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## Young Children's Self-Concepts Include Representations of Abstract Traits and the Global Self

Andrei Cimpian   
New York University

Matthew D. Hammond  
Victoria University of Wellington

Giulia Mazza and Grace Corry  
University of Illinois

There is debate about the abstractness of young children's self-concepts—specifically, whether they include representations of (a) general traits and abilities and (b) the global self. Four studies ( $N = 176$  children aged 4–7) suggested these representations are indeed part of early self-concepts. Studies 1 and 2 reexamined prior evidence that young children cannot represent traits and abilities. The results suggested that children's seemingly immature judgments in previous studies were due to peculiarities of the task context not the inadequacy of children's self-concepts. Similarly, Studies 3 and 4 revealed that, contrary to claims of immaturity in reasoning about the global self, young children update their global self-evaluations in flexible, context-sensitive ways. This evidence suggests continuity in the structure of self-concepts across childhood.

Long-standing debates concern the nature of young children's self-concepts, particularly with respect to whether they are concrete versus abstract. Initial evidence on this topic seemed to suggest that although young children can represent concrete behaviors as part of their self-concepts, they are unable to (a) conceive of themselves in terms of abstract traits and abilities, or (b) evaluate their global self-worth (e.g., Burhans & Dweck, 1995; Butler, 2005; Dweck, 1998; Eder & Mangelsdorf, 1997; Harter, 2012; Keller, Ford, & Meacham, 1978; Marsh, 1990; Marsh, Ellis, & Craven, 2002). On this perspective, one crucial change from early to

middle childhood is that self-concepts become remarkably more abstract. More recent evidence, however, has suggested that early self-concepts may be richer and more abstract than previously thought (e.g., Burhans & Dweck, 1995; Cimpian, Arce, Markman, & Dweck, 2007; Marsh et al., 2002). We present four studies that support the latter perspective. Our evidence suggests that, by the age of 4, children can not only conceive of the self as possessing general traits and abilities but also judge their worth as individuals in nuanced, context-sensitive ways. This evidence contributes to the debates regarding the abstractness of young children's self-concepts, calling into question the view that children's self-concepts undergo dramatic changes from early to middle childhood.

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Correspondence concerning this article should be addressed to Andrei Cimpian, Department of Psychology, New York University, 6 Washington Place, New York, NY 10003. Electronic mail may be sent to andrei.cimpian@nyu.edu.

### Terminology

We use the term *self-concept* to refer to the mental representations that people use to reason about

themselves (e.g., Davis-Kean & Sandler, 2001; Leary & Tangney, 2012). We intend this term to refer to descriptive content (*self-beliefs*) and evaluative content (*self-evaluations*) that is accessible to conscious reasoning and can thus be reported, at least under certain circumstances. The aspects of the self that are represented under the self-concept differ in abstraction, ranging from *specific behaviors* to *general traits* (which abstract over many specific behaviors) to *the global self* (which abstracts over many general traits; see Cvencek & Greenwald, in press; Marsh, 1990; Shavelson, Hubner, & Stanton, 1976). Behaviors (e.g., playing basketball) are low in abstraction (e.g., Rosen, 2017) because they tend to share many observable features (e.g., using a court, throwing a ball through a hoop). By comparison, instances of a trait (e.g., being athletic) have fewer such superficial similarities in common. At the highest level of abstraction, the global self does not have a concrete, observable manifestation in the world.

The content dimension (descriptive vs. evaluative) and the abstraction dimension are independent of each other, with descriptive and evaluative content being represented at each level of abstraction in the self-concept (behaviors, traits, and the global self). The evaluative content represented about the global self is known as *self-esteem* or as *global self-worth* (e.g., Burhans & Dweck, 1995; Harter, 2012) and is one of the elements of the self-concept that some researchers claim is missing in young children (e.g., Harter, 2012). From this perspective, children cannot evaluate the whole self as being good or bad, worthy or unworthy, and so forth.

In the following, we detail the prior evidence on whether young children's self-concepts include representations of (a) traits and abilities and (b) the global self.

#### *Do Young Children's Self-Concepts Include Representations of Traits?*

As recently as 10 or 15 years ago, it was widely thought that young children are unable to conceive of specific behaviors—whether other people's or their own—as evidence for abstract traits or dispositions. In a classic study by Rholes and Ruble (1984; also see Rholes, Newman, & Ruble, 1990), 5- and 6-year-olds who saw a person perform one kind action (e.g., sharing her lunch) did not expect her to perform kind actions in a different context (e.g., helping someone rake leaves in the yard). This failure to generalize was interpreted as evidence that young children cannot use specific behaviors to infer abstract traits or dispositions (e.g., being kind

or generous). Young children's purported inability to infer dispositions from concrete instances of behavior was claimed to apply to their reasoning about their own behavior as well. On this view, early self-concepts comprise disparate representations of concrete observable actions (e.g., "I know my ABCs"; Harter, 2001, 2012) rather than being organized into more-abstract domains (e.g., academic, social, athletic), as they are in older children and adults. In support of this claim, Harter and Pike (1984) found that young children (from preschool through second grade) did not differentiate between ability in cognitive domains (e.g., being good at puzzles) versus physical domains (e.g., being good at running). In a factor analysis, children's ratings of their skills across these two domains loaded onto a single factor (Harter & Pike, 1984), suggesting that self-concepts at this age lack the coherence and organization afforded by the ability to group specific behaviors into more-abstract traits or domains.

Other evidence, however, has challenged claims about the concreteness of young children's self-concepts. For example, even 3- and 4-year-olds were able to infer traits from others' behaviors in research that used simplified paradigms that did not require children to simultaneously infer a trait *and* make predictions from it (e.g., Boseovski, Chiu, & Marcovitch, 2013; Boseovski & Lee, 2006; Giles & Heyman, 2003; Hermes, Behne, & Rakoczy, 2015; Liu, Gelman, & Wellman, 2007). There is also some evidence of trait representations in young children's self-concepts: Factor analyses using more sophisticated statistical techniques (e.g., structural equation modeling) and data collected with instruments that reduced the information-processing load imposed on children revealed support for a multidimensional structure of the early self-concept. That is, these analyses suggested that the self-concepts of children as young as 4 and 5 distinguish between domains of the self (e.g., verbal, mathematical, physical; Marsh, Craven, & Debus, 1991, 1998; Marsh et al., 2002; see also Eder, 1990; Marsh, Debus, & Bornholt, 2004). The ability to incorporate traits into the self-concept is also suggested by the fact that 4-year-olds respond to trait-based performance feedback (e.g., "you're smart") with the same maladaptive behaviors (e.g., disengagement following failure) seen in older children and adults (e.g., Cimpian, Mu, & Erickson, 2012; Cimpian et al., 2007; Zentall & Morris, 2012). In summary, evidence is accumulating that children's self-concepts do include representations of traits, and the debate on this topic is ongoing (e.g., Cimpian, 2017; Hermes et al., 2015).

Here, we contribute to this debate by reexamining one prominent piece of evidence for the negative side: Many young children who make mistakes on specific tasks (e.g., a drawing) do not seem to attribute this failure to the lack of an ability or talent but rather make broader negative self-evaluations (e.g., Burhans & Dweck, 1995; Dweck, 1998; Hebert & Dweck, 1985; Heyman, Dweck, & Cain, 1992). For example, 4- and 5-year-olds in one study were asked to solve puzzles that were arranged so that only one could be solved (Hebert & Dweck, 1985; described in Burhans & Dweck, 1995). When children role played their parents' and teachers' reactions to the unsolved puzzles, one third of children described punishment (e.g., "Daddy's gonna be very mad and spank her"). Similarly, many of the 5- and 6-year-olds in Heyman et al.'s (1992) study expected to be punished after being criticized for a small mistake (e.g., forgetting to draw the feet in a picture of a child). These data were thought to support the claim that young children's self-concepts lack traits: In cases where older children and adults typically localize failures to specific traits (e.g., "I have no artistic talent"), young children seemed to overextend their negative self-evaluations, leading to expectations of punishment.

In Studies 1 and 2, we test an alternative interpretation for these findings. Specifically, we propose that the overextension of children's negative self-evaluations is not due to an inability to represent traits but rather to the specific means used to induce failure in these studies. Children encountered failure on tasks that were performed at the explicit request of a teacher or experimenter, who then criticized and expressed disappointment in the child (Hebert & Dweck, 1985; Heyman et al., 1992). Thus, perhaps children thought they were worthy of punishment because of the social element of their failure. Failing to comply with an adult's request or otherwise failing to meet a socially important standard (e.g., knowing the numbers from 1 to 10) might signal that children have breached important interpersonal or social expectations by disappointing an adult or failing a task they ought to be able to complete. Young children have a sophisticated understanding of the expectations and obligations that structure interactions between individuals (e.g., Baillargeon et al., 2015). If this alternative explanation is correct, children's evaluations in these contexts would have little bearing on whether their self-concepts include representations of abstract traits and abilities. To assess whether the social element was specifically responsible for children's overly broad evaluations, in Studies 1 and 2 we

systematically manipulated whether the failure occurred in a social context.

### *Can Young Children Represent the Global Self?*

Another major debate, related to the one discussed above, concerns whether young children are able to represent or evaluate their global selves. According to some researchers, this ability does not develop until middle childhood (e.g., Eder & Mangelsdorf, 1997; Harter, 2001, 2012; Keller et al., 1978; Marsh et al., 2002). Others, however, have claimed that even 5-year-olds can reason about their self-esteem (Cvencek, Fryberg, Covarrubias, & Meltzoff, 2017; Cvencek, Greenwald, & Meltzoff, 2016; Harris, Donnellan, & Trzesniewski, 2017; Marsh et al., 1991).

Proponents of the claim that young children cannot form representations of the global self often appeal to broader Piagetian arguments about young children's inability to think abstractly or flexibly enough to accommodate reasoning about the self as a whole (e.g., Piaget & Inhelder, 1969). For example, Harter (2001) writes that "The young child simply is incapable, cognitively, of developing the verbal concept of his/her value as a person" (p. 13809). On this view, self-esteem emerges as a result of a "higher order integration" of various abstract domains (e.g., academic, social). However, due to the purported limitations of young children's thinking, they cannot even differentiate such domains out of the concrete attributes they typically represent about themselves—let alone integrate these domains into an abstract sense of who they are as individuals (e.g., Harter, 2001, 2012; Keller et al., 1978). Although young children might *behave* in ways that signal to others that they have high or low self-esteem (e.g., Stipek, Gralinski, & Kopp, 1990), on this view, the ability to actually represent and report on one's self-esteem does not emerge "until about the age of 8, normatively" (Harter, 2012, p. 17).

Other researchers, however, are more optimistic about children's cognitive abilities (e.g., Butler, 2005; Cimpian, 2017). Since Piaget, the literature on cognitive development has provided many illustrations of young children's sophisticated inferential and conceptual abilities (e.g., Baillargeon et al., 2015; Gelman, 2003; Schulz, 2012). There is no longer a strong reason to expect a qualitative shift between early and middle childhood in the representational abilities relevant to reasoning about oneself as an individual. Indeed, recent research suggests that representations of the global self may be available even in early childhood. For example,

Marsh et al. (1991) and Harris et al. (2017) created instruments that appeared to reliably and validly measure the self-esteem of children as young as 5 years of age. Similarly, Cvencek et al. (2016) developed and validated an implicit measure of self-esteem for 5-year-olds (in essence, a version of the well-known implicit association test; Greenwald, McGhee, & Schwartz, 1998). Furthermore, the previously described study in which children reported generalized negative evaluations in response to specific achievement failures (Hebert & Dweck, 1985; Heyman et al., 1992; see discussion in Burhans & Dweck, 1995) is also consistent with the presence of global self-evaluations in early childhood. Not only did some children expect to be punished when they made mistakes in these studies, but they also reported feeling like “not good children.” These responses suggest that the mistakes led some children to downgrade their evaluation of their global worth.

However, questions remain about whether young children in these studies are truly reporting evaluations of their abstract worth as individuals rather than relatively undeveloped precursors of these evaluations. Endorsing the latter view, Burhans and Dweck (1995) claimed that young children made global self-evaluations in response to innocuous mistakes simply because they lacked the “invariant trait conceptions” (p. 1719) that underlie adults’ notions of ability. In turn, this lack of trait-level differentiation in the self-concept was presumed to have cascading effects for young children’s estimation of their global self-worth, leading to immature inferences at this more abstract level of the self-concept as well.

Here, we contribute to the debate regarding young children’s global self-worth judgments by critically examining the evidence that led Burhans and Dweck (1995) to conclude these judgments are immature. Specifically, we test an alternative possibility for children’s behavior in the studies reviewed by Burhans and Dweck. Extending the hypothesis introduced earlier, we propose that children’s global negative self-evaluations in response to their errors in these studies were not immature but rather responsive to context. According to this alternative, young children are capable of flexibly formulating self-evaluations at multiple levels of abstraction (specific abilities vs. global worth); which level they settle on for any particular judgment should depend in predictable ways on the context surrounding their performance, much as it does for older children and adults (e.g., MacDonald, Saltzman, & Leary, 2003). For instance,

when children’s poor performance occurs in the context of an obviously easy task (Study 3), they should downgrade their evaluation of their ability for that task. Moreover, if the task does not hold obvious consequences for how children are viewed by others, the effect of failure on children’s global self-worth should be comparatively smaller. In contrast, when children’s poor performance leads to loss of social approval (e.g., when they disappoint someone; Study 4)—as was the case in the studies reviewed by Burhans and Dweck (1995)—children should downgrade their evaluation of their global worth as individuals. This is what adults are likely to do as well, because social approval is a key determinant of self-esteem throughout life (e.g., Greenwald, Bellezza, & Banaji, 1988; Leary & Baumeister, 2000; MacDonald et al., 2003; see also Strohminger & Nichols, 2014). This pattern of context-sensitive self-evaluations at multiple levels of abstraction would indicate that—contrary to some researchers’ claims—young children’s ability to form global self-concepts is not deficient.

#### *Overview of Studies*

The present research advances the debate on whether young children can conceive of themselves in abstract terms. Studies 1 and 2 provide an alternative explanation for a set of results that have been interpreted as showing that young children cannot represent abstract traits or abilities as part of their self-concepts. Because proponents of this claim generally agree that representations of traits are absent until around the age of 8 (e.g., Eder & Mangelsdorf, 1997; Harter & Pike, 1984; Heyman et al., 1992; Rhoads & Ruble, 1984), Studies 1 and 2 tested children before this purported developmental threshold—namely, 6- and 7-year-olds. This age range is also similar to those in the prior studies whose conclusions we are challenging (Heyman et al., 1992). In Studies 3 and 4, we extend our alternative explanation to reexamine evidence for the claim that young children have an immature concept of their overall worth as individuals. These final studies focused on younger children—namely, 4- and 5-year-olds. The earliest age at which researchers have so far been able to document self-esteem judgments is 5 (e.g., Cvencek et al., 2016; Harris et al., 2017). However, the cognitive abilities that underlie these judgments may be present in younger children as well (e.g., Cimpian, 2017). Thus, we expected that even our young sample would show flexible, context-sensitive judgments of global self-worth, contrary to prior claims of immaturity.

## Study 1

An important piece of evidence for the claim that early self-concepts do not incorporate representations of traits and abilities is that failure on specific tasks leads many young children to form negative evaluations of their global (vs. ability-specific) worth (e.g., Hebert & Dweck, 1985; Heyman et al., 1992). In Study 1, we explored the possibility that children's global negative self-evaluations in these studies were due to the loss of social approval that accompanied failure rather than to an inability to represent trait-like abilities. Many of the tasks in these prior studies were assigned by adults, who expressed disappointment at children's failure. Social disapproval concerns were also likely present in some tasks that were important by social standards (e.g., knowing the numbers from 1 to 10 vs. recreational tasks such as making a puzzle). Global negative self-evaluations in these contexts would speak to the sophistication (not immaturity) of young children's self-concepts: Being accepted by important others and achieving socially important benchmarks are central components of adult self-esteem (e.g., Leary & Baumeister, 2000) and adult self-concepts more generally (e.g., Strohinger & Nichols, 2014). Importantly, children's downgrading of their self-worth in response to mistakes in these social contexts would have little bearing on whether their self-concepts include representations of abilities and traits.

We tested this explanation by presenting 6- and 7-year-olds with four scenarios that involved failure, manipulating whether the failed task was (a) requested by an adult versus self-initiated and (b) socially important versus largely recreational. If children downgrade their global self-worth specifically in contexts in which failure carries the possibility of social disapproval, then children should report lower self-worth after failure in the *requested* (vs. self-initiated) and *important* (vs. recreational) scenarios. We also obtained children's justifications for their ratings to document whether context-specific concerns about social approval are part of the mechanism underlying children's global negative self-evaluations. We predicted that (a) *requested* scenarios would elicit more explicit mentions of an adult's disapproval and that (b) *important* scenarios would elicit more mentions of violating a social standard. Moreover, the effect of the *request* and *importance* manipulations on children's global self-worth should be mediated, respectively, by their feelings of having received disapproval and violated a social standard.

## Method

The data and analytic syntax for all studies in this article are available on Open Science Framework: [https://osf.io/cnkup/?view\\_only=6de06ac22e824ae798b742e5122cdd35](https://osf.io/cnkup/?view_only=6de06ac22e824ae798b742e5122cdd35). The data reported in this article were collected between October 2009 and May 2011.

### Participants

Sixty-four 6- and 7-year-old children (32 girls and 32 boys;  $M_{\text{age}} = 7;0$ , range = 5;11–7;11) were recruited from elementary schools or from a database of families interested in participating in developmental studies. All children resided in a small city in the Midwestern United States. In all studies, demographic information was not formally collected, but the children came from a range of socioeconomic backgrounds, and most were European American.

### Scenarios

The four test scenarios were modeled on the scenarios used in Hebert and Dweck (1985) and Heyman et al. (1992). Each described a hypothetical situation in which the participating child was said to fail to complete a task (e.g., solving a puzzle) despite trying really hard (see Table S1 for full description). Across studies, positive scenarios were interspersed among the failure scenarios (e.g., "One day, you're at the park and there are lots of beautiful, different-colored flowers. What's your favorite color?"). The order of the scenarios (in their various forms; see below) was counterbalanced.

### Manipulations

*Request manipulation.* In two of the failure scenarios, children were said to fail a task that had been assigned to them by a parent or a teacher (*adult-request* scenarios; see Table S1). In the other two failure scenarios, children failed a task that they started at their own initiative (*self-initiated* scenarios). Each failure scenario was provided in adult-request format to half the children and in self-initiated format to the other half.

*Importance manipulation.* Two of the four tasks were classified as *important* (writing one's name and writing the numbers from 1 to 10), and two were classified as *recreational* (solving a puzzle and drawing a picture; see Table S1). We recruited a sample of 10 children aged 6 and 7 (5 boys and 5

girls) to validate the classification of the tasks. Children judged which task was more important in a series of counterbalanced pairwise comparisons (e.g., “What do you think is more important to know? How to solve a puzzle or how to write your name?”). Children chose the *important* tasks (i.e., writing one’s name and writing the numbers from 1 to 10) as more important on 80% of trials,  $p = .008$  versus chance (50%) by a sign test.

### Measures

**Global self-worth.** After each failure scenario, we assessed children’s global self-worth with a single item that asked whether they felt like “good” or “not good” children (e.g., “Does not finishing the puzzle make you feel like a good boy/girl or not a good boy/girl?”; adapted from Heyman et al., 1992). Asking about “goodness” provided a simple, developmentally appropriate means of assessing the overall value that young children placed on themselves as individuals. Prior work validates this as a measure of children’s global self-evaluations, beyond the social acceptance basis of self-esteem (e.g., Leary & Baumeister, 2000). For example, children’s responses to this item track their reported self-evaluations across a range of domains (e.g., how smart they are, how nice they are) as well as their behavioral reactions to failure (e.g., resilience vs. helplessness, which is an aspect of behaviorally presented self-esteem; Harter, 2012; Heyman et al., 1992). We also demonstrate divergent validity for this measure with a measure of affect (see below).

Next, children indicated *how* “good” or “not good” they felt on a corresponding scale of schematic faces that were either smiling (6 = *really good*, 5 = *good*, 4 = *sort of good*) or frowning (3 = *sort of not good*, 2 = *not good*, 1 = *really not good*; see Figure S1).

Finally, children provided a justification for their rating (e.g., “Why does not finishing the puzzle make you feel like a good/not a good boy/girl?”). These open-ended answers were video recorded and coded independently by two researchers who were blind to the content of the scenario and children’s ratings. Justifications were coded for the presence versus absence of mentions of (a) an adult being disappointed, angry, upset, or wanting to punish the child (*adult-disapproval* responses), or (b) the task being one that children their age are generally expected to be able to complete (*standard-violation* responses; see Table S2 for examples). Coder agreement was 96.1% ( $\kappa = .85$ ) for adult-disapproval justifications and 95.3% ( $\kappa = .71$ ) for

standard-violation justifications. Disagreements were resolved by discussion with a third coder.

**Additional measures.** Two secondary measures were included to assess the discriminant validity of the self-worth measure and to explore a potential moderator of the effect of social context, respectively.

**Affect.** A measure of affect (happy vs. sad) was administered on each trial. Responses on this measure diverged from those on the global self-worth measure, demonstrating that the latter did not simply tap children’s affective reaction to failure (see Figure S2 for additional details). We will not discuss this measure further.

**Contingent self-worth.** We investigated whether the effects of the *importance* and *request* manipulations were strongest for the subset of children who have *contingent self-worth*, which is a tendency to evaluate one’s worth based on external cues (Burmans & Dweck, 1995; also see Brummelman, Thomaes, Orobio de Castro, Overbeek, & Bushman, 2014; Crocker & Wolfe, 2001). We did not have strong a priori predictions: Although individual differences in contingent self-worth may indeed moderate the effects of social context, it is also possible that self-esteem is normatively connected to social approval for most individuals (e.g., Leary & Baumeister, 2000; MacDonald et al., 2003), in which case the moderating effects should be weak. To assess individual differences in contingent self-worth, we adapted a measure of this construct from Heyman et al. (1992) and administered it after the scenarios. Children pretended to make a house of blocks that was then criticized by a pretend teacher (see Table S3). Following Heyman et al. (1992), we classified children as having contingent self-worth if, when asked, they said they did not like the house they made ( $n = 31$ ). During debriefing, the block story was acted out again, but children were successful and drew praise from the pretend teacher.

### Results and Discussion

Analyses were conducted in three stages. First, we tested the effects of manipulating *request* and *importance* on children’s self-worth. Second, we tested the simultaneous indirect effects of the *request* and *importance* manipulations on children’s self-worth via their beliefs of having received disapproval from an adult or violated a social standard (as indicated by their open-ended justifications). Finally, we examined the moderating effects of individual differences in children’s contingent self-worth.

*Did the Request and Importance Manipulations Influence Children's Self-Worth?*

Children's reported self-worth across the four failure scenarios (as measured with the "goodness" item on a 1–6 scale) was regressed on the *request* variable ( $-.5 = \text{self-initiated task}$ ,  $.5 = \text{adult-requested task}$ ), the *importance* variable ( $-.5 = \text{recreational task}$ ,  $.5 = \text{important task}$ ), and their interaction. This multilevel regression was performed in MPlus 7.2 (Muthén & Muthén, 1998–2012; see Data S1 for additional information about the analytic strategy).

Children's self-worth was marginally lower when they failed tasks performed at an adult's request ( $M = 3.60$ ) than when they failed tasks that were self-initiated ( $M = 3.84$ ),  $B = -0.24$ ,  $t = -1.87$ ,  $p = .062$ . Children also reported lower self-worth when they failed important tasks ( $M = 3.50$ ) than when they failed recreational tasks ( $M = 3.95$ ),  $B = -0.45$ ,  $t = -3.23$ ,  $p = .001$ . These effects were qualified by a significant interaction between the *request* and *importance* manipulations,  $B = 0.79$ ,  $t = 1.96$ ,  $p = .050$ . As expected, children's self-worth ratings were highest after they failed on a self-initiated recreational task ( $M = 4.36$ ); ratings in the other three cells in our  $2 \times 2$  design were similarly low:  $M_s = 3.33, 3.53$ , and  $3.67$  after failure on a self-initiated important task, an adult-requested recreational task, and an adult-requested important task, respectively.

These results suggest that children's global self-evaluations in response to poor performance are due in part to the social context of their performance and the perceived loss of social approval (see also analyses below). Thus, the global character of the evaluations documented in social contexts in prior work (Burhans & Dweck, 1995) may not actually support the claim that children cannot represent abilities as part of their self-concepts.

*Why Did Children Downgrade Their Self-Worth?*

Next, we tested whether the *request* and *importance* manipulations influenced children's self-worth ratings via the predicted pathways: Failure on adult-requested (vs. self-initiated) tasks should influence self-worth via impressions of adult disapproval, whereas failure on important (vs. recreational) tasks should operate via impressions of having violated a social standard. The *request* and *importance* variables, as well as their interaction, were used to predict (a) mentions of adult disapproval and (b) mentions of violating a social standard, and in turn, all five of these variables were used to predict children's self-worth ratings.

First, the *request* and *importance* manipulations significantly predicted the content of children's open-ended justifications. Consistent with our hypothesis, children who failed a requested (vs. self-initiated) task were more likely to say that the relevant adult would disapprove ( $M_s = 23.4\%$  vs.  $8.6\%$  of trials, respectively;  $B = 1.80$ ,  $t = 2.86$ ,  $p = .004$ ) but were not more or less likely to say that they had violated a social standard ( $B = -0.25$ ,  $t = -0.36$ ,  $p = .72$ ). In contrast, children who failed a socially important (vs. recreational) task were more likely to say that they had violated a social standard ( $M_s = 17.2\%$  vs.  $2.3\%$  of trials, respectively;  $B = 2.67$ ,  $t = 4.21$ ,  $p < .001$ ) and marginally less likely to mention explicit disapproval from a specific adult ( $B = -0.90$ ,  $t = -1.94$ ,  $p = .053$ ). Second, children's justifications significantly predicted their self-worth ratings. When children said that an adult disapproved of them ( $B = -1.00$ ,  $t = -4.49$ ,  $p < .001$ ) or that their failure violated a social standard ( $B = -1.44$ ,  $t = -8.06$ ,  $p < .001$ ), they also downgraded their global worth as individuals.

Finally, we estimated the indirect effects of the *request* and *importance* manipulations on children's global self-worth via their mentions of social

Table 1

*Indirect Effects of the Request and Importance Manipulations on Children's Reported Self-Worth via Their Impressions of Having Violated a Social Standard and Received Disapproval From an Adult (Study 1)*

Indirect pathway tested	Indirect effect estimate	95% CI
Request → Standard Violation → Self-Worth	0.357	[-1.613, 2.010]
<b>Request → Adult Disapproval → Self-Worth</b>	<b>-1.793*</b>	<b>[-3.551, -0.318]</b>
<b>Importance → Standard Violation → Self-Worth</b>	<b>-3.850*</b>	<b>[-5.823, -2.194]</b>
Importance → Adult Disapproval → Self-Worth	0.896	[-0.210, 1.824]

Note. Predicted effects displayed in bold. All pathways were modeled simultaneously.

\* $p < .05$ .

disapproval and social standards. Results are displayed in Table 1. Only the two predicted pathways were significant. Failing an adult-requested (vs. self-initiated) task predicted lower self-worth specifically via mentions of adult disapproval. In contrast, failing an important (vs. recreational) task predicted self-worth specifically via mentions of falling short of a social standard.

These results further suggest that children's global self-evaluations in this and previous research were a rational response to the social context of their failure rather than signaling an inability to form self-concepts of abilities.

#### *Were the Effects Moderated by Contingent Self-Worth?*

We tested whether individual differences in contingent self-worth (e.g., Burhans & Dweck, 1995) moderated the effects of the *request* and *importance* manipulations. Children classified as having contingent self-worth reported lower self-worth overall ( $B = -0.78$ ,  $t = -2.49$ ,  $p = .013$ ), but the effects of the experimental manipulations were not moderated by contingent self-worth ( $ps > .11$ ) and remained significant in this analysis ( $ps < .01$ ).

## Study 2

In the previous study, the important tasks (e.g., writing one's name) might have also been perceived as easier than the recreational tasks (e.g., solving a puzzle). To address this potential confound, in Study 2 we equated the difficulty of the important and recreational tasks. We predicted that children would still downgrade their self-worth after failing an important (vs. recreational) task, even with the revised stimuli.

### *Method*

#### *Participants*

Forty-eight 6- and 7-year-old children (24 girls and 24 boys;  $M_{\text{age}} = 6;11$ , range = 6;0–7;11) were recruited using the same procedures as Study 1. Three additional children were tested but excluded because they refused to complete the study.

#### *Materials and Procedure*

We assessed children's self-worth using a procedure similar to Study 1, except that the important and recreational tasks were pretested to be similar

in difficulty (see below). The important tasks in this study were (a) writing one's first and last names and (b) writing the numbers from 1 to 20, and the recreational tasks were (a) making a Play-Doh ball and (b) drawing a sun (see Table S4). All tasks were described as being self-initiated in this study.

We recruited two additional samples to validate our scenarios (each  $N = 10$  children aged 6 and 7; half boys and half girls). The first sample rated the difficulty of the tasks (1 = *really easy*, 6 = *really hard*). The second sample validated our selection of important versus recreational tasks using the procedure described in Study 1. Children rated the important and recreational tasks as similar in difficulty ( $Ms = 1.20$  and  $1.85$ , respectively;  $p = .289$  by a sign test) and selected the important task as more important in 100% of trials ( $p = .002$  vs. chance by a sign test).

### *Results and Discussion*

As in Study 1, children's self-worth ratings across the four trials were regressed on the importance of the task ( $-.5 = \text{recreational}$ ,  $.5 = \text{important}$ ) using multilevel modeling in MPlus. As predicted, children's self-worth was lower when they failed tasks that were important ( $M = 3.63$ ) versus recreational ( $M = 4.02$ ),  $B = -0.40$ ,  $t = -2.18$ ,  $p = .030$ . These results reinforce our argument that children's global self-evaluations in previous studies were a sensible response to the social aspect of their poor performance and thus do not provide support for the claim that young children cannot represent abilities as part of their self-concepts.

## Study 3

Studies 3 and 4 address the claim that young children's reasoning about their global self-worth is immature. To some extent, Studies 1 and 2 already contradict this claim, insofar as children's self-worth was responsive to perceptions of social approval versus disapproval in ways that parallel adults' evaluations of self-worth (e.g., MacDonald et al., 2003). In Studies 3 and 4, we provide stronger evidence against the immaturity claim by showing that younger children (viz. 4- and 5-year-olds) can flexibly evaluate specific abilities versus their global worth depending on the context of their behavior.

We start by testing whether manipulating the difficulty of a failed task (e.g., drawing a sun vs. drawing a horse) has differential effects on children's evaluations of ability versus self-worth. All else being equal, failing an easy (vs. hard) task should provide stronger

evidence of low ability. For example, being unable to draw something as simple as a sun would be particularly diagnostic of poor drawing skill. In contrast, whether the failed task is easy versus hard seems less relevant to one's worth as a person—at least in the typical circumstance when the ability in question is not central to one's global self-concept.

### Method

#### Participants

Thirty-two 4- and 5-year-old children (16 girls and 16 boys;  $M_{\text{age}} = 5;0$ , range = 4;0–5;11) were recruited using the same procedures as Study 1. Three additional children were tested but excluded because they refused to complete the study.

#### Procedure and Materials

The procedure was similar to that of Study 1, except we manipulated the difficulty of the failed task. Four pairs of easy/hard tasks were used: making a ball/car out of Play-Doh, drawing a sun/horse, building a small/big tower out of blocks, and solving a small/big puzzle. The level of difficulty of each task was further emphasized by the script (e.g., "You really want to draw a sun/horse, even though it is going to be easy/hard"; see Table S5). Each child was presented with two easy and two hard tasks (one from each of the four pairs; order counterbalanced). After each scenario, children were asked to evaluate (a) their ability for that task (see below) and (b) their global self-worth (as in Study 1), in counterbalanced order. No open-ended justifications were elicited in either this study or Study 4.

Children's evaluations of their abilities were elicited with the same two-step procedure described in Study 1. Children were first asked whether the failure in each scenario made them feel like they were "good" or "not good" at the task (e.g., "Does not drawing the sun/horse right make you feel like you're good at drawing or not good at drawing?"). Next, children selected *how* good or not good their ability was on corresponding 3-point scales (1 = *really not good* to 3 = *sort of not good*; 4 = *sort of good* to 6 = *really good*).

### Results and Discussion

Children's ratings of ability and self-worth across the four trials were simultaneously regressed on the task difficulty variable ( $-.5 = \textit{easy}$ ,  $.5 = \textit{hard}$ ). As predicted, when children failed an easy (vs. hard)

task, they downgraded their estimates of ability for that task ( $M_{\text{easy}} = 3.59$  vs.  $M_{\text{hard}} = 4.17$ ),  $B = 0.58$ ,  $t = 3.04$ ,  $p = .002$ . In contrast, the difficulty of the task was unrelated to children's evaluations of their global worth ( $M_{\text{easy}} = 4.09$  vs.  $M_{\text{hard}} = 4.02$ ),  $B = -0.08$ ,  $t = -0.33$ ,  $p = .74$ . The model also revealed that the difficulty manipulation had different effects on children's self-evaluations of task-specific ability versus global worth,  $B = 0.66$ ,  $t = 2.43$ ,  $p = .015$ .

In sum, failing easy (vs. hard) tasks prompted 4- and 5-year-olds to evaluate themselves as less good at those tasks, but the difficulty of the failed task had no effect on children's global self-evaluations. This pattern of context-sensitive updating of the self-concept at different levels of abstraction advances the debate about self-esteem judgments in early childhood, contradicting claims that these judgments are immature.

### Study 4

In the last study, we tested whether 4- and 5-year-olds can also draw the converse pattern of inferences (relative to Study 3): We expected that children should be able to update their global self-evaluations in response to failure while leaving their evaluations of ability unchanged. To test this predicted pattern, we used the *request* manipulation from Study 1. We expected that, like the older children in Study 1, 4- and 5-year-olds would report lower self-worth when failing a task that is adult requested (vs. self-initiated). However, this manipulation should not affect how children evaluate their ability for that task. Failure on a task is equally informative about one's ability regardless of the reason for performing the task.

### Method

#### Participants

Thirty-two 4- and 5-year-old children (16 girls and 16 boys;  $M_{\text{age}} = 4;10$ , range = 4;0–5;11) were recruited using the same procedures as Study 1. Two additional children were tested but excluded from the final sample because they refused to complete the study.

#### Procedure and Materials

The procedure, measures, and counterbalancing were the same as in the previous study, except that the *difficulty* manipulation was replaced with the

*request* manipulation from Study 1. Thus, the scenarios described tasks either requested by an adult or initiated by the child (see Table S6).

### Results and Discussion

Children's ratings of ability and self-worth across the four trials were simultaneously regressed on the *request* variable ( $-.5 = \textit{self-initiated}$ ,  $.5 = \textit{adult-requested}$ ). Replicating Study 1 with a younger sample, when children failed an adult-requested (vs. self-initiated) task, they reported lower self-worth ( $M_{\text{adult}} = 3.75$  vs.  $M_{\text{self}} = 4.31$ ),  $B = -0.56$ ,  $t = -2.34$ ,  $p = .019$ . In contrast, children's self-evaluations of ability were not significantly affected by whether the task was adult requested or self-initiated ( $M_{\text{adult}} = 4.25$  vs.  $M_{\text{self}} = 3.75$ ),  $B = 0.50$ ,  $t = 1.61$ ,  $p = .108$ . If anything, children's ability estimates were *higher* in the adult-request scenarios, as if children were discounting the evidential value of failure on a task that they did not choose for themselves. The *request* manipulation had significantly divergent effects on children's evaluations of abilities versus self-worth,  $B = -1.06$ ,  $t = -3.13$ ,  $p = .002$ .

In sum, failing adult-requested (vs. self-initiated) tasks prompted 4- and 5-year-olds to downgrade their global self-worth, but this manipulation had no effect on how children evaluated their ability for the failed task. Again, children's nuanced ability to update different aspects of the self-concept depending on the context of their failure is inconsistent with the claim that reasoning about one's global self-worth is immature in early childhood.

### General Discussion

There is considerable debate about the nature of early self-concepts, and in particular, about whether they undergo a qualitative shift in abstractness as children transition from early to middle childhood. The present research is inconsistent with claims of stage-like development, instead suggesting continuity in the abstractness of children's self-concepts across early and middle childhood.

One of the stage-like developments under debate concerns children's reasoning about traits and abilities. In the present studies, we tested an alternative interpretation for a finding that appeared to suggest qualitative changes in this respect—namely, the finding that young children tend to report lower self-worth in response to criticism about their poor performance (Hebert & Dweck, 1985; Heyman

et al., 1992). This result was originally interpreted as evidence that young children were unable to attribute their failure to the lack of a specific ability. We argued instead that failure affected children's global self-worth in these studies because it led to a perceived loss of social approval—an important basis for judging self-esteem throughout life (e.g., Leary & Baumeister, 2000). Consistent with this alternative interpretation, we found that children's reported self-worth dropped (a) when they failed tasks that were specifically requested by an adult (vs. self-initiated), and (b) when they failed tasks that were important (vs. recreational); both of these elements were present in prior work demonstrating global negative self-evaluations in response to poor performance. Thus, these global self-evaluations may have been due to the interpersonal consequences of failure rather than to an inability to reason about trait-like abilities.

A second putative development from early to middle childhood concerns the ability to reason about one's global worth as a person. Although some evidence already contradicts the claim of discontinuities on this dimension (e.g., Cvencek et al., 2016; Harris et al., 2017; Hebert & Dweck, 1985; Heyman et al., 1992), a subset of these studies were interpreted as showing that young children's global self-worth judgments are largely a by product of immaturity at lower levels of abstraction in the self-concept (Burhans & Dweck, 1995). Studies 3 and 4 provided direct evidence against this immaturity claim, demonstrating that 4- and 5-year-old children can evaluate their global worth versus their domain-specific abilities based on the context of their behavior. Children lowered their estimation of their abilities, but not their global self-worth, when failing an easy (vs. hard) task (Study 3). Conversely, they lowered their estimation of their global self-worth, but not their abilities, when failing an adult-requested (vs. self-initiated) task (Study 4). This evidence provides additional support for the claim that young children's representations of global self-worth (or self-esteem) are not qualitatively different from those of older children and adults.

Importantly, we are not suggesting that self-concepts are unchanged across development. There is, of course, enormous growth and refinement in the *content* of children's beliefs about themselves, their abilities, their preferences, and so forth, in response to their experiences during early childhood (e.g., Harter, 2012). However, the present studies add to the evidence suggesting that the *structure* of children's judgments about the self (e.g., their abstractness, their flexibility, their sensitivity to context)

does not change qualitatively as children move from early to middle childhood.

#### *Implications for Children's Reasoning About Ability*

These studies have implications for the literature on children's reasoning about competence and ability. Until recently, the dominant view in this literature was that young children are unrealistically positive about their abilities, even in the face of evidence about their shortcomings (for reviews, see Butler, 2005; Cimpian, 2017). However, this portrayal of young children as incorrigible optimists has already been contradicted by numerous findings (e.g., Butler, 1998; Cimpian et al., 2007; Heyman et al., 1992). The present evidence is also inconsistent with this portrayal. The self-evaluations of 4- and 5-year-olds in our studies were sensitive to information about their failures. Moreover, children flexibly updated their self-concepts at different levels of abstraction depending on the context of their failures (Studies 3 and 4). From a practical standpoint, this evidence suggests that young children may not be as resilient to challenges as previously thought. It will thus be important to devise means of fostering adaptive learning mindsets in children this age (e.g., Cimpian, 2017).

#### *Limitations and Future Directions*

One limitation of the current studies was the use of hypothetical scenarios. This methodology was modeled on the studies whose results we sought to reinterpret (e.g., Heyman et al., 1992) and was thus necessary to accomplish this goal. In addition, the hypothetical scenarios made it feasible to experimentally manipulate various aspects of the context of children's failure (e.g., adult requests). Nonetheless, research on the nuanced ways in which everyday successes and failures shape young children's self-concepts would be welcome. Outside the laboratory, children's behavior is likely to carry additional meaning that may magnify—as well as complicate—its effects on their self-concepts (although see Cvencek et al., 2017; Harris et al., 2017 for external validation of simple measures of self-esteem similar to ours).

We studied children's self-concepts by examining their self-evaluations in response to performance feedback. This approach differs from other studies in the literature, which tend to investigate self-concepts in a decontextualized way by asking children general questions (e.g., "Can you run fast?") or measuring their agreement with general

statements about their abilities and preferences (e.g., Harter & Pike, 1984; Marsh et al., 2002). Perhaps our assessment of children's self-concepts in a simple, meaningful context is one reason why the results indicated richer conceptual abilities than identified in previous work. Similar methodological changes led to discoveries of early competence in other conceptual domains as well (e.g., Baillargeon et al., 2015; Butler, 2005). However, in future work it will be important to verify that our conclusions about the richness of early self-concepts hold across other assessment tools.

#### *Conclusion*

Young children's self-concepts are often portrayed as being relatively concrete. The present research offers evidence against this perspective, suggesting instead that early self-concepts may be as abstract as those of older children and adults, and sensitive to the same interpersonal concerns.

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### Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

**Figure S1.** The Scale of Schematic Faces Used in the Two-Step Rating Scales

**Figure S2.** The Percentages of Children in Study 1 Who Responded With “Not a Good Boy/Girl” (Left) or “Sad” (Right) on 0, 1, 2, 3, or 4 of the Four Failure Scenarios

**Table S1.** The Four Pretend Scenarios Presented to Children in Study 1

**Table S2.** Sample Justifications Provided by Children in Study 1

**Table S3.** Script for the Product-Rating Measure of Contingent Self-Worth Used in Study 1 (Adapted From Heyman et al., 1992)

**Table S4.** The Four Pretend Scenarios Presented to Children in Study 2

**Table S5.** The Four Pretend Scenarios Presented to Children in Study 3

**Table S6.** The Four Pretend Scenarios Presented to Children in Study 4

**Data S1.** Study 1: Analytic Strategy