within each trial (e.g., sometimes children completed the trial with the peer with an incarcerated mother first), (3) placement of peers within each trial (e.g., the peer with an incarcerated mother was sometimes on the left side of the screen), and (4) pairing of each experimental item with a particular picture. See Supplementary Materials for relevant materials for each study, including example coding sheets and stimuli.

## Results

Here and in Study 2, we used a Bonferroni correction to adjust analyses that included multiple comparisons. Below, we report the corrected alpha level alongside unadjusted  $p$  values. We averaged participants' responses to the four items concerning conventional beliefs ( $\alpha=.73$ ) and, separately, the four items concerning moral beliefs ( $\alpha=.81$ ). See Supplementary Materials for descriptive statistics for each measure in each of the studies. In addition to the main confirmatory analyses presented in each study, we conducted a series of exploratory analyses to examine the extent to which belief attribution scores predicted the number of resources children shared with peers whose parents were and, separately, were not incarcerated. Overall, we did not find strong evidence that participants' belief attribution scores predicted their resource allocation decisions (see Supplementary Materials for relevant analyses).

**Belief attributions.** A series of confirmatory analyses investigated participants' responses to the belief attribution items using two types of analyses (Fig. 1). First, we conducted a 2 (Participant Age: 5- to 6-year-old vs. 7- to 8-year-old) x 2 (Belief Type: moral vs.

conventional) mixed ANOVA with repeated measures on the second factor. This analysis revealed a main effect of Participant Age,  $F(1, 160)=10.40, p=.002, \eta_p^2=.06$ . Seven- to 8-year-olds indicated more certainty than did 5- to 6-year-olds that individuals without, versus with, an incarcerated parent possessed moral and conventional beliefs. This analysis also revealed a main effect of Belief Type,  $F(1, 160)=7.75, p=.006, \eta_p^2=.05$ . Children reported more certainty that peers whose parents were not, versus were, incarcerated possessed moral—rather than conventional—beliefs. The Participant Age x Belief Type interaction did not reach significance ( $p=.865$ ).

Second, we conducted a series of exploratory one-sample *t*-tests to compare mean responses in each group to the midpoint of the scale (0, the average value that would be expected if participants, on average, were completely uncertain about which individual held a particular belief). The purpose of these analyses was to garner a more fine-grained understanding of potential age-related differences in children's belief attributions. This analysis included four comparisons; therefore, *p* values needed to be .013 or lower to pass the Bonferroni-corrected significance threshold.

Participants in both age groups were relatively certain that individuals without, versus with, an incarcerated parent possessed moral beliefs (younger:  $p<.001$ , Cohen's  $d=-.39$ , 95%  $CI_{diff}$ : [-.90, -.28]; older:  $p<.001$ , Cohen's  $d=-.91$ , 95%  $CI_{diff}$ : [-1.60, -.94]). A different pattern emerged for attributions of conventional beliefs. Older participants were relatively certain that individuals without, versus with, an incarcerated parent possessed conventional beliefs ( $p<.001$ , Cohen's  $d=-.70$ , 95%  $CI_{diff}$ : [-1.31, -.65]). However, younger participants were uncertain about whether individuals with incarcerated parents or individuals whose parents were not incarcerated

were more likely to hold conventional beliefs ( $p=.029$  [this effect falls to non-significance after applying a Bonferroni correction], Cohen's  $d=-.23$ , 95%  $CI_{diff}$ : [-.63, -.04]).

[Fig 1 goes here]

*Fig. 1.* Average certainty that peers with, versus without, incarcerated parents hold moral and conventional beliefs, Study 1. More negative scores reflect greater certainty that individuals whose parent is not incarcerated possess a specific belief; more positive scores reflect greater certainty that individuals whose parent is incarcerated possess a specific belief. Zero indicates uncertainty regarding which individual possesses a specific belief. Error bars represent 95% confidence intervals.

**Resource allocation task.** A confirmatory 2 (Participant Age: 5- to 6-year-olds vs. 7- to 8-year-olds) x 2 (Peer Description: parent not incarcerated vs. parent incarcerated) mixed ANOVA with repeated measures on the second factor analyzed participants' resource allocations. This test revealed a main effect of Peer Description ( $F(1, 157)=76.90, p<.001, \eta_p^2=.33$ ). Participants shared fewer stickers with the peer whose parent was incarcerated than with the peer whose parent was not incarcerated. Neither the main effect of Participant Age nor the Participant Age x Peer Description interaction reached significance ( $ps \geq .847$ ; Fig. 2).

[Fig. 2 goes here]

*Fig. 2.* Average number of resources shared with peers with, versus without, incarcerated parents, Study 1. Error bars represent 95% confidence intervals.

## Discussion

Study 1 examined children's evaluations of—and behaviors toward—peers with, versus without, incarcerated parents. To do so, we recruited a sample of elementary schoolers—a majority of whom had parents who were not incarcerated—between the ages of 5 and 8 years



old. Several results emerged. First, children reported greater certainty that peers whose parents were not, versus were, incarcerated possessed moral beliefs. Second, although children in both age groups reported pessimism about peers with incarcerated parents, such pessimism was more robust among 7- to 8-year-olds than 5- to 6-year-olds. The magnitude of effect size comparing moral belief attribution scores to 0 (indicating uncertainty whether peers with, versus without, incarcerated parents possessed a certain belief) was larger among older children (Cohen's  $|d|=0.91$ ) than younger children (Cohen's  $|d|=0.39$ ). Thus, these results also dovetail with work suggesting that children's optimism toward others decreases with age (e.g., Boseovski et al., 2010). Third, children shared fewer stickers with the peer whose parent was incarcerated than with the peer whose parent was not incarcerated. Together, these findings suggest that children's negative evaluations of peers with incarcerated parents co-occur with negative behaviors toward such individuals.

## Study 2

Study 2 extended Study 1 in several ways. One primary contribution of Study 2 was to investigate whether the main pattern of results from Study 1 hinged on children's inferences about parental incarceration or, more generally, parental absence. Many beliefs that children hold—including normative beliefs—stem from information directly provided by parents (e.g., Berkowitz & Grych, 1988). Therefore, when making inferences about others' beliefs, children may reflect on their own salient learning experiences and conclude that others' acquire normative beliefs via social input. Such a pattern of results could, in part, explain why participants in Study 1 inferred that peers with incarcerated parents lack normative beliefs: namely, children could have reasoned that such individuals lack normative beliefs because do not have direct access to a parental figure from whom to learn socially relevant information. We

aimed to distill the effects of parental incarceration, versus parental absence, by probing children's views about three peers: one whose parent was incarcerated, one whose parent was away on a business trip, and one whose parent was present. If children's judgments in Study 1 hinged on inferences about parental absence, children in Study 2 may report similar views of the peer whose parent is incarcerated and the peer whose parent is away on a business trip. Alternatively, if children's judgments hinged on inferences about parental incarceration, children in Study 2 may report different views of these two peers.

Another primary contribution of Study 2 was to investigate the extent to which the pattern of results from Study 1 would generalize to different types of beliefs. To do so, we probed children's inferences about others' *factual* beliefs in addition to the moral and conventional beliefs tested in Study 1. Probing children's views of others' factual beliefs was important for two main reasons. First, this approach allowed us to determine the extent to which older children in Study 1 were pessimistic that peers with incarcerated parents possessed normative beliefs versus the extent to which they viewed peers with incarcerated parents as possessing relatively few mental states overall. Evidence in favor of the latter possibility would support the idea that children dehumanize peers with incarcerated parents. Broadly, scholars have conceptualized dehumanization as involving the denial of qualities of human-like qualities, with many directly linking dehumanization with decreased overall mental state attributions (for a review, see Haslam & Loughnan, 2014). While the literature on dehumanization among adults is robust, a relatively small subset of studies has examined when—and *whom*—children dehumanize (for a notable exception, see McLoughlin & Over, 2017). Our work contributes to this nascent literature by examining the extent to which children attribute fewer human-like mental states to members of a specific social group (i.e., children with incarcerated parents).

Second, this approach allowed us to compare our findings with previous scholarship investigating the extent to which children view moral beliefs as fact-like. Prior work suggests that children in preschool and elementary school view moral claims as objectively true or false, similar to factual claims, particularly when those moral claims concern issues that elicit widespread agreement (e.g., whether hitting someone for no reason is morally wrong; Heiphetz & Young, 2017). Comparing moral beliefs with factual beliefs in the current work allowed us to determine whether children also distinguish these two types of beliefs when attributing mental states to others rather than deciding whether only one person in a disagreement can be correct.

Study 2 also made two secondary contributions. First, this study determined the extent to which the pattern of results from Study 1 would conceptually replicate in a new sample of children. Second, Study 2 asked children to make absolute judgments of others' beliefs (e.g., whether peers with an incarcerated parent possessed moral beliefs). In Study 1, participants made relative judgments by selecting which of two peers held a particular belief. While other programs of research have used similar approaches to probe children's views of others (e.g., Liberman et al., 2018), one drawback of this approach in the context of the current work is that it could not offer direct insight regarding absolute inferences about others' beliefs. For instance, elementary schoolers may believe that peers with incarcerated parents do possess *some* moral beliefs, albeit fewer than their peers whose parents are not incarcerated. Study 2's method allowed for more nuance in capturing children's responses. We collected data for Study 2 between Spring 2020 and Spring 2021.

## **Method**

**Participants.** We initially planned to follow the same recruitment procedure outlined in Study 1. However, due to the COVID-19 outbreak in Spring 2020, we tested participants

remotely using an online videoconferencing platform (Zoom). We recruited participants via a departmental database, social media advertisement campaigns, and a website for families interested in signing up for research studies (<https://childrenhelpingscience.com>). Any English-speaking family living in the U.S. with eligible children could participate. To be consistent with Study 1, we aimed to recruit approximately 83 participants per age group.

Our final sample included 84 5- to 6-year-olds ( $M_{\text{age}}=5.44$  years,  $SD_{\text{age}}=.50$  years; 45% female, 51% male, remainder unspecified; 71% White or European-American, 2% Black or African-American, 7% Asian or Asian-American, 12% multiracial, 2% other/not listed, remainder unspecified; 10% Hispanic or Latine, 86% not Hispanic or Latine, remainder unspecified), and 85 7- to 8-year-olds ( $M_{\text{age}}=7.51$  years,  $SD_{\text{age}}=.53$  years; 40% female, 58% male, 1% other/not listed, remainder unspecified; 59% White or European-American, 5% Black or African-American, 8% Asian or Asian-American, 22% multiracial, 2% other/not listed, remainder unspecified; 6% Hispanic or Latine, 91% not Hispanic or Latine, remainder unspecified). We excluded data from one additional older child because she did not understand the study. Study 2's main pattern of results emerged even when we did not to exclude any participants. All participants received a \$5 Amazon gift card. Seven parents reported their child (six 5- to 6-year-olds and one 7- to 8-year-old) knew someone who has been incarcerated. Exploratory analyses revealed that this variable did not reliably predict participants' responses (see Supplementary Materials).

**Procedure.** Study 2 progressed in three parts. In Part I, the experimenter told children that they would learn about different people and then showed children a picture of three peers on a PowerPoint display. The experimenter pointed to each peer one at a time and described one as having a mother who was away from home because she was incarcerated, another as having a

mother who was away from home because she was on a business trip, and the third as having a mother who lived with them at home. Importantly, the experimenter specified that the former two characters were separated from their parents for the same amount of time (one year). As mentioned in Study 2's introduction, including the business trip condition helped determine the extent to which the pattern of results from Study 1 depended on children's inferences about parental incarceration specifically or parental absence more broadly. We included the business trip condition as a matched control condition because, like incarceration (Travis, 2005), work-related absences can be lengthy but are typically temporary (for a similar approach, see Dunlea & Heiphetz, 2021).

In Part II, the experimenter re-introduced participants to each peer, one at a time, and reminded participants about that peer at a broad level (e.g., “[He/She] lives far away from [his/her] mom because [his/her] mom is traveling on a business trip right now. [His/Her] mom has been away on the business trip for one year”). Participants then answered nine yes-or-no items probing their inferences about each peer's beliefs. Three items probed children's inferences about peers' moral beliefs (e.g., “Does this person think that hitting another person is wrong?”), three items probed children's inferences about peers' conventional beliefs (e.g., “Does this person think talking in class without raising your hand is wrong?”), and three items probed children's inferences about peers' factual beliefs (e.g., “Does this person think that germs are very small?”). The experimenter followed up each yes-no item with a more fine-grained item (“Are you really sure, kind of sure, or not very sure about that?”). As in Study 1, participants dictated their responses to each item directly to the experimenter.

As in Study 1, we assigned numerical values from -2.5 (indicating most certainty that a given character did *not* possess a certain belief) to +2.5 (indicating most certainty that a given

character *did* possess a certain belief). Participants answered all items about one character before moving on to items about the next character. The order of experimental items (e.g., items probing participants' inferences about others' beliefs) was counterbalanced across participants. We selected the moral and conventional beliefs in Study 2 from the pool of items used in Study 1 based on how representative they were of each belief category. To determine representativeness, we calculated a mean belief attribution score for each belief category based on the four items per belief category in Study 1. We then selected the three items whose average scores were closest to the overall mean for inclusion in the present study. We adapted items probing children's inferences about factual beliefs from work examining children's views of such beliefs (Heiphetz et al., 2014).

In Part III, as in Part II, the experimenter re-introduced participants to each peer, one at a time. After re-introducing a given peer, the interviewer showed participants pictures of five stickers and subsequently said, "Now, here are some stickers. You can decide how many stickers you want to give to the person I just told you about. You can give as many stickers as you want, but you cannot keep any for yourself." The experimenter then showed children how to distribute the stickers between two envelopes, one of which was illustrated with a picture of a stick figure resembling the peer that the experimenter had just re-introduced and the other of which was illustrated with a picture of a trash can. The experimenter told participants that the peer being discussed would receive any stickers placed in the former envelope and that any stickers placed in the latter envelope would be discarded. Participants indicated the envelopes into which they wanted to place the stickers and observed (via video camera) the experimenter placing actual stickers in the corresponding envelopes. Participants finished making resource allocation

decisions for a given peer before moving on to the next trial. The order in which participants made allocation decisions for each peer was counterbalanced across participants.

## Results

In the section below, all non-integer degrees of freedom reflect a Greenhouse-Geisser adjustment to correct for a violation of the assumption of sphericity. See Supplementary Materials for detailed statistics, including the  $p$  value, 95% confidence interval on the difference between means, and effect size associated with each pairwise comparison.

**Belief attributions.** As in Study 1, a series of confirmatory analyses investigated participants' responses to the belief attribution items using two types of analyses (Fig. 3). First, we analyzed participants' responses using a 2 (Participant Age: 5- to 6-year-olds vs. 7- to 8-year-olds) x 3 (Parent Description: present vs. business trip vs. incarcerated) x 3 (Belief Type: moral vs. conventional vs. factual) mixed ANOVA with repeated measures on the latter two factors. This analysis revealed main effects of Parent Description ( $F(1.92, 330.50)=28.32, p<.001, \eta_p^2=.15$ ) and Belief Type ( $F(2, 334)=46.06, p<.001, \eta_p^2=.22$ ). We also found a Participant Age x Parent Description interaction ( $F(1.92, 321.06)=4.07, p=.019, \eta_p^2=.02$ ) and a Peer Description x Belief Type interaction ( $F(3.70, 617.86)=7.24, p<.001, \eta_p^2=.04$ ). These effects were qualified by a Participant Age x Parent Description x Belief Type interaction ( $F(3.70, 617.86)=3.06, p=.019, \eta_p^2=.02$ ). No other main effects or interactions reached significance ( $ps \geq .232$ ).

To better understand the three-way interaction, we compared children's views of each belief type for a given peer with their views of that same belief type for each other peer. For example, we compared the extent to which children attributed moral beliefs to the peer whose parent was present with the extent to which they attributed moral beliefs to each other peer (i.e., the peer whose parent was on the business trip and, separately, the peer whose parent was

incarcerated). We conducted these analyses separately for 5- to 6-year-olds and 7- to 8-year-olds. This analysis included 18 comparisons; therefore,  $p$  values needed to be .003 or lower to pass the Bonferroni-corrected significance threshold.

Younger children indicated more certainty that the peer whose parent was present, versus the peer whose parent was incarcerated, possessed moral beliefs ( $p=.002$ , Cohen's  $d=.34$ ). No other comparisons among younger children reached significance ( $ps \geq .016$ ; Cohen's  $ds \leq .27$ ). A different pattern of results emerged among older children. Namely, older children indicated more certainty that the peer whose parent was present, versus any other peer, possessed moral beliefs (parent on business trip:  $p<.001$ , Cohen's  $d=.42$ , 95%  $CI_{diff}$ : [.22, .69]; parent incarcerated:  $p<.001$ , Cohen's  $d=.80$ , 95%  $CI_{diff}$ : [.94, 1.63]). Older children also indicated more certainty that the peer whose parent was on a business trip, versus incarcerated, possessed moral beliefs ( $p<.001$ , Cohen's  $d=.48$ , 95%  $CI_{diff}$ : [.46, 1.20]). Finally, older children indicated more certainty that the peer whose parent was present, versus any other peer, possessed conventional beliefs (parent on business trip:  $p<.001$ , Cohen's  $d=.44$ , 95%  $CI_{diff}$ : [.27, .80]; parent incarcerated:  $p<.001$ , Cohen's  $d=.59$ , 95%  $CI_{diff}$ : [.61, 1.30]). No other comparisons reached significance ( $ps \geq .018$ ; Cohen's  $ds \leq .26$ ).

For consistency with the analyses presented in Study 1, we also conducted a series of exploratory one-sample  $t$ -tests to compare moral, conventional, and factual belief attribution scores in each parent description condition to 0. We conducted these analyses separately for 5- to 6-year-olds and 7- to 8-year-olds. This analysis included 18 comparisons; therefore,  $p$  values needed to be .003 or lower to pass the Bonferroni-corrected significance threshold. All belief attribution scores were significantly above the scale midpoint ( $ps \leq .001$ ; Cohen's  $ds \geq .37$ ),



suggesting that children in both age groups attributed some degree of moral, conventional, and factual beliefs to peers in each parent description condition.

[Fig. 3 goes here]

*Fig. 3.* Average certainty that different characters hold moral, conventional, and factual beliefs, Study 2. More positive numbers reflect greater certainty that characters possess a specific type of belief. Error bars represent 95% confidence intervals.

**Resource allocation task.** Next, a confirmatory 2 (Participant Age: 5- to 6-year-olds vs. 7- to 8-year-olds) x 3 (Parent Description: present vs. business trip vs. incarcerated) mixed ANOVA with repeated measures on the second factor analyzed participants' resource allocations (Fig. 4). This analysis revealed a main effect of Parent Description ( $F(1.75, 292.30)=18.21$ ,  $p<.001$ ,  $\eta_p^2=.10$ ). To better understand this main effect, we compared the number of resources participants shared with a given peer with the number of resources participants shared with each other peer. Doing so resulted in three comparisons; therefore,  $p$  values needed to be .017 or lower to pass the Bonferroni-corrected significance threshold. Children shared more resources with the peer whose parent was present than the peer whose parent was on a business trip ( $p=.007$ , Cohen's  $d=.21$ , 95%  $CI_{diff}$ : [.09, .55]) and with the peer whose parent was on a business trip than the peer whose parent was incarcerated ( $p<.001$ , Cohen's  $d=.29$ , 95%  $CI_{diff}$ : [.25, .79]). Neither the main effect of Participant Age nor the Participant Age x Parent Description interaction reached significance ( $ps\geq.193$ ).

[Fig. 4 goes here]

*Fig. 4.* Average number of resources shared with different characters, Study 2. Error bars represent 95% confidence intervals.

## Discussion

Study 2 examined the extent to which children's judgments of and behaviors toward peers in Study 1 hinged on information about parental incarceration versus parental absence. We did so by recruiting a sample of elementary schoolers—a majority of whom had parents who were not incarcerated—between the ages of 5 and 8 years old. Several notable results emerged. First, differences emerged across conditions with regards to children's moral belief attribution scores. Older children's moral belief attribution scores were higher in the "parent present" than in the "parent on business trip" condition. One possible interpretation for this finding is that older children in Study 2 understood parental absence as a missed opportunity for a robust moral education (e.g., frequent parent-child conversations about morally relevant topics). Moreover, this finding suggests that parental absence drove some of the effects documented in Study 1. Additionally, older children's moral belief attribution scores were higher in the "parent on business trip" condition than in the "parent incarcerated" condition. This finding suggests that older children's inferences about parental incarceration may have contributed to the pattern of results found in Study 1. Although younger children differentiated between the "parent incarcerated" and "parent present" conditions, a difference between the aforementioned conditions and the "parent on business trip" condition did not emerge. Because older children were more likely than younger children to starkly differentiate between characters whose parents were absent versus present when making inferences about moral beliefs, the perceived link between parental absence and a missed chance for moral education may strengthen with age.

Second, we did not find that older children differentiated between the "parent on business trip" and "parent incarcerated" conditions when reasoning about conventional beliefs. However, older children *did* differentiate between the aforementioned conditions and the "parent present" condition. These results may suggest that older children understand parental absence in general

as a cue about individuals' conventional, rather than moral, beliefs. Although both younger and older children in Study 1 reported more certainty that peers whose parents were not, versus were, incarcerated possessed conventional beliefs, younger children's conventional belief attribution scores did not vary across parent description conditions in Study 2. This difference across studies may stem from divergent methods of response elicitation. In Study 1, participants compared peers' beliefs (i.e., whether a peer with an incarcerated parent *or* a peer whose parent was not incarcerated possessed a certain belief). This direct comparison may have increased younger children's differentiation between the conventional beliefs of peers with, versus without, incarcerated parents.

Third, among both younger and older children, we did not find that attributions of factual beliefs varied across parent description conditions. These findings indicate that children distinguish moral and factual beliefs when attributing these mental states to others despite the similar responses children exhibit to these mental states when judging the extent to which they reflect objective truths about which only one person can be right (e.g., Heiphetz & Young, 2017). This pattern of results also suggests that neither parental absence nor parental incarceration impact children's inferences about others' factual beliefs. Because variation emerged across some parent description conditions for children's attributions of moral and conventional—but not factual—beliefs, Study 2 offers evidence against the possibility that Study 1's results emerged from a general tendency for children to dehumanize peers with incarcerated parents. Given the difficulty of interpreting null effects, it is possible that children do actually dehumanize peers with incarcerated parents but that the current methodology failed to capture this phenomenon. This possibility may be unlikely because the same method captured differences in attributions regarding moral and conventional beliefs; however, future work can

further investigate factual beliefs to determine whether this null effect emerges in different paradigms.

Fourth, children in Study 2 shared the largest number of resources with peers whose parents were present, followed by peers whose parents were on a business trip, followed by peers whose parents were incarcerated. This pattern of results suggests that, regardless of age, children's resource allocation decisions hinge on information about parental absence and, separately, information about parental incarceration. These results also suggest that children's unequal resource allocation decisions in Study 1 were not entirely driven by parental absence.

### **General Discussion**

Institutional actors in the U.S. often treat incarcerated and formerly incarcerated individuals with scorn and judgment (e.g., Forbes, 2016; Van Cleve, 2016), and this negativity spills over into judgments of their children (e.g., Krupat, 2007; Murray et al., 2012). However, the developmental foundations of negativity toward children with incarcerated parents remain unclear. We addressed this topic by probing younger (5- to 6-year-old) and older (7- to 8-year-old) children's inferences about the beliefs of peers with, versus without, incarcerated mothers. We also investigated children's behaviors toward peers with and without an incarcerated parent.

In Study 1, children reported greater certainty that peers without, versus with, incarcerated parents possessed moral beliefs. Although children in both age groups reported pessimism about the moral beliefs of peers with incarcerated parents, such pessimism was more robust among 7- to 8-year-olds than among 5- to 6-year-olds. Study 2 extended Study 1's results in several ways. Namely, Study 2 suggested that older children's inferences about parental incarceration uniquely contribute to their pessimism regarding the moral beliefs of peers whose parents are incarcerated. However, we did not find strong evidence that information about

parental incarceration uniquely contributes to younger children's inferences about the moral beliefs of peers whose parents are incarcerated. Study 2 also suggested that older children's pessimism regarding the conventional beliefs of peers with incarcerated parents largely hinged on parental absence broadly as opposed to parental incarceration specifically. Moreover, Study 2 showed that the pattern of results from Study 1 did not extend to factual beliefs, which children readily attributed to their peers regardless of parental incarceration status. That is, differential rates of attributing moral beliefs did not seem to reflect a broader tendency to dehumanize by failing to attribute any mental states to children with incarcerated parents. In addition to reporting negativity about the moral beliefs of peers with incarcerated parents, participants also shared fewer resources with peers of incarcerated parents, suggesting that children perceive peers of incarcerated parents not just as immoral but also as unworthy recipients of moral actions.

The primary contribution of the current work includes clarifying how age-related changes in social cognition shape children's responses to peers with incarcerated parents. A priori, two competing possibilities arose from the extant literature. On the one hand, pessimism regarding the morality of children whose parents are incarcerated could strengthen with age. Some past work suggests that pessimism—including optimism about out-group members' morally relevant characteristics (Lieberman et al., 2018)—increases across development (Boseovski, 2010). Thus, age-related changes in optimism and intergroup reasoning may jointly lead older, versus younger, participants to be especially pessimistic regarding the extent to which peers with incarcerated parents possess moral beliefs. On the other hand, younger and older children may report similar levels of pessimism that peers with, versus without, incarcerated possess moral beliefs. Because even young children make inferences about individuals based on those individuals' social relationships (Chalik & Rhodes, 2014) and draw negative conclusions about

punished individuals (Dunlea & Heiphetz, 2020), younger and older participants may report similar levels of pessimism that peers with incarcerated parents possess moral beliefs.

The current work supports the former possibility. In Study 1, pessimism toward peers with, versus without, incarcerated parents was more robust among 7- to 8-year-olds than 5- to 6-year-olds. Further, Study 2 suggested that older children's pessimism toward peers with incarcerated parents uniquely stemmed from their inferences about parental incarceration rather than parental absence more generally. Here, older children reported the most optimism regarding the moral beliefs of peers in the "parent present" condition and least optimism in the "parent incarcerated" condition. Belief attribution scores in the "parent on business trip" condition fell between these extremes. The fact that older children differentiated between the "parent present" condition and the conditions where characters' parents were absent (the "parent on business trip" and "parent incarcerated" conditions) suggests that older children may use information about parental absence to make inferences about others' moral beliefs. Further, the fact that older children differentiated between the "parent on business trip" and "parent incarcerated" conditions suggests that children may also use information about parental incarceration to make inferences about others' moral beliefs. The negativity associated with each factor could have individually contributed to pessimism regarding the moral beliefs of peers with incarcerated parents. However, we did not find that younger children differentiated between the "parent on business trip" condition and the remaining two conditions. The fact that younger children did not clearly differentiate across conditions suggests that younger children's negativity toward peers with incarcerated parents may not stem from completely separable factors (i.e., negativity associated with parental incarceration plus the negativity associated with parental absence).

Another contribution of the current work includes clarifying the extent to which children differentiate between moral and conventional norms when making inferences about others' beliefs. As previously mentioned, older children in Study 2 reliably differentiated across conditions when making inferences about others' moral beliefs. Specifically, children were particularly pessimistic that peers with incarcerated parents would possess moral beliefs, suggesting that they may infer that incarcerated individuals are especially incapable of teaching others information about moral norms. However, we did not find that older children differentiated between the "parent on business trip" and "parent incarcerated" conditions when making inferences about others' conventional beliefs. Together, these findings may suggest that older children reason that peers' moral beliefs are associated with parental incarceration specifically, whereas peers' conventional beliefs are associated with parental absence more broadly. This pattern of results may emerge because children often view incarcerated individuals as lacking positive moral characteristics and failing to abide by widely shared moral norms (Dunlea & Heiphetz, 2020). Thus, children may also infer that incarcerated individuals especially lack the capacity to convey morally relevant information to their own progeny.

Additional contributions of the current work stem from testing children's behaviors. Across studies, children shared fewer resources with peers with, versus without, incarcerated parents. Unlike with the pattern of results concerning children's belief attributions, we did not find that participant age strongly predicted resource allocation decisions. Together, these results suggest that age-related changes in socio-moral reasoning may not always give rise to corresponding changes in behavior. In addition to clarifying the extent to which age-related changes concerning children's belief attributions and pro-social behaviors parallel one another, probing children's behaviors clarifies the everyday experiences of individuals with incarcerated

parents. Extending prior findings suggesting that adults readily withhold resources from children with incarcerated parents (Murray et al., 2012), the current work suggests that children may also behave less generously toward their peers with, versus without, incarcerated parents. This finding is consequential given that resource-based inequality is often linked with several negative outcomes for those who receive relatively fewer resources, including feelings of inadequacy and other forms of social exclusion (Bierman, 2004).

### **Limitations and Directions for Future Research**

The current work leveraged experimental methods to make several unique theoretical contributions and highlighted an understudied topic within psychology. Yet, the current work is limited in some ways and several avenues remain open for future research. One limitation is that our research participants, as well as the characters we asked about (children with incarcerated parents), represent a sliver of human diversity. Future work can address this limitation in two ways. First, future work can widen the scope of individuals who participate in research by recruiting children who have experienced parental incarceration. Though some caregivers in the current work reported that their children had an incarcerated parent (see Supplementary Materials), future work can recruit children with incarcerated and non-incarcerated parents to clarify the role of parental incarceration in shaping children's responses to peers with incarcerated parents. Future work can also include children whose parents were incarcerated in the past but are not presently incarcerated to determine how past, versus ongoing, parental incarceration might shape social and moral cognition.

Parents, including those who are incarcerated, often play a powerful role in shaping their children's positive moral development (e.g., Berkowitz & Grych, 1988). For instance, both incarcerated and non-incarcerated parents often teach their children about widely shared moral



beliefs (e.g., hitting another person for no reason is wrong) and encourage their children to act in prosocial ways (Kaiper-Marquez et al., 2021). Thus, when making judgments about other peers with incarcerated parents, children may reflect on their own experiences of internalizing morally relevant messages from their incarcerated parents and, in turn, conclude that other peers whose parents are, or have been, incarcerated possess moral beliefs. Moreover, children with incarcerated parents may view peers whose parents are also incarcerated as members of their social in-group. Because people often behave generously toward ingroup members (e.g., Heiphetz & Young, 2019), children with incarcerated parents, compared to children whose parents are not incarcerated, may act prosocially toward peers whose parents are also incarcerated. Future work can test these possibilities and probe the extent to which children who are currently experiencing parental incarceration view peers who have ever experienced parental incarceration, even if that incarceration happened in the past, as in-group members.

Second, future work can probe children's responses to a wider array of individuals with stigmatized identities. Of course, focusing on children's perceptions of peers with incarcerated parents is important in its own right: doing so provides insight into the experiences faced by individuals belonging to a group that is often excluded from the scientific record. However, our focus on a single stigmatized group makes it difficult to draw conclusions about how the negativity associated with parental incarceration compares to the negativity associated with membership in other stigmatized identity groups. Future work can address this topic by investigating the extent to which children's responses toward peers with incarcerated parents generalize to members of other groups, such as those whose families are poor (Shutts et al., 2016). With age, elementary schoolers begin to attribute some positive characteristics, such as warmth, to poor individuals (Yang & Dunham, in press). A similar effect could emerge for other

positive characteristics, such as moral beliefs. Such a finding would suggest that parental incarceration is a stronger cue to immorality than poverty.

In addition to probing the extent to which children fail to attribute moral beliefs to members of different stigmatized social groups, future work can examine whether children's resource allocation decisions concerning members of stigmatized groups depend on the type of resource at hand. Future studies can examine how children allocate items that are essential for survival (e.g., an adequate amount of healthy food) versus items that are not (e.g., stickers). Elementary schoolers are more likely to share resources equally if they are necessary for the recipients' wellbeing than if they are not (Rizzo et al., 2016). A similar pattern may emerge in the present work: children may share a similar number of necessary resources with peers whose parents are and are not incarcerated while sharing different amounts of resources across characters when those resources are not linked with wellbeing. This pattern would dovetail with findings suggesting that children consider item value when making resource allocation decisions (Rizzo et al., 2016; Shaw & Olson, 2013). Alternatively, children may share relatively few resources of all types with peers whose parents are incarcerated. Such a finding could provide evidence that children more readily attend to the needs of peers without, versus with, incarcerated parents. Because ignoring others' needs is linked with dehumanization (Haslam & Loughnan, 2014), this pattern could also offer indirect evidence that children may dehumanize peers with incarcerated parents in some ways, despite their propensity to attribute some mental states to these children (Study 2).

Future research can also clarify the mechanism underlying children's moral belief attributions. One candidate mechanism is *psychological essentialism*—the notion that people's characteristics stem from immutable, biologically-based “essences” (Gelman, 2003; Medin &

Ortony, 1989). Children readily apply an essentialist framework when reasoning about a wide range of human characteristics, including morally relevant characteristics (Heiphetz, 2020). Moreover, elementary schoolers also report that incarcerated people possess negative moral characteristics (Dunlea & Heiphetz, 2020). Because (a) children often view morality as rooted in biology and (b) incarcerated people as possessing negative moral characteristics, elementary schoolers in the current work could have reasoned that children with incarcerated parents inherit immoral characteristics from their parents. Although this possibility seemed compelling *a priori*, perceptions of heritability may not underlie children's reasoning about the moral characteristics of peers with incarcerated parents (see Method Section in Study 1). An alternative candidate mechanism focuses on social learning. In Study 2, older children's moral belief attribution scores were higher in the "parent present" than in the "parent on business trip" condition. One interpretation of this finding is that 7- to 8-year-olds may believe that others acquire morally relevant beliefs via direct social interactions. For instance, children may view parents as a source of moral education (Kaiper-Marquez et al., 2021) and conclude that peers who do not live with their parents, and therefore lack ready access to this form of moral education, are less moral than children who are growing up with their parents. Future work can test this possibility.

Finally, in addition to clarifying the mechanism underlying children's belief attributions, future work can investigate the mechanism underlying children's resource allocation decisions. As previously mentioned, we did not find that participants' belief attribution scores reliably predicted their resource allocation decisions in the current work (see Supplementary Materials). In conjunction with past work testing the link between cognition and behavior, these findings may suggest that the link between cognition and behavior may be relatively robust for the self (i.e., when people's own beliefs drive their own behaviors, Hommel, 2003) but weaker when

reasoning about others (i.e., when people's beliefs about others drive their behaviors toward such individuals). In addition to examining this possibility more closely, future work can explore another candidate mechanism related to children's expectations of wealth and reciprocity. Children expect relatively richer individuals to be more likely to share than poorer individuals (Ahl & Dunham, 2019) and are generally more willing to share resources with individuals whom they expect to share with them in the future (Renno & Shutts, 2015). In our work, children may have concluded that peers with incarcerated parents would not be able to reciprocate generosity, perhaps because their parent would not be able to provide sufficient resources for them to do so. Such reasoning could have influenced children's own resource allocation decisions with peers. Future work can test this possibility.

### **Conclusion**

We probed elementary schoolers' inferences about and behaviors toward peers with, versus without, incarcerated parents. Across studies, younger and older children reported more certainty that peers without, versus with, incarcerated parents possessed moral beliefs. While older children's inferences may have stemmed from judgments regarding parental incarceration specifically, younger children's responses may have been more sensitive to parental absence more broadly. Also across studies, older children reported more certainty that peers without, versus with, incarcerated parents possessed conventional beliefs—a difference that appeared to stem from their inferences about parental absence. To complement this focus on moral cognition, the present work also measured children's behaviors toward peers. Regardless of age, children shared fewer resources with peers with, versus without, incarcerated parents. Together, these findings help clarify how early systems of socio-moral judgment may contribute to, and reinforce, negativity toward children with incarcerated parents.

### References

- Andersen, S. H., & Wildeman, C. (2014). The effect of paternal incarceration on children's risk of foster care placement. *Social Forces*, *93*, 269-298. <https://doi.org/10.1093/sf/sou027>
- Berkowitz, M. W., & Grych, J. H. (1998). Fostering goodness: Teaching parents to facilitate children's moral development. *Journal of Moral Education*, *27*, 371-391. <https://doi.org/10.1080/0305724980270307>
- Bierman, K. L. (2004). *Peer rejection: Developmental processes and intervention strategies*. Guilford Press.
- Boseovski, J. J. (2010). Evidence for "rose-colored glasses": An examination of the positivity bias in young children's personality judgments. *Child Development Perspectives*, *4*, 212-218. <https://doi.org/10.1111/j.1750-8606.2010.00149.x>
- Bregant, J., Shaw, A., & Kinzler, K. D. (2016). Intuitive jurisprudence: Early reasoning about the functions of punishment. *Journal of Empirical Legal Studies*, *13*, 693-717. <https://doi.org/10.1111/jels.12130>
- Bronson, J., & Carson, E. A., (2019). *Prisoners in 2017*. Retrieved January 7<sup>th</sup>, 2022, from <https://www.bjs.gov/content/pub/pdf/p17.pdf>
- Chalik, L., & Rhodes, M. (2014). Preschoolers use social allegiances to predict behavior. *Journal of Cognition and Development*, *15*, 136-160. <https://doi.org/10.1080/15248372.2012.728546>
- Dahl, A., & Kim, L. (2014). Why is it bad to make a mess? Preschoolers' conceptions of pragmatic norms. *Cognitive Development*, *32*, 12-22. <https://doi.org/10.1016/j.cogdev.2014.05.004>

- Dunlea, J. P., & Heiphetz, L. (2020). Children's and adults' understanding of punishment and the criminal justice system. *Journal of Experimental Social Psychology*, *87*, 103913.  
<https://doi.org/10.1016/j.jesp.2019.103913>
- Dunlea, J. P., & Heiphetz, L. (2021). Children's and adults' views of punishment as a path to redemption. *Child Development*, *92*, e398-e-415. <https://doi.org/10.1111/cdev.13475>
- Dunlea, J. P., & Heiphetz, L. (In press). Language shapes children's attitudes: Consequences of internal, behavioral, and societal information in punitive and non-punitive contexts. *Journal of Experimental Psychology: General*.
- Dunlea, J. P., Wolle, R. G., & Heiphetz, L. (2020). Enduring positivity: Children of incarcerated parents report more positive than negative emotions when thinking about close others. *Journal of Cognition and Development*, *21*, 494-512.  
<https://doi.org/10.1080/15248372.2020.1797749>
- Dunlea, J. P., Wolle, R. G., & Heiphetz, L. (In press). The essence of an immigrant identity: Children's pro-social responses to others based on perceived ability and desire to change. In K. Tobia (Ed.), *Identity and the self*. Bloomsbury Publishing Inc.
- Elderbroom, B., Bennett, L., Gong, S., Rose, F., & Towns, Z. (2018). Every second: The impact of the incarceration crisis on America's families. Retrieved on December 8<sup>th</sup>, 2021, from <https://everysecond.fwd.us/downloads/EverySecond.FWD.us.pdf>
- Equal Justice Initiative (2020). *Over-incarceration of mothers takes serious toll on children*. Retrieved on January 7<sup>th</sup>, 2022 from <https://eji.org/news/over-incarceration-of-mothers-takes-serious-toll-on-children/>
- Forbes, F. A. (2016). *Invisible men: A contemporary slave narrative in the era of mass incarceration*. Skyhorse Publishing.

- Gelman, S. A. (2003). *The essential child: Origins of essentialism in everyday thought*. Oxford University Press.
- Gelman, S. A., & Wellman, H. M. (1991). Insides and essences: Early understandings of the non-obvious. *Cognition*, 38, 213-244. [https://doi.org/10.1016/0010-0277\(91\)90007-Q](https://doi.org/10.1016/0010-0277(91)90007-Q)
- Glaze, L. E., & Maruschak, L. M. (2010). Parents in prison and their minor children. Retrieved on November 18<sup>th</sup>, 2021, from [http://www.antoniocasella.eu/nume/BJS\\_parents\\_prison\\_minor\\_2008.pdf](http://www.antoniocasella.eu/nume/BJS_parents_prison_minor_2008.pdf)
- Goldman, J. D., & Goldman, R. J. (1983). Children's perceptions of parents and their roles: A cross-national study in Australia, England, North America, and Sweden. *Sex Roles*, 9, 791-812. <https://doi.org/10.1007/BF00290031>
- Gotsch, K. (2018). *Families and mass incarceration*. Retrieved on November 18<sup>th</sup>, 2021 from <https://www.sentencingproject.org/publications/6148/>
- Hardecker, S., Schmidt, M. F., Roden, M., & Tomasello, M. (2016). Young children's behavioral and emotional responses to different social norm violations. *Journal of Experimental Child Psychology*, 150, 364-379. <https://doi.org/10.1016/j.jecp.2016.06.012>
- Haskins, A. R. (2015). Paternal incarceration and child-reported behavioral functioning at age 9. *Social Science Research*, 52, 18-33. <https://doi.org/10.1016/j.ssresearch.2015.01.001>
- Haslam, N., & Loughnan, S. (2014). Dehumanization and infrahumanization. *Annual Review of Psychology*, 65, 399-423. <https://doi.org/10.1146/annurev-psych-010213-115045>
- Heiphetz, L. (2020). The development and consequences of moral essentialism. *Advances in Child Development and Behavior*, 59, 165-194. <https://doi.org/10.1016/bs.acdb.2020.05.006>

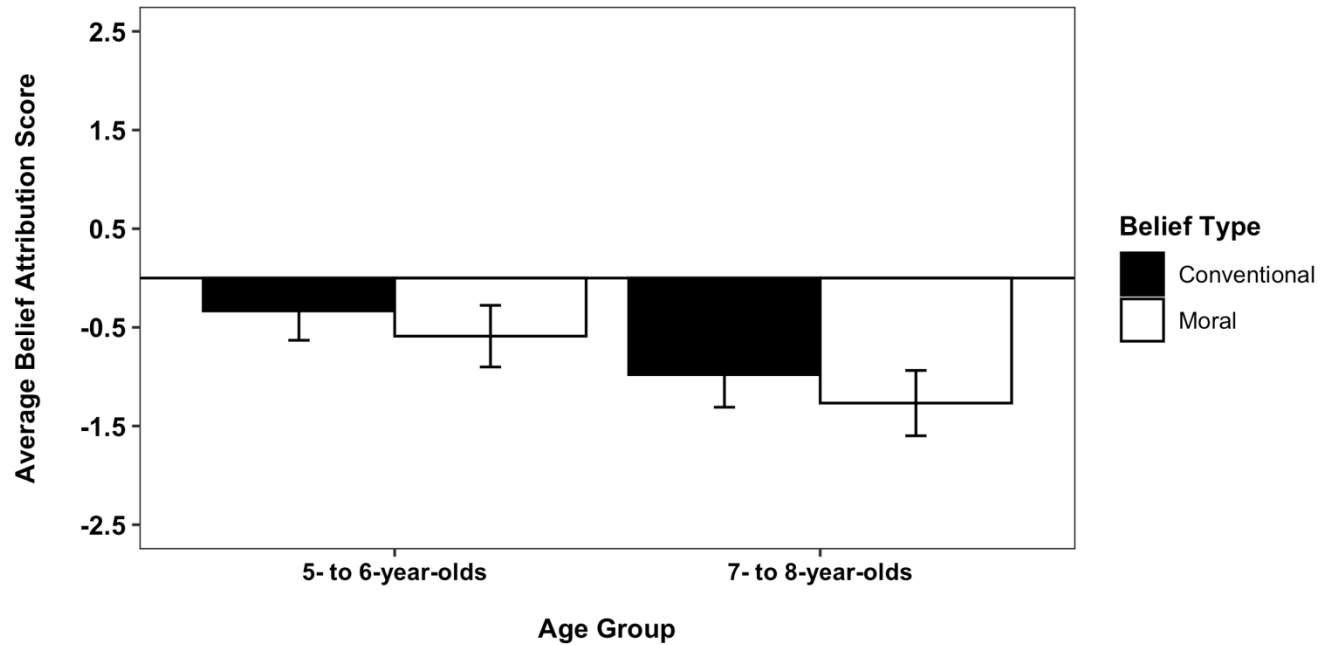
- Heiphetz, L., Spelke, E. S., Harris, P. L., & Banaji, M. R. (2014). What do different beliefs tell us? An examination of factual, opinion-based, and religious beliefs. *Cognitive Development, 30*, 15-29. <https://doi.org/10.1016/j.cogdev.2013.12.002>
- Heiphetz, L., & Young, L. L. (2017). Can only one person be right? The development of objectivism and social preferences regarding widely shared and controversial moral beliefs. *Cognition, 167*, 78-90. <https://doi.org/10.1016/j.cognition.2016.05.014>
- Heiphetz, L., & Young, L. L. (2019). Children's and adults' affectionate generosity toward members of different religious groups. *American Behavioral Scientist, 63*, 1910-1937. <https://doi.org/10.1177%2F0002764219850870>
- Hommel, B. (2003). Planning and representing intentional action. *The Scientific World Journal, 3*, 593–608. <https://doi.org/10.1100/tsw.2003.46>
- Hopwood, S. (2021). *How atrocious prisons conditions make us all less safe*. Retrieved on December 8<sup>th</sup>, 2021 from <https://www.brennancenter.org/our-work/analysis-opinion/how-atrocious-prisons-conditions-make-us-all-less-safe>
- Huppert, E., Shaw, A., & Decety, J. (2020). The effect of hunger on children's sharing behavior and fairness preferences. *Journal of Experimental Child psychology, 192*, 104786. <https://doi.org/10.1016/j.jecp.2019.104786>
- Ingram, G. P., & Bering, J. M. (2010). Children's tattling: The reporting of everyday norm violations in preschool settings. *Child Development, 81*, 945-957. <https://doi.org/10.1111/j.1467-8624.2010.01444.x>
- Johnson, S. C., & Solomon, G. E. (1997). Why dogs have puppies and cats have kittens: The role of birth in young children's understanding of biological origins. *Child Development, 68*, 404-419. <https://doi.org/10.1111/j.1467-8624.1997.tb01948.x>



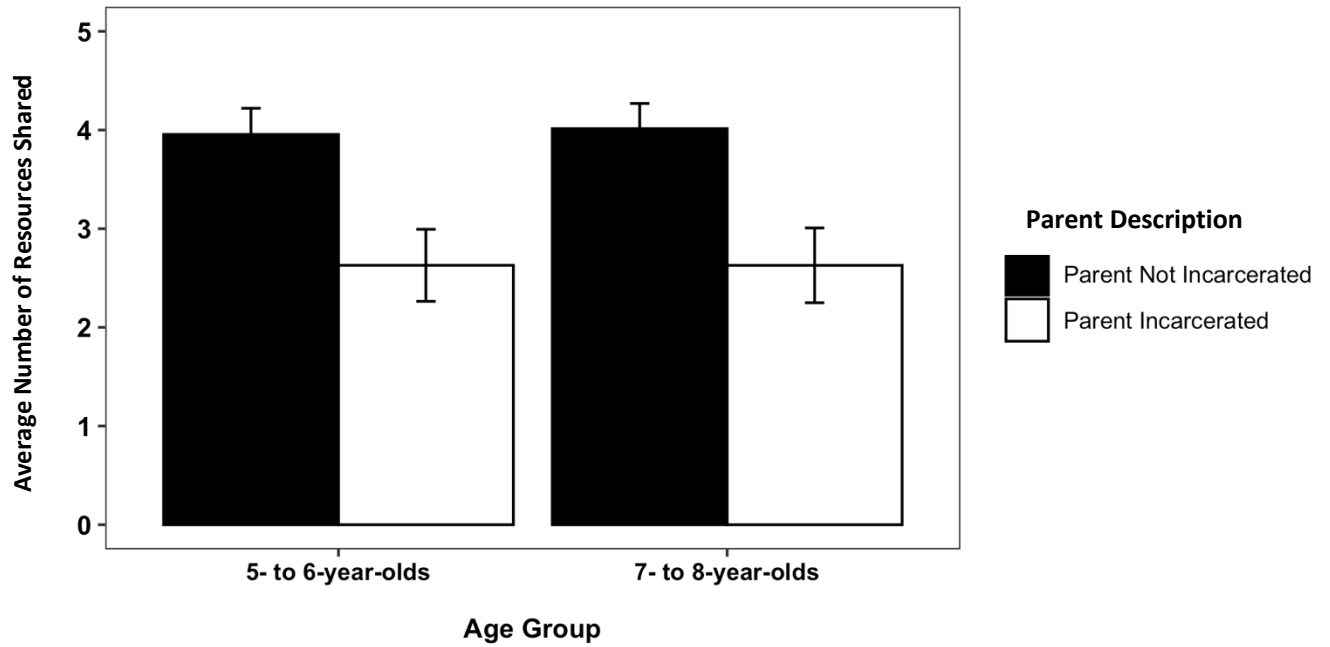
- Kaiper-Marquez, A., Stickel, T., & Prins, E. (2021). 'Daddy made a mistake and needed a time out': Incarcerated parents as moral educators. *Journal of Moral Education*, 1-17.  
<https://doi.org/10.1080/03057240.2021.1978408>
- Krupat, T. (2007). Invisibility and children's rights: The consequences of parental incarceration. *Women's Rights Law Reporter*, 29, 39-44.
- LaPierre, R. T. (1934). Actions vs. attitudes. *Social Forces*, 13, 230-238.
- Lieberman, Z., Gerdin, E., Kinzler, K. D., & Shaw, A. (2020). (Un) common knowledge: Children use social relationships to determine who knows what. *Developmental Science*, 23, e12962. <https://doi.org/10.1111/desc.12962>
- Lieberman, Z., Howard, L. H., Vasquez, N. M., & Woodward, A. L. (2018). Children's expectations about conventional and moral behaviors of ingroup and outgroup members. *Journal of Experimental Child Psychology*, 165, 7-18.  
<https://doi.org/10.1016/j.jecp.2017.03.003>
- Marshall, J., Wynn, K., & Bloom, P. (2020). Do children and adults take social relationship into account when evaluating people's actions? *Child Development*, 91, e1082-e1100.  
<https://doi.org/10.1111/cdev.13390>
- McLoughlin, N., & Over, H. (2017). Young children are more likely to spontaneously attribute mental states to members of their own group. *Psychological Science*, 28, 1503-1509.  
<https://doi.org/10.1177/0956797617710724>
- Medin, D. L., & Ortony, A. (1989). Psychological essentialism. In S. Vosniadou & A. Ortony (Eds.), *Similarity and analogical reasoning* (pp. 179-195). Cambridge University Press.

- Murray, J., Farrington, D. P., & Sekol, I. (2012). Children's antisocial behavior, mental health, drug use, and educational performance after parental incarceration: A systematic review and meta-analysis. *Psychological Bulletin*, *138*, 175-210. doi:10.1037/a0026407
- National Conference of State Legislatures (2021). *Felon voting rights*. Retrieved on November 18<sup>th</sup>, 2021 from <https://www.ncsl.org/research/elections-and-campaigns/felon-voting-rights.aspx>
- Phillips, S. D., & Gates, T. (2011). A conceptual framework for understanding the stigmatization of children of incarcerated parents. *Journal of Child and Family Studies*, *20*, 286-294. <https://doi.org/10.1007/s10826-010-9391-6>
- Rizzo, M. T., Elenbaas, L., Cooley, S., & Killen, M. (2016). Children's recognition of fairness and others' welfare in a resource allocation task: Age related changes. *Developmental Psychology*, *52*, 1307–1317. <https://doi.org/10.1037/dev0000134>
- Renno, M. P., & Shutts, K. (2015). Children's social category-based giving and its correlates: Expectations and preferences. *Developmental Psychology*, *51*, 533–543. <https://doi.org/10.1037/a0038819>
- Sawyer, W., & Wagner, P. (2020). *Mass incarceration: The whole pie 2020*. Retrieved on December 17<sup>th</sup>, 2020, from <https://www.prisonpolicy.org/reports/pie2020.html>
- Shaw, A., & Olson, K. (2013). All inequality is not equal: children correct inequalities using resource value. *Frontiers in Psychology*, *4*, 1-9. <https://doi.org/10.3389/fpsyg.2013.00393>
- Shutts, K., Brey, E. L., Dornbusch, L. A., Slywotzky, N., & Olson, K. R. (2016). Children use wealth cues to evaluate others. *PloS one*, *11*, e0149360. <https://doi.org/10.1371/journal.pone.0149360>

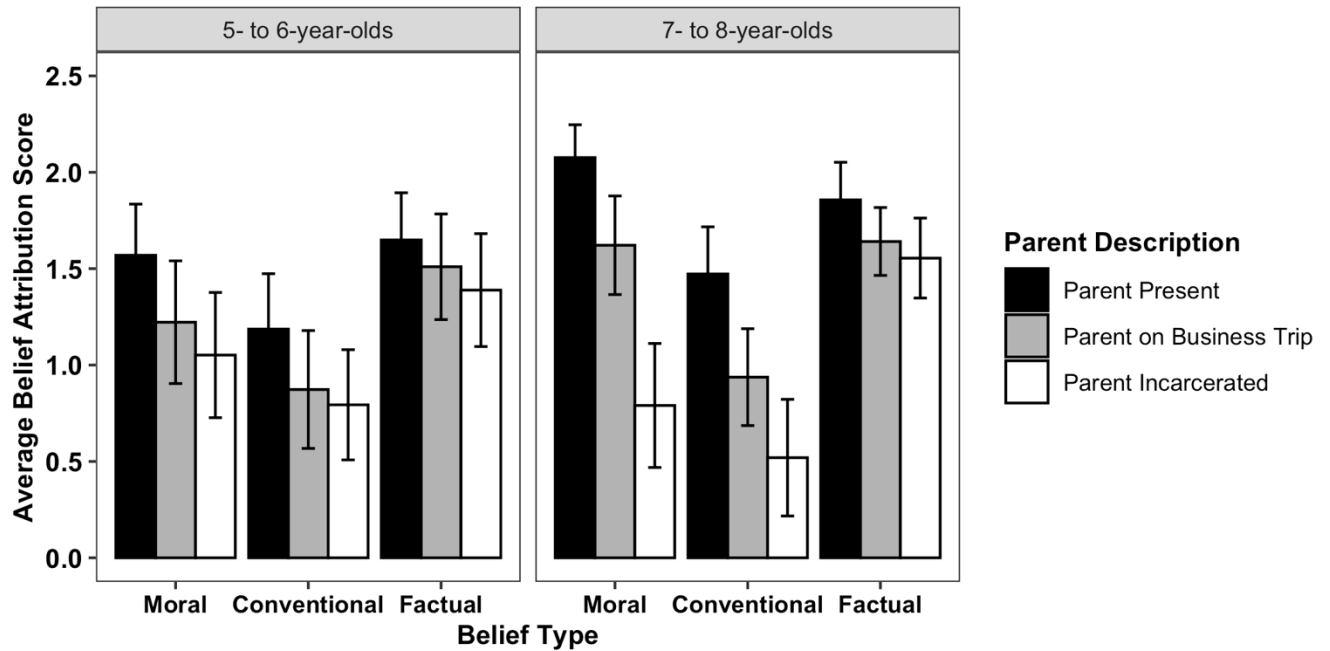
- Smetana, J. G. (1981). Preschool children's conceptions of moral and social rules. *Child Development, 52*, 1333-1336. <https://doi.org/10.2307/1129527>
- Springer, K. (1996). Young children's understanding of a biological basis for parent-offspring relations. *Child Development, 67*, 2841-2856. <https://doi.org/10.1111/j.1467-8624.1996.tb01891.x>
- Travis, J. (2005). *But they all come back: Facing the challenges of prisoner reentry*. The Urban Institute.
- Turney, K. (2015). Paternal incarceration and children's food insecurity: A consideration of variation and mechanisms. *Social Service Review, 89*, 335-367. <https://doi.org/10.1086/681704>
- Van Cleve, N. G. (2016). *Crook County: Racism and injustice in America's largest criminal court*. Stanford University Press.
- Williams, J. M., & Tolmie, A. (2000). Conceptual change in biology: Group interaction and the understanding of inheritance. *British Journal of Developmental Psychology, 18*, 625-649. <https://doi.org/10.1348/026151000165896>
- Yang, X. & Dunham, Y. (In press). Emerging complexity in children's conceptualization of the wealthy and the poor. *Developmental Psychology*.
- Yucel, M., Hepach, R., & Vaish, A. (2020). Young children and adults show differential arousal to moral and conventional transgressions. *Frontiers in Psychology, 11*, 548. <https://doi.org/10.3389/fpsyg.2020.00548>



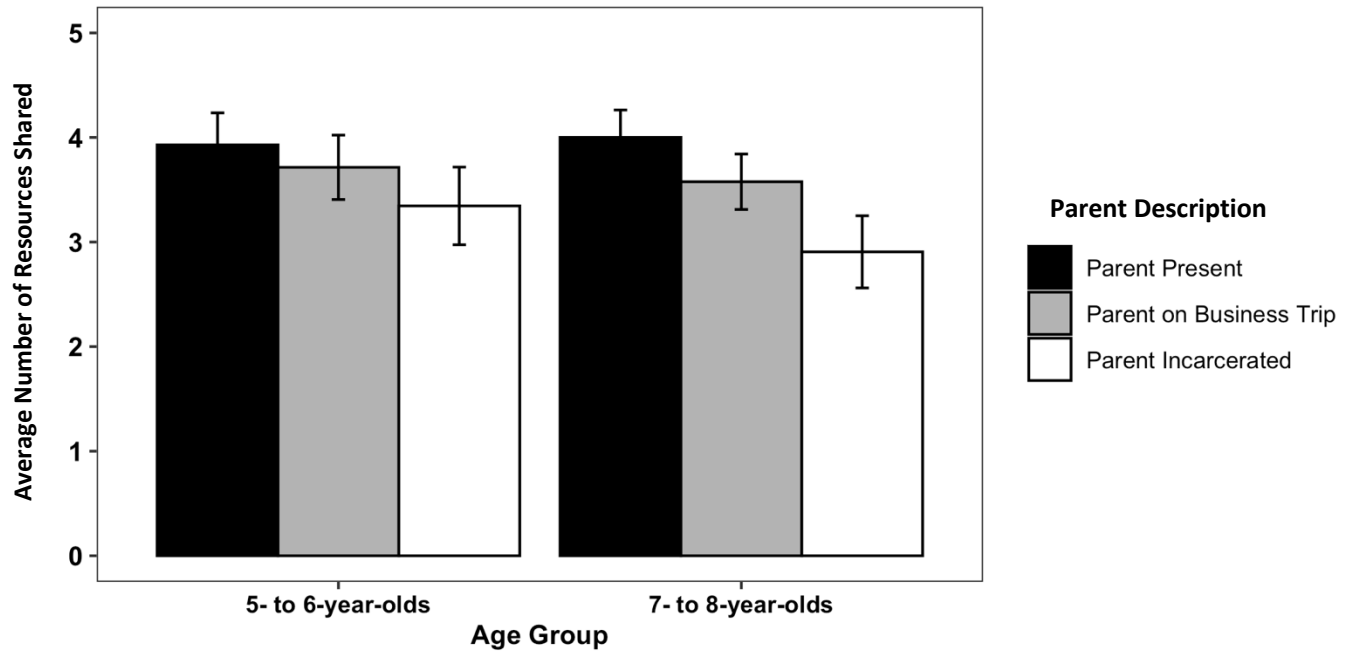
*Fig. 1.* Average certainty that peers with, versus without, incarcerated parents hold moral and conventional beliefs, Study 1. More negative scores reflect greater certainty that individuals whose parent is not incarcerated possess a specific belief; more positive scores reflect greater certainty that individuals whose parent is incarcerated possess a specific belief. Zero indicates uncertainty regarding which individual possesses a specific belief. Error bars represent 95% confidence intervals.



*Fig. 2.* Average number of resources shared with peers with, versus without, incarcerated parents, Study 1. Error bars represent 95% confidence intervals.



*Fig. 3.* Average certainty that different characters hold moral, conventional, and factual beliefs, Study 2. More positive numbers reflect greater certainty that characters possess a specific type of belief. Error bars represent 95% confidence intervals.



*Fig. 4.* Average number of resources shared with different characters, Study 2. Error bars represent 95% confidence intervals.