Preschoolers find ways to resist temptation after learning that willpower can be energizing

Kyla Haimovitz[1] | Carol S. Dweck[2] | Gregory M. Walton[2]

[1]Department of Psychology, University of Pennsylvania, Philadelphia, PA, USA

[2]Department of Psychology, Stanford University, Stanford, CA, USA

Correspondence
Kyla Haimovitz, Department of Psychology, University of Pennsylvania, Philadelphia, PA, USA.
Email: kylah@sas.upenn.edu

Abstract

Children's tendency to delay gratification predicts important life outcomes, yet little is known about how to enhance delay of gratification other than by teaching task-specific strategies. The present research investigated the effect of exposing children to a model who experiences the exertion of willpower as energizing. In two experiments, 86 4- to 5-year olds were read a story that represented the exertion of willpower as energizing or a control story before taking part in a delay of gratification task. Children exposed to a storybook character who struggled with waiting, but eventually found it energizing, spontaneously generated more delay strategies, which enhanced delay. By promoting the search for effective strategies, this approach provides a promising direction for efforts to foster self-regulation early in development.

1 | INTRODUCTION

Decades of research show that measures of self-control administered in early childhood are strong predictors of major life outcomes. Young children with greater self-control – the regulation of thoughts, feelings, and actions in service of enduringly valued goals – are better prepared to enter school, showing higher math and literacy scores in kindergarten and early elementary school (Blair & Razza, 2007; Bull & Scerif, 2001; Eisenberg, Duckworth, Spinrad, & Valiente, 2014; McClelland, Morrison, & Holmes, 2000; Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008), better social functioning (Duckworth, Quinn, & Tsukayama, 2012; Eisenberg et al., 1997; Fabes et al., 1999; Maszk, Eisenberg, & Guthrie, 1999), and fewer health problems (e.g. Daly, Egan, Quigley, Delaney, & Baumeister, 2016; McClelland et al., 2000). Childhood self-control also predicts greater professional success, better health, less drug use, and less criminality in adulthood (Caspi, Wright, Moffitt, & Silva, 1998; Daly, Delaney, Egan, & Baumeister, 2015; Heckman, Stixrud, & Urzua, 2006; Mischel, Shoda, & Rodriguez, 1989; Moffitt et al., 2011), above and beyond childhood IQ and socioeconomic status and with effects of similar magnitude (Moffitt et al., 2011). Moreover, Moffitt et al. (2011) showed that the more children improved their self-control in childhood, the better their outcomes in adulthood, even when controlling for their initial levels of self-control. The importance of these effects raises a pressing question: How do some children come to

effectively resist their impulses in the face of temptation while others struggle? And how can we influence these processes to promote better self-control in early childhood?

Past research conceptualizes childhood self-control as an ability rooted in neurocognitive processes (e.g., Tabibnia et al., 2011), or more commonly, as skill. This conception has led to the creation of early-childhood curricula that include a focus on developing self-regulatory skills through practice in regular, developmentally appropriate activities. These systemic and school-wide reforms have yielded promising results (Diamond, Barnet, Thomas, & Munro, 2007; Lillard & Else-Quest, 2006; Rybanska, McKay, Jong, & Whitehouse, 2018; Sasser, Bierman, Heinrich, & Nix, 2017; see Diamond & Lee, 2011; for successful but mixed results of such reforms, see Blair & Raver, 2014). In the present research, however, we conceptualized self-control as not just a skill or ability but also as rooted in a belief system that encourages children to (or discourages them from) searching for effective strategies to meet self-regulatory challenges. That is, apart from how good people are at resisting temptations, their success in self-regulating may also be determined by their understanding of self-control. For instance, is it possible to resist temptations? Will resisting temptations tire you out or energize you? Such beliefs serve as a mental model that helps people make sense of their experiences facing self-regulatory challenges and that can help them plan and execute their corresponding behaviors (see Yeager & Dweck, 2012). We wondered if there are ways to represent willpower to young

children that would help them develop self-control even without introducing new skills or task-specific strategies.

This question is in part derived from one relevant area of past research relating to how children (and adults) understand personal attributes. For example, viewing intelligence as fixed versus malleable can create different approaches to learning in students (e.g., Blackwell, Trzesniewski, & Dweck, 2007; see Mueller & Dweck, 1998; Yeager & Dweck, 2012). Those who view intelligence as a quality that can be developed, relative to those who view it as fixed, tend to approach learning experiences with more adaptive strategies, such as maintaining or increasing effort when they encounter difficulty (e.g., Blackwell et al., 2007; Hong, Chiu, Dweck, Lin, & Wan, 1999; see Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013).

What ways of understanding self-control might promote an adaptive search for self-control strategies? Past research with college students shows that those who think of willpower as a *limited* and easily depleted resource exhibit declines in self-control as they take on a series of difficult tasks. By contrast, people who think of willpower as not so limited and even as self-energizing find ways to sustain self-regulatory efforts over time (Job, Dweck, & Walton, 2010; Job, Walton, Bernecker, & Dweck, 2015; Miller et al., 2012). In adults, these are called limited and non-limited resource theories. The latter agree that, 'If you have just resisted a strong temptation, you feel strengthened and can withstand any new temptations'. This past research addressed an influential model of self-control, which argues that, as people engage in acts of self-control, they in fact deplete a limited resource, making it harder to exert control on a subsequent task (Baumeister, Vohs, & Tice, 2007). However, this model has seen mixed results and been called into question in recent years (e.g. Carter, Kofler, Forster, & McCullough, 2015; Friese, Loscelder, Gieseler, Frankenbach, & Inzlicht, 2018). Job et al. (2010) showed that it is chiefly those who *believe* that willpower is limited who show diminished self-control when they encounter later difficulties. This is the case both when beliefs about willpower are measured as an individual difference and when they are manipulated experimentally, demonstrating their causal effects. Individual differences in willpower beliefs also predict important outcomes in the real world, such as grades in demanding school settings (Job et al., 2015). Notably, the belief that exerting willpower is energizing is more common in some cultural contexts, than the view that willpower depends on a limited, easily depleted resource, a view relatively common in the United States (Savani & Job, 2017). The existence of strong cultural differences in a belief system that predicts important life outcomes further underscores the importance of understanding how these belief systems develop and what factors may promote the development of more adaptive beliefs early in life.

In early childhood, children may not yet have well-formed beliefs about willpower. But they may still approach self-control demands in different ways. How might research on willpower theories with adults inform ways to enhance children's self-control? The current research tested whether exposure to a model in a storybook who experiences exerting willpower as energizing would inspire preschoolers to search for self-control strategies in the face of temptation.

Research Highlights

- Preschoolers were read a story that represented the use of willpower as energizing, or a control story, before participating in a delay of gratification task.
- Children exposed to a storybook character who struggled with waiting, but eventually found it energizing, spontaneously generated more delay strategies, and delayed longer.
- Results suggest children's self-control is dependent not just on skills, but on underlying frameworks that can motivate children to actively seek out ways to exert self-control.
- By promoting a search for effective strategies, such approaches to self-control may provide promising directions for intervention.

Storybooks are a common vehicle to transmit and draw attention to cultural beliefs and lessons about how people think and act (e.g., Bal & Veltkamp, 2013; Dodell-Feder & Tamir, 2018; Kidd & Castano, 2013; Miller, Wiley, Fung, & Liang, 1997; Oatley, 2016; Tsai, Louie, Chen, & Uchida, 2007). Indirect priming of messages communicated in a storybook has also been shown to be more effective at increasing delay of gratification, compared with direct instruction to wait (Kesek, Cunningham, Packer, & Zelazo, 2011). Thus, we thought stories might be a useful way to model this understanding of willpower for young children. We embodied a conceptualization of willpower as energizing in a storybook character: a child who experiences waiting as difficult at first but eventually finds waiting strengthening and rewarding.

This approach draws on past research. For instance, one study found that fourth- and fifth-grade children exposed to an adult model who expressed a preference for delayed rather than immediate rewards subsequently endorsed similar choices (Bandura & Mischel, 1965). Yet, modeling the mere choice to wait may not, on its own, equip children with beliefs that help them persevere when waiting is difficult. It may also be important to convey that experiencing difficulty while waiting need not mean that one cannot keep waiting – that difficulty can also be energizing. Consistent with this theorizing, but focused on math learning, Schunk, Hanson, and Cox (1987) exposed fourth- to sixth-gradechildren to a model who first struggled and then succeeded in learning a math exercise. Children who saw this model later performed better on a similar math exercise than children exposed to a model who performed well without initially struggling. Similarly, Leonard, Lee, and Schultz (2017) found that infants exposed to an adult who struggled with and succeeded in using a set of toys persisted longer trying to get their own toy to function, compared to those who saw an adult use the toy with ease (see also Klein & O'Brien, 2017; Lin-Siegler, Ahn, Chen, Fang, & Luna-Lucero, 2016; Schunk & Hanson, 1989; Zimmerman & Blotner, 1979;

Zimmerman & Ringle, 1981). These studies illustrate how responsive children can be to models who illustrate the process of overcoming challenges.

Extending these past literatures, the present research tests the impact of a storybook model who chooses to delay gratification, overcomes struggles in self-control, and finds this process energizing. We hypothesize that exposure to this model – even without exposure to concrete strategies for delaying gratification – will lead children to seek out ways to make waiting easier (and perhaps more energizing or enjoyable) for themselves. By trying out strategies, children may be more likely to find strategies that are effective and thus delay longer. Past research suggests that using a diversity of strategies spontaneously in the delay of gratification task relates to greater delay, and that such strategy use increases with age (Carlson & Beck, 2009). If children do indeed try out strategies while waiting, without modeling or instruction in specific strategies for self-control, it would suggest that children develop self-control not merely by being taught skills or by imitating or trying harder, but instead as active and strategic agents.

We examined this hypothesis in the context of delay of gratification, an especially important marker of self-control (Duckworth, Tsukayama, & Kirby, 2013; Mischel et al., 1989). Most studies that have successfully manipulated delay of gratification have involved the provision of specific techniques to delay, such as providing children task-specific cognitive strategies (e.g., look away from the marshmallow, Mischel & Ebbesen, 1970; 'imagine the marshmallow as a cloud'; Mischel & Baker, 1975). Other work suggests that providing children with a personal or group identity associated with self-control can increase delay (e.g., a Superman cape, Doebel & Munakata, 2018; Karniol et al., 2011; Toner, Moore, & Emmons, 1980; see White & Carlson, 2016; White et al., 2017 for similar examples). Instead, we used a model to represent the idea that exerting self-control can be energizing.

In two experiments, which used different comparison conditions (a neutral control in Experiment 1 and a successful waiting control in Experiment 2), we tested whether exposure to a storybook character who experiences the exertion of willpower as energizing would prompt children to become more resourceful in their own efforts to delay – that is, to spontaneously make more distinct efforts to help themselves delay – and whether this increase in strategic behavior would mediate longer delay.

Secondarily, if children do make more strategic efforts, would they then come to use more *effective* strategies, which, in turn, would contribute to a longer delay? To test this, we measured the proportion of time children distracted themselves from the temptation as an observable measure of effective strategies for delaying gratification. This measure was derived from past research suggesting that children's delay is facilitated by non-consummatory or 'cold' strategies such as distraction that reduce the salience of the consummatory or 'hot' aspects of the temptation (Mischel, Ebbesen, & Zeiss, 1972; Peake, Hebl, & Mischel, 2002; see Metcalfe & Mischel, 1999). Importantly, we were careful not to introduce such delay strategies in the content of the storybooks.

If these hypotheses were supported, it would suggest how exposure to a model who experiences struggling with self-control as energizing can empower young children to strive to self-regulate.

2 | EXPERIMENT 1

2.1 | Methods

2.1.1 | Participants

In all, 43 4- to 5-year olds (58% female) in a university-affiliated laboratory preschool in the San Francisco Bay Area participated. Sample size was based on what was needed to detect an effect of 80% power, using effect sizes from similar manipulations of storybooks to encourage challenge seeking in the same population, which found an average effect of d = 0.86 (Master, 2011). One initial participant was excluded because a fire drill interrupted the experiment. The mean age of our participants was 4.5 years, ranging from 48 to 61 months (SD = 3.76 months). We chose to focus on this age range to match previous research on the delay paradigm (e.g., Mischel et al., 1972, 1989), and because children may start developing knowledge of which strategies are effective for delaying gratification between ages 4 and 5 years (Mischel & Mischel, 1983). All participants were fluent English speakers. The participants attended a part-time (8–20 hr/week) play-based nursery school in an upper-middle class community; however, the school provides 20%–25% of children with financial aid so as to diversify the economic status of the student body. Approximately 38% of students in the school was identified by parents as multi-ethnic/racial and 64% students as of one race/ethnicity. Of the latter, approximately 62% was Caucasian, 14% Asian, 9% Indian/South Asian, 8% Hispanic, 6% Middle Eastern, and 2% African American.

Classroom teachers distributed and collected parent permission forms during drop off and pick up. Children whose parents had given consent were approached by one of several female researchers and asked if they wished to participate. These researchers had previously acted as classroom assistants so that children could become familiar and comfortable with them before being asked to participate.

2.1.2 | Procedure

Participants were randomly assigned to hear one of two storybooks about a child going through his or her day (referred to by the participating child's name and matching their gender in an effort to increase relatability; see Master, 2011). Both stories contained the same simple illustrations. In the experimental condition, the story conveyed the idea that exerting self-control can be energizing (e.g., 'Lucy waited and waited and it was hard. But the longer she waited, the stronger she felt!', 'I can keep on going', Lucy thought. 'If I can wait a few minutes, then I can keep waiting'). This idea was highlighted through two concrete examples in which the main character waited to open a present and waited to

get ice cream. We embodied the aspects of a non-limited theory of willpower in a storybook character who encountered two different situations because children have difficulty generalizing broad lessons or principles beyond the particular situation in which they learned them (e.g., Holyoak, Junn, & Billman, 1984). This generalization process is facilitated using concrete examples that children can relate to their own experiences (Chen, Yanowitz, & Daehler, 1995). In an effort to increase children's engagement with the story, the main character chanted the mantra 'Keep on keeping on' several times and the participating child was encouraged to chant along. To avoid any harmful effects of introducing the idea that willpower is a limited resource, control-condition children heard a story with the same structure and plot (opening a present, going to get ice cream), but one that did not highlight waiting or represent self-control as energizing. In this condition, children were similarly encouraged to chant a positive mantra but it was unrelated to waiting ('I love Sunday, Sunday, Sunday'). Both stories were positive in content and neither described any specific strategies found in previous research to help children delay gratification (e.g., distracting oneself from the treat, thinking about the 'cold' qualities of the treat; see Metcalfe & Mischel, 1999). Notably, while previous research has not tested whether chanting is itself an effective waiting strategy, it could potentially serve as one, perhaps especially chanting about waiting. We thus explore whether condition effects (e.g., on children's strategy use) extend beyond increasing children's chanting behavior. See Supplementary Material for full story texts.

Next, we administered the delay of gratification task. If children resisted an immediate treat (e.g., two gummy bears), they could obtain a preferred later treat (e.g., three gummy bears; see Mischel & Baker, 1975). Specific treats were assigned based on parents' prior ratings of the child's preference. The delay task was introduced as a new game with no connection to the story and, while listening to the story, children were unaware that they would complete the delay task. First, children were given a bell and the experimenter explained that the experimenter would need to leave the room, but that any time the child rang the bell, they would bring the experimenter back into the room. After the child practiced bringing the experimenter back in the room by ringing the bell, the experimenter then took out the pair of larger and smaller treats and placed them on the table in front of the child where they were left visible during the entire period. The experimenter explained that if the child waited until the experimenter came back on their own, they could have the larger treat, but if they did not want to wait, they could ring the bell any time to bring them back, they could have the smaller treat. Once the child answered three questions assessing the child's understanding of the game, the experimenter left the room without specifying a return time, and returned either when the child rang the bell for the smaller treat, or after 13 min (see Supplementary Material for full experimental script). The delay procedure was designed to avoid demand characteristics; the experimenter manifested indifference as to whether or not the child chose to wait (see Duckworth et al.,

2013). The experimenter also did not make any reference to the storybooks during the delay task. After giving the child the treat, all children explored a novel toy with the experimenter to end on a positive note regardless of which treat they received.

2.1.3 | Dependent measures

Children were videotaped while waiting, allowing two blind raters to later code the strategies children used to delay gratification.

We coded the *total number of discrete strategy bouts* – how many times children tried a distinct delay strategy. A given strategy could be coded as more than one 'bout' if it was used more than once independently, that is, if these uses were separated by time and by another strategy attempt. Delay strategies were behaviors that children appeared to use as a means of entertainment, distraction, or motivation while waiting. These included a mixture of strategies that have been considered effective in past experimental and correlational research, such as children distracting themselves from the temptation (e.g., covering their eyes, turning away from the treat) and strategies that have been considered ineffective in past research, such as focusing on the temptation (e.g., touching, staring at the treat). We also included strategies that have not been examined in as much detail as to their causal effectiveness in past research (e.g., telling a story, singing a song), but that have been observed in some past research (Carlson & Beck, 2009) and seemed likely intended to make waiting easier.[1] Coders also separately coded the number of times children chanted the mantra they learned in their respective storybooks to account for potential alternative explanations, and ensure that chanting was not included in the strategy bout count.

That measure of strategy bouts was meant to capture children's search for strategies, so we looked at how many distinct times children tried something. We additionally wanted to capture whether children actually devoted more time to potentially more effective strategies. We thus coded the *proportion of time children spent using distraction strategies* (i.e., directing their attention away from the temptation, as opposed to looking at, touching, or smelling the treat or bell), as an observable measure of effective strategies for delaying gratification (Mischel & Ebbesen, 1970; Mischel et al., 1972; Peake et al., 2002). This measure was derived from past research suggesting that children's delay is facilitated by non-consummatory or 'cold' strategies such as distraction that reduce the salience of the consummatory or 'hot' aspects of the temptation (Mischel et al., 1972; Peake et al., 2002; see Metcalfe & Mischel, 1999). As noted, we did not introduce such delay strategies in the content of the storybooks.

Two coders rated approximately 30 videos each, with 10 of those videos randomly selected to be coded by both coders to assess reliability. The intra-class correlation coefficient was high for both number of strategy bouts (ICC = 0.95) and proportion of time spent using distraction strategies (ICC = 0.98).

Delay of gratification – the total amount of time children waited for the larger reward – was recorded by the experimenter via stopwatch.
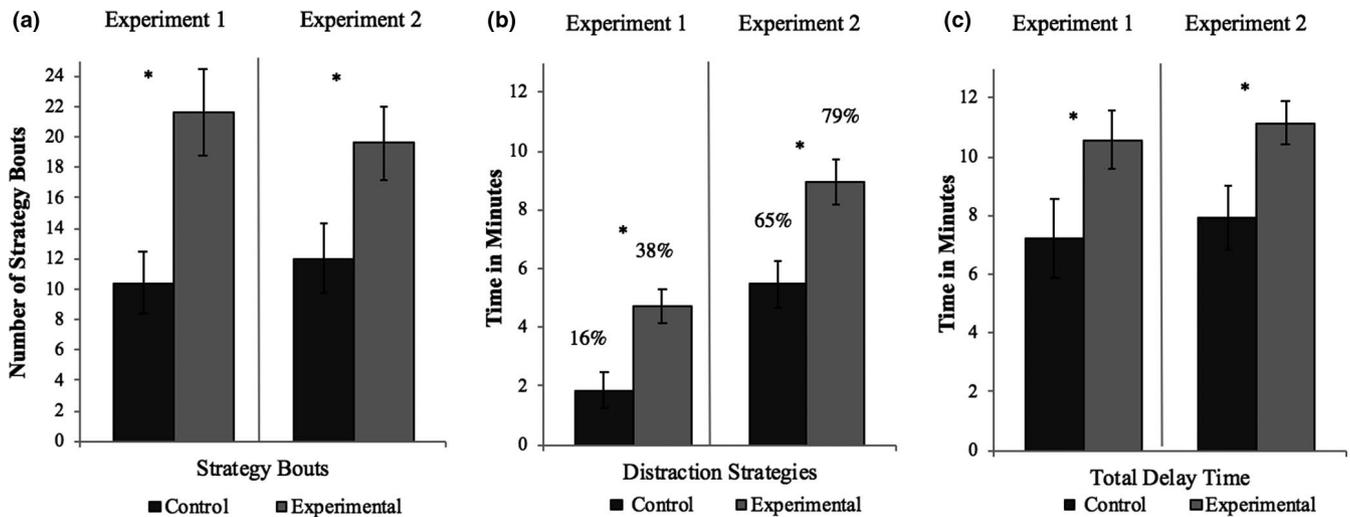
FIGURE 1 For both experiments, Panel (a) shows the mean number of strategy bouts in each condition; Panel (b) shows the mean amount of time children spent using distraction strategies, with percentage of total time listed above each bar; and Panel (c) shows the mean amount of time children spent delaying gratification. Error bars represent ±1 SE of the mean

2.2 | Results

We found support for each of our three hypothesized main effects: Children who heard the storybook that conveyed that willpower can be energizing exhibited more overall strategy bouts (M = 21.61, SD = 13.73) than control participants (M = 10.40, SD = 9.30), $t(41)$ = −3.02, p = .004, η_p^2 = 0.19, 95% CI [−18.54, −3.87] (Figure 1a). They also spent a greater proportion of time distracting themselves from the temptation (Proportion M = 0.38, SD = 0.25; Minutes: M = 4.73, SD = 3.29) than control participants (Proportion: M = 0.16, SD = 0.17; Minutes: M = 1.86, SD = 2.13), $t(41)$ = −3.34, p = .002, η_p^2 = 0.21, 95% CI [−0.34, −0.07] (Figure 1b). And they waited 47% longer (M = 10.57, SD = 4.67 min) than children who heard the control storybook (M = 7.20, SD = 6.00 min), $t(41)$ = −2.07, p = .045, η_p^2 = 0.10, 95% CI [−399.65, −4.87] (see Figure 1c). Additionally, given the irregular distribution of delay task waiting time, we considered two alternative tests of significance. First, we ran a Mann–Whitney U test, a nonparametric test that does not assume a normal distribution. Results support the conclusion that participants in the experimental condition tended to wait longer than those in the control, U = 152.5, Z = −2.14, p = .032. Second, a survival analysis found again that participants in the experimental condition outperformed those in the control, χ^2 = 4.30, p < .05, with 74% of participants waited the full time in the experimental condition, while 45% did so in the control. These main effects were all consistent with our hypotheses that seeing a model who finds struggling with waiting to be energizing would engage more strategically in an effort to delay, spend more time using effective strategies, and ultimately delay longer.

Next, we examined whether the changes in strategy use accounted for the greater delay time among children who heard the storybook condition. The total number of strategy bouts predicted longer delay, β = .77, SE = 0.11, p < .001. The total effect
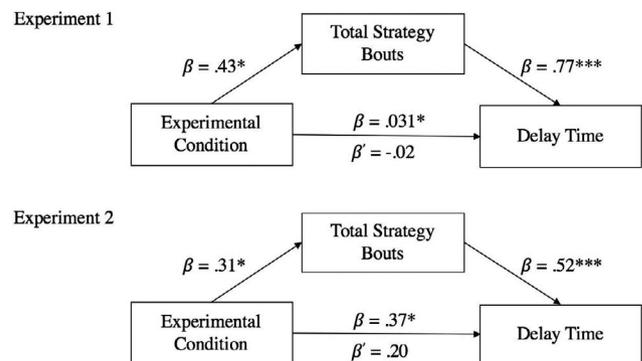

FIGURE 2 Total number of strategy bouts mediates the effect of condition on delay of gratification time in Experiments 1 and 2. Standardized coefficients are reported. Note: *p < .05, **p < .01, ***p < .001

of experimental condition on delay time was significant, β = .31, SE = 0.15, p = .045, R^2 = .09. After controlling for total strategy bouts, the condition effect on delay time was no longer significant (β = −.02, SE = 0.11, p = .86), indicating full mediation. The significant indirect effect of condition through strategy bouts, β = .33, SE = 0.10, was confirmed with a bootstrapped sample of 10,000 bias corrected confidence interval (BCCI) of 95% [.1390, 0.5395] (see Figure 2). To ensure that our results were not dependent on analytic decisions, when we include chanting in the strategy bouts count, all results remain the same. The effect of storybook condition on strategy bouts was still significant, $t(41)$ = 2.97, p = .005, η^2 = 0.18 and the mediating relationship with delay time also held (β = .30, SE = 0.15, p = .045, reduced to β = −.03, SE = 0.12, p = .81). These findings support our key hypothesized mediation that children exposed to a model who experiences struggling with waiting as energizing were motivated to search for possible strategies to help themselves wait, and in doing so, waited longer.

2.3 | Discussion

In Experiment 1, exposure to a model who at first struggled to wait but came to find this energizing led preschoolers to behave more strategically and this increased their delay of gratification. However, it is possible that just the focus on waiting in the experimental storybook contributed to these results (see Bandura & Mischel, 1965). To further isolate the effect of the energizing conception of willpower, Experiment 2 used a new control storybook that also described a model waiting successfully but lacked the message that struggling with willpower can be energizing.

3 | EXPERIMENT 2

3.1 | Methods

3.1.1 | Participants

In all, 43 participants of 4- to 5-year olds (51% female) attending the same university-affiliated laboratory preschool with the same demographic background and recruitment procedures as Experiment 1. Mean age was 4.89 years (SD = 5.54 months), ranging from 48 to 67 months.

3.1.2 | Procedure

In Experiment 2, participants were randomly assigned to hear either the experimental story from Experiment 1 or a new control story. Waiting was mentioned an equal number of times in the two storybooks, and the main character successfully waited in the same situations (opening a present, getting ice cream; see Supplemental Material for full story texts). Pilot participants (N = 30 adults) rated the main characters as waiting an equal amount of time, with equal success, and viewed the two stories as equally positive (all ts < 1.1, ns). However, whereas the experimental story highlighted how the main character experienced exerting self-control as energizing (e.g., 'the longer you wait, the stronger you feel'), the control story did not introduce this conceptualization of willpower as difficult but eventually energizing; the main character simply waited successfully. To help keep children engaged, participants in each condition chanted the respective mantras of each condition as in Experiment 1. Delay of gratification, strategy bouts, and time spent pursuing effective distractions strategies were measured using the same procedure as in Experiment 1. Two blind raters coded the strategy measures reliably (ICCs from 0.92 to 0.99).

3.2 | Results

Once again, experimental participants made more discrete strategy attempts (M = 19.22, SD = 11.59) than control participants (M = 12.2, SD = 10.09), $t(41)$ = −2.08, p = .043, η_p^2 = 0.10 (Figure 1a). In the course of generating strategies, experimental participants also spent a greater proportion of time using (effective) distraction strategies

(Experimental M = 0.79, SD = 0.11; Minutes: M = 8.88, SD = 3.30; Control M = 0.65, SD = 0.21; Minutes: M = 5.47, SD = 3.79), $t(41)$ = −2.85, p = .007, η_p^2 = 0.17 (Figure 1b). Finally, experimental participants waited 38% longer (M = 11.23, SD = 3.53 min) than control participants (M = 8.15, SD = 5.12 min), $t(41)$ = −2.30, p = .026, η_p^2 = 0.12, 95% CI [−184.61, −80.17] (Figure 1c). Nonparametric tests confirmed these results: Mann–Whitney U = 152.5, Z = −2.14, p = .032, and Kaplan–Meier χ^2 = 4.38, p < .05, with 77% of participants waited the full time in the experimental condition, while 48% did so in the control.

Turning to mediation analyses, we found that the total number of strategy bouts predicted longer delay, β = .52, SE = 0.13, p < .001. The total effect of experimental condition on delay time was significant, β = .37, SE = 0.15, p = .018, R^2 = .13, and after controlling for total strategy bouts, the condition effect on delay time was no longer significant (β = .20, SE = 0.13, p = .14), indicating full mediation. The indirect effect of strategy bouts, β = .16, SE = 0.08, was confirmed with a bootstrapped sample of 10,000 BCCI of 95% [.0231, 0.3544] (see Figure 2). Including chanting as a strategy did not change the results – the treatment effect on discrete strategy attempts remained the same when we include chanting in the strategy bouts measure, $t(41)$ = −2.33, p = .025, η_p^2 = 0.11, 95% CI [−14.61, −1.04], as did the mediating relationship with delay time (β = .34, SE = 0.15, p = .026, reduced to β = .17, SE = 0.14, p = .22).[2]

3.3 | Exploratory analyses combining Experiments 1 and 2

Finally, although we were admittedly underpowered to detect a serial mediation relationship (see Bullock & Ha, 2011; Thoemmes, MacKinnon, & Reiser, 2010), we combined results from Experiments 1 and 2 to tentatively explore whether the data supported the full theoretical model: if the storybook condition led children to try more strategy bouts, which translated into a greater proportion of time using effective distraction strategies, and thus led to longer delay. We tested this model using bootstrapping procedures recommended for smaller samples (Fritz & MacKinnon, 2007; Preacher & Hayes, 2008).

The aggregated data supported the full serial mediation model. Controlling for an indicator of study to account for any differences in sample or procedure in the two studies, the experimental storybook led children to try more strategy bouts, $B(83)$ = 0.37, SE = 0.10, p < .001, 95% CI [.1691, 0.5778]. Strategy bouts then led to a larger proportion of time spent using distraction strategies, $B(82)$ = 0.244, SE = 0.08, p < .01, CI [.0888, 0.3998], as did condition, $B(82)$ = 0.21, SE = 0.07, p < .01, CI [.0729, 0.3449]. Strategy bouts then predicted greater delay time, $B(81)$ = 0.54, SE = 0.09, p < .001, CI [.3529, 0.7237], as did proportion of time using distraction strategies, $B(81)$ = 0.46, SE = 13, p < .001, CI [.1935, 0.7284]. While the total effect of condition on delay was significant, $B(83)$ = 0.33, SE = 0.11, p < .01, CI [.1164, 0.5465], once accounting for mediators, the effect of condition on delay time was no longer significant, $B(81)$ = −0.008, SE = 0.09, p = .93, ns, CI [−0.1841, 0.1683]. The individual indirect effect of condition through number

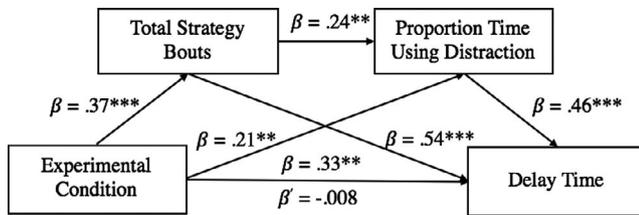**FIGURE 3** Serial multiple mediation models for Experiment 1 and 2 combined. Standardized coefficients are reported. Note: *p < .05, **p < .01, ***p < .001

of strategy bouts was significant, B = 0.20, BCCI [.0981, 0.3262], as was the indirect effect through strategy bouts and then proportion of distraction strategies, B = 0.04, BCCI [.0128, 0.0959], and through proportion of distraction strategies alone, B = 0.10 BCCI [.0335, 0.1963] (see Figure 3).

See Tables S1 and S2 in the Supplementary Material for more exploratory analyses on the frequency and condition differences in delay for each strategy.

4 | GENERAL DISCUSSION

The present studies suggest that the message that exerting willpower can be difficult but energizing can influence children's generation and use of delay of gratification strategies. Exposing children to a storybook model who struggled to wait but came to experience this as energizing led them to make more distinct efforts to help themselves delay, to spend a greater proportion of time using effective strategies, and to delay longer. We also found support for the hypothesized mediation: the message that exerting willpower can be energizing led children to approach a self-control challenge more strategically, which accounted for their increased time spent delaying gratification.

These results highlight how self-control may develop not just as a set of skills to learn through repeated practice on challenging tasks, as examined in past research (e.g., Diamond et al., 2007; Mischel & Baker, 1975; Mischel & Ebbesen, 1970), but through a general approach to willpower that encourages children's generation and use of self-control strategies. Our focus on encouraging children's search for effective self-control strategies makes an important advance. This approach to self-control may be a critical, yet understudied, way in which early-childhood self-control develops and predicts later outcomes beyond self-control skills alone. If children learn to approach willpower as self-energizing, can this develop into a more general tendency to search for strategies and be resourceful across multiple novel self-regulatory situations? There may also be important relationships between self-control strategies and skills. A tendency to search for strategies appropriate for a given situation could, for instance, help children learn strategies that are effective for them in which situations, thus building skills that make it easier to exert self-control. While the current study does not attempt to measure or manipulate long-term or generalizable outcomes with a

brief storybook manipulation, the possibility for understanding such recursive processes points to the need for several streams of future research. These include longitudinal studies that track children's development of self-control approaches and strategies, and ultimately, longitudinal field experiments that test persuasive means of promoting adaptive, self-sustaining approaches to willpower (see Walton & Wilson, 2018), ones that can alter children's trajectories.

Another question for future research is how the approach to self-control as energizing, and the associated search for strategies, is naturally socialized. Literature on the development of implicit theories of intelligence would suggest that modeling and language from parents and teachers play a likely role (e.g., Haimovitz & Dweck, 2016; Gunderson et al., 2013; cf. Haimovitz & Dweck, 2017). Cultural products and advertising can also communicate views of willpower as limited or self-energizing (such as advertisements for the necessity of sugary cereals or candy bars for frequent energy boosts; or the depiction of frequent breaks as necessary for sustaining effort). As noted above, past research that demonstrates how exerting willpower is thought to be energizing more in some cultural contexts (like India) than in others (the USA; Savani & Job, 2017) implies that there are differences in cues across cultures about willpower, perhaps cyclically reinforcing individual beliefs. What kinds of cues are salient to young children? For instance, are there differences in early-childhood experiences between children in India and the USA that contribute to cultural differences between adults by conveying messages analogous to our storybooks, such as in interpersonal communications or in media (e.g., storybooks, children's television)? Future research could learn from such differences to inform theory about how culture and development intersect, and to build applications that foster more adaptive approaches to willpower, even in a culture like the United States that may predominantly endorses limited theories of willpower (Savani & Job, 2017).

These findings also lend support to our core theoretical assumption that children are active, strategic agents. It could have been the case that hearing the treatment storybook simply led children to infer that waiting is possible, and thus to just grit their teeth and try to wait out the time out without giving much thought toward trying to make waiting easier or more energizing. If so, children might have tried to wait longer but not searched for ways to make waiting easier. Of course, some children may have done so. However, the studies found that many children searched for effective strategies. Indeed, the mediation analyses suggest that in continuing to try strategies children then tended to include more effective strategies as they sought to delay gratification.

Some limitations of the studies warrant discussion as well. First, because we did not measure children's beliefs about willpower before and after the manipulation, we cannot differentiate various possible changes that contributed to these effects. For instance, although we balanced the amount of waiting represented in both the experimental and control stories to rule out simply priming or modeling waiting, we do not know whether we primed an existing idea that willpower is energizing, rather than introduced a new idea about willpower. We find

both possibilities interesting and compatible ideas that future research could explore through measuring beliefs about willpower, which may not be feasible in preschool students, but could perhaps be measured in older children. Another limitation of the current studies is that they relied on measures of observable behavior alone. While behavioral measures seem appropriate for the age group of interest, and provide the best metric of self-regulatory success, future research may examine strategy use and its underlying cognitive mechanisms using other means, like self-report (see Kushnir, Gopnik, Chernyak, Seiver, & Wellman, 2015).

Additionally, to design the manipulation, we translated research on adults' beliefs about willpower into a form that young children could understand by embodying the core elements in a storybook character: someone who struggles with waiting at first, but still chooses to wait and finds that energizing. Although we believed these elements to be the minimum necessary to communicate a parallel and impactful idea to children, it could leave open the possibility that one of these elements was more important. While it would be possible to include different aspects of these elements in control conditions, we worried that conveying that willpower is, for instance, difficult (without also conveying that it can be energizing) could have confirmed or induced a limited theory and reduced delay, so we opted not to do so in initial testing. Future work could try to tease these elements apart to see if simply seeing someone struggle with willpower would be helpful on its own (or conversely, harmful).

5 | CONCLUSIONS

This research provides exciting implications for the advancement of theory and application of self-control research. These results suggest the promise of conceptualizing children's self-control as dependent not just on the development of self-control skills through practice, but on underlying beliefs that motivate children to actively seek out ways to exert self-control as they face novel self-regulatory challenges. By understanding how children come to generate self-control strategies at a young age, we may have the potential to improve children's self-control with far-reaching impact.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available at https://osf.io/st6pu/.

ENDNOTES

[1] We use the term strategy with the assumption that the highly activated goal to get the bigger reward is driving their behavior in this paradigm, in line with past research (e.g., Mischel & Ebbesen, 1970; Mischel et al., 1972; Yates & Mischel, 1979).

[2] While we measured delay strategies in terms of bouts to more fully capture the dynamic nature of children's behavior, when we examined a simplified count of total unique strategies that participants used in exploratory analyses, experimental condition still predicted a greater number of unique strategies used, study 1: $t(41) = 2.28$, $p < .05$, $\eta^2 = 0.11$; study 2: $t(41) = 2.17$, $p < .05$, $\eta^2 = 0.10$.

REFERENCES

Bal, P. M., & Veltkamp, M. (2013). How does fiction reading influence empathy? An experimental investigation on the role of emotional transportation. *PLoS ONE*, *8*(1), e55341. https://doi.org/10.1371/journal.pone.0055341

Bandura, A., & Mischel, W. (1965). Modifications of self-imposed delay of reward through exposure to live and symbolic models. *Journal of Personality and Social Psychology*, *2*(5), 698. https://doi.org/10.1037/h0022655

Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, *16*(6), 351–355. https://doi.org/10.1111/j.1467-8721.2007.00534.x

Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, *78*, 246–263. https://doi.org/10.1111/j.1467-8624.2007.00995.x

Blair, C., & Raver, C. C. (2014). Closing the achievement gap through modification of neurocognitive and neuroendocrine function: Results from a cluster randomized controlled trial of an innovative approach to the education of children in kindergarten. *PLoS ONE*, *9*(11), e112393. https://doi.org/10.1371/journal.pone.0112393

Blair, C., & Razza, R. P. (2007). Relating effortful control, executive function, and false belief understanding to emerging math and literacy ability in kindergarten. *Child Development*, *78*, 647–663. https://doi.org/10.1111/j.1467-8624.2007.01019.x

Bull, R., & Scerif, G. (2001). Executive functioning as a predictor of children's mathematics ability: Inhibition, switching, and working memory. *Developmental Neuropsychology*, *19*, 273–293. https://doi.org/10.1207/S15326942DN1903_3

Bullock, J. G., & Ha, S. E. (2011). Mediation analysis is harder than it looks. In J. N. Druckman, D. P. Green, J. H. Kuklinski, & A. Lupia (Eds.), *Cambridge handbook of experimental political science* (pp. 508–521). New York: Cambridge University Press.

Burnette, J. L., O'Boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J. (2013). Mind-sets matter: A meta-analytic review of implicit theories and self-regulation. *Psychological Bulletin*, *139*, 655–701. https://doi.org/10.1037/a0029531

Carlson, S. M., & Beck, D. M. (2009). Symbols as tools in the development of executive function. In A. Winsler, C. Fernyhough & I. Montero (Eds.), *Private speech, executive functioning, and the development of verbal self-regulation* (pp. 163–175). New York, NY: Cambridge University Press. https://doi.org/10.1017/CBO9780511581533.014

Carter, E. C., Kofler, L. M., Forster, D. E., & McCullough, M. E. (2015). A series of meta-analytic tests of the depletion effect: Self-control does not seem to rely on a limited resource. *Journal of Experimental Psychology: General*, *144*, 796–815. https://doi.org/10.1037/xge0000083

Caspi, A., Wright, B., Moffitt, T. E., & Silva, P. (1998). Early failure in the labor market: Childhood and adolescent predictors of unemployment

in the transition to adulthood. *American Sociological Review*, *63*, 424–451. https://doi.org/10.2307/2657557

Chen, Z., Yanowitz, K. L., & Daehler, M. W. (1995). Constraints on accessing abstract source information: Instantiation of principles facilitates children's analogical transfer. *Journal of Educational Psychology*, *87*, 445–454. https://doi.org/10.1037/0022-0663.87.3.445

Daly, M., Delaney, L., Egan, M., & Baumeister, R. F. (2015). Childhood self-control and unemployment throughout the lifespan: Evidence from two British cohort studies. *Psychological Science*, *26*, 709–723. https://doi.org/10.1177/0956797615569001

Daly, M., Egan, M., Quigley, J., Delaney, L., & Baumeister, R. F. (2016). Childhood self-control predicts smoking throughout life: Evidence from 21,000 cohort study participants. *Health Psychology*, *35*, 1254. https://doi.org/10.1037/hea0000393

Diamond, A., Barnett, W. S., Thomas, J., & Munro, S. (2007). Preschool program improves cognitive control. *Science*, *318*, 1387–1388. https://doi.org/10.1126/science.1151148

Diamond, A., & Lee, K. (2011). How can we help children succeed in the 21st century? What the scientific evidence shows aids executive function development in children 4–12 years of age. *Science*, *333*, 959–964. https://doi.org/10.1126/science.1204529

Dodell-Feder, D., & Tamir, D. I. (2018). Fiction reading has a small positive impact on social cognition: A meta-analysis. *Journal of Experimental Psychology: General*, *147*, 1713–1727.

Doebel, S., & Munakata, Y. (2018). Group influences on engaging self-control: Children delay gratification and value it more when their in-group delays and their out-group doesn't. *Psychological Science*, *29*, 738–748. https://doi.org/10.1177/0956797617747367

Duckworth, A. L., Quinn, P. D., & Tsukayama, E. (2012). What no child left behind leaves behind: The roles of IQ and self-control in predicting standardized achievement test scores and report card grades. *Journal of Educational Psychology*, *104*(2), 439–451. https://doi.org/10.1037/a0026280

Duckworth, A. L., Tsukayama, E., & Kirby, T. A. (2013). Is it really self-control? Examining the predictive power of the delay of gratification task. *Personality and Social Psychology Bulletin*, *39*, 843–855. https://doi.org/10.1177/0146167213482589

Eisenberg, N., Duckworth, A., Spinrad, T., & Valiente, C. (2014). Conscientiousness: Origins in childhood? *Developmental Psychology*, *50*, 1331–1349. https://doi.org/10.1037/a0030977

Eisenberg, N., Fabes, R. A., Shepard, S. A., Murphy, B. C., Guthrie, I. K., Jones, S., ... Maszk, P. (1997). Contemporaneous and longitudinal prediction of children's social functioning from regulation and emotionality. *Child Development*, *68*, 642–664. https://doi.org/10.1037/0012-1649.34.5.910

Fabes, R. A., Eisenberg, N., Jones, S., Smith, M., Guthrie, I., Poulin, R., ... Friedman, J. (1999). Regulation, emotionality, and preschoolers' socially competent peer interactions. *Child Development*, *70*, 432–442. https://doi.org/10.1111/1467-8624.00031

Friese, M., Loschelder, D. D., Gieseler, K., Frankenbach, J., & Inzlicht, M. (2018). Is ego depletion real? An analysis of arguments. *Personality and Social Psychology Review*, *30*, 1–25. https://doi.org/10.1177/1088868318762183

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science*, *18*(3), 233–239. https://doi.org/10.1111/j.1467-9280.2007.01882.x

Gunderson, E. A., Gripshover, S. J., Romero, C., Dweck, C. S., Goldin-Meadow, S., & Levine, S. C. (2013). Parent praise to 1- to 3-year-olds predicts children's motivational frameworks 5 years later. *Child Development*, *84*, 1526–1541. https://doi.org/10.1111/cdev.12064

Haimovitz, K., & Dweck, C. S. (2016). What predicts children's fixed and growth intelligence mindsets? Not their parents' views of intelligence but their parents' views of failure. *Psychological Science*, *27*, 859–869. https://doi.org/10.1177/0956797616639727

Haimovitz, K., & Dweck, C. S. (2017). The origins of children's growth and fixed mindsets: New research and a new proposal. *Child Development*, *88*(6), 1849–1859. https://doi.org/10.1111/cdev.12955

Heckman, J., Stixrud, J., & Urzua, S. (2006). The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior. *Journal of Labor Economics*, *24*, 411–482. https://doi.org/10.1086/504455

Holyoak, K. J., Junn, E. N., & Billman, D. O. (1984). Development of analogical problem solving skill. *Child Development*, *55*, 2042–2055. https://doi.org/10.2307/1129778

Hong, Y.-Y., Chiu, C.-Y., Dweck, C. S., Lin, D.-M.-S., & Wan, W. (1999). Implicit theories, attributions, and coping: A meaning system approach. *Journal of Personality and Social Psychology*, *77*(3), 588–599. https://doi.org/10.1037/0022-3514.77.3.588

Job, V., Dweck, C. S., & Walton, G. M. (2010). Ego depletion—Is it all in your head? Implicit theories about willpower affect self-regulation. *Psychological Science*, *21*, 1686–1693. https://doi.org/10.1177/0956797610384745

Job, V., Walton, G. M., Bernecker, K., & Dweck, C. S. (2015). Implicit theories about willpower predict self-regulation and grades in everyday life. *Journal of Personality and Social Psychology*, *108*, 637–647. https://doi.org/10.1037/pspp0000014

Karniol, R., Galili, L., Shtilerman, D., Naim, R., Stern, K., Manjoch, H., & Silverman, R. (2011). Superman can wait: Cognitive self-transformation in the delay of gratification paradigm. *Journal of Clinical Child & Adolescent Psychology*, *40*, 307–317. https://doi.org/10.1080/15374416.2011.546040

Kesek, A., Cunningham, W. A., Packer, D. J., & Zelazo, P. D. (2011). Indirect goal priming is more powerful than explicit instruction in children. *Developmental Science*, *14*(5), 944–948. https://doi.org/10.1111/j.1467-7687.2011.01043.x

Kidd, D. C., & Castano, E. (2013). Reading literary fiction improves theory of mind. *Science*, *342*(6156), 377–380.

Klein, N., & O'Brien, E. (2017). The power and limits of personal change: When a bad past does (and does not) inspire in the present. *Journal of Personality and Social Psychology*, *113*(2), 210–229. https://doi.org/10.1037/pspa0000088

Kushnir, T., Gopnik, A., Chernyak, N., Seiver, E., & Wellman, H. M. (2015). Developing intuitions about free will between ages four and six. *Cognition*, *138*, 79–101. https://doi.org/10.1016/j.cognition.2016.01.003

Leonard, J. A., Lee, Y., & Schulz, L. E. (2017). Infants make more attempts to achieve a goal when they see adults persist. *Science*, *357*(6357), 1290–1294. https://doi.org/10.1126/science.aan2317

Lillard, A., & Else-Quest, N. (2006). The early years: Evaluating Montessori education. *Science*, *313*, 1893–1894. https://doi.org/10.1126/science.1132362

Lin-Siegler, X., Ahn, J. N., Chen, J., Fang, F.-F.-A., & Luna-Lucero, M. (2016). Even Einstein struggled: Effects of learning about great scientists struggles on high school students' motivation to learn science. *Journal of Educational Psychology*, *108*, 314–328. https://doi.org/10.1037/edu0000092

Master, A. (2011). *"I want to try and try": Increasing achievement motivation in young children*. Doctoral dissertation. Retrieved from Stanford University.

Maszk, P., Eisenberg, N. G., & Guthrie, I. K. (1999). Relations of children's social status to their emotionality and regulation: A short-term longitudinal study. *Merrill-Palmer Quarterly*, *45*, 468–492.

McClelland, M. M., Morrison, F. J., & Holmes, D. L. (2000). Children at risk for early academic problems: The role of learning-related social skills. *Early Childhood Research Quarterly*, *15*, 307–329. https://doi.org/10.1016/S0885-2006(00)00069-7

Metcalfe, J., & Mischel, W. (1999). A hot/cool system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, *106*, 3–19. https://doi.org/10.1037/0033-295X.106.1.3

Miller, E. M., Walton, G. M., Dweck, C. S., Job, V., Trzesniewski, K. H., & McClure, S. M. (2012). Theories of willpower affect sustained learning. *PLoS ONE*, *7*, e38680. https://doi.org/10.1371/journal.pone.0038680

Miller, P. J., Wiley, A. R., Fung, H., & Liang, C.-H. (1997). Personal storytelling as a medium of socialization in Chinese and American families. *Child Development*, *68*, 557–568. https://doi.org/10.2307/1131678

Mischel, W., & Baker, N. (1975). Cognitive appraisals and transformations in delay behavior. *Journal of Personality and Social Psychology*, *31*, 254–326. https://doi.org/10.1037/h0076272

Mischel, W., & Ebbesen, E. B. (1970). Attention in delay of gratification. *Journal of Personality and Social Psychology*, *16*(2), 329–337. https://doi.org/10.1037/h0029815

Mischel, W., Ebbesen, E. B., & Zeiss, A. R. (1972). Cognitive and attentional mechanisms in delay of gratification. *Journal of Personality and Social Psychology*, *21*, 204–218. https://doi.org/10.1037/h0076272

Mischel, W., & Mischel, H. N. (1983). Development of children's knowledge of self-control strategies. *Child Development*, *54*, 603–619. https://doi.org/10.2307/1130047

Mischel, W., Shoda, Y., & Rodriguez, L. M. (1989). Delay of gratification in children. *Science*, *244*, 933–938. https://doi.org/10.1126/science.265805

Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., ... Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Science*, *108*, 2693–2698. https://doi.org/10.1073/pnas.1010076108

Mueller, C. M., & Dweck, C. S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology*, *75*, 33–52. https://doi.org/10.1037/0022-3514.75.1.33

Oatley, K. (2016). Fiction: Simulation of social worlds. *Trends in Cognitive Sciences*, *20*(8), 618–628. https://doi.org/10.1016/j.tics.2016.06.002

Peake, P. K., Hebl, M., & Mischel, W. (2002). Strategic attention deployment for delay of gratification in working and waiting situations. *Developmental Psychology*, *38*, 313–326. https://doi.org/10.1037/0012-1649.38.2.313

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Rybanska, V., McKay, R., Jong, J., & Whitehouse, H. (2018). Rituals improve children's ability to delay gratification. *Child Development*, *89*(2), 349–359. https://doi.org/10.1111/cdev.12762

Sasser, T. R., Bierman, K. L., Heinrichs, B., & Nix, R. L. (2017). Preschool intervention can promote sustained growth in the executive-function skills of children exhibiting early deficits. *Psychological Science*, *28*(12), 1719–1730. https://doi.org/10.1177/0956797617711640

Savani, K., & Job, V. (2017). Reverse ego-depletion: Acts of self-control can improve subsequent performance in Indian cultural contexts. *Journal of Personality and Social Psychology*, *113*(4), 589–607. https://doi.org/10.1037/pspi0000099

Schunk, D. H., & Hanson, A. R. (1989). Influence of peer-model attributes on children's beliefs and learning. *Journal of Educational Psychology*, *81*(3), 431–434. https://doi.org/10.1037/0022-0663.81.3.431

Schunk, D. H., Hanson, A. R., & Cox, P. D. (1987). Peer-model attributes and children's achievement behaviors. *Journal of Educational Psychology*, *79*, 54–61. https://doi.org/10.1037/0022-0663.79.1.54

Tabibnia, G., Monterosso, J. R., Baicy, K., Aron, A. R., Poldrack, R. A., Chakrapani, S., ... London, E. D. (2011). Different forms of self-control share a neurocognitive substrate. *The Journal of Neuroscience*, *31*, 4805–4810. https://doi.org/10.1523/JNEUROSCI.2859-10.2011

Thoemmes, F., MacKinnon, D. P., & Reiser, M. R. (2010). Power analysis for complex mediational designs using Monte Carlo methods. *Structural Equation Modeling*, *17*, 510–534. https://doi.org/10.1080/10705511.2010.489379

Toner, I. J., Moore, L. P., & Emmons, B. A. (1980). The effect of being labeled on subsequent self-control in children. *Child Development*, *51*, 618–621. https://doi.org/10.2307/1129308

Tsai, J. L., Louie, J. Y., Chen, E. E., & Uchida, Y. (2007). Learning what feelings to desire: Socialization of ideal affect through children's storybooks. *Personality and Social Psychology Bulletin*, *33*, 17–30. https://doi.org/10.1177/0146167206292749

Valiente, C., Lemery-Chalfant, K., Swanson, J., & Reiser, M. (2008). Prediction of children's academic competence from their effortful control, relationships, and classroom participation. *Journal of Educational Psychology*, *100*, 67–77. https://doi.org/10.1037/0022-0663.100.1.67

Walton, G. M., & Wilson, T. D. (2018). Wise interventions: Psychological remedies for social and personal problems. *Psychological Review*, *125*(5), 617–655. https://doi.org/10.1037/rev0000115

White, R. E., & Carlson, S. M. (2016). What would Batman do? Self-distancing improves executive function in young children. *Developmental Science*, *19*(3), 419–426. https://doi.org/10.1111/desc.12314

White, R. E., Prager, E. O., Schaefer, C., Kross, E., Duckworth, A. L., & Carlson, S. M. (2017). The "Batman Effect": Improving perseverance in young children. *Child Development*, *88*(5), 1563–1571. https://doi.org/10.1111/cdev.12695

Yates, B. T., & Mischel, W. (1979). Young children's preferred attentional strategies for delay of gratification. *Journal of Personality and Social Psychology*, *37*, 286–300. https://doi.org/10.1037/0033-295X.106.1.3

Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist*, *47*, 302–314. https://doi.org/10.1080/00461520.2012.722805

Zimmerman, B. J., & Blotner, R. (1979). Effects of model persistence and success on children's problem solving. *Journal of Educational Psychology*, *71*(4), 508–513. https://doi.org/10.1037/0022-0663.71.4.508

Zimmerman, B. J., & Ringle, J. (1981). Effects of model persistence and statements of confidence on children's self-efficacy and problem solving. *Journal of Educational Psychology*, *73*(4), 485–493. https://doi.org/10.1037/0022-0663.73.4.485

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.