

Contents lists available at [ScienceDirect](#)

## Cognitive Development



# How can we help children save? Tell them they can (if they want to)<sup>☆</sup>



Cristina M. Atance<sup>\*,1</sup>, Jennifer L. Metcalf<sup>1</sup>, Andrea J. Thiessen

School of Psychology, University of Ottawa, Canada

## ARTICLE INFO

### Article history:

Received 2 July 2015

Received in revised form 2 November 2016

Accepted 14 February 2017

### Keywords:

Children's saving

Episodic foresight

Anticipation

Future-oriented behavior

Prompted behavior

Verbal cue

## ABSTRACT

We used a marble game paradigm to explore whether 3-, 4-, and 5-year-olds' saving was facilitated by a verbal prompt alerting them to their choices (i.e., saving or spending marbles). Two marble games differing in desirability assessed whether children in a "prompted" condition saved more than those who did not receive a prompt ("spontaneous" condition) and whether saving increased with age. We also assessed whether children's saving was related to their inhibitory control (IC), theory of mind (ToM), working memory (WM), and receptive language ability. Children in the prompted condition saved significantly more marbles than children in the spontaneous condition, and saving improved significantly with age. After controlling for age, saving was not positively associated with IC, ToM, WM, or receptive language ability. Implications for children's saving, episodic foresight, and future research are discussed.

© 2017 Elsevier Inc. All rights reserved.

## 1. Introduction

Saving for the future is a highly adaptive human behavior. While the term "saving" tends to elicit thoughts of piggy banks, retirement accounts, and college funds, the advantages afforded by our capacity to save extend beyond the realm of finance to many life domains. For example, saving underlies such behaviors as rationing food in the context of poverty or war, storing an infant's outgrown clothing for future offspring, and refraining from enjoying a bottle of wine before its designated date of maturity. Even time can be saved, as with an employee who avoids taking single vacation days throughout the winter to enjoy a long holiday during the summer.

Despite the domain-general nature of saving, most research on this topic has focused on the economic behavior of adults (e.g., Anderson & Nevitte, 2006; Cryder, Lerner, Gross, & Dahl, 2008; Ersner-Hershfield, Garton, Ballard, Samanez-Larkin, & Knutson, 2009; Otto, Davies, & Chater, 2007). Saving is not only observed in adults, however, but also in young children. For example, children save artwork created at school to show their parents, gather rocks and seashells for their personal collections, and (some!) save Halloween candy so that they can enjoy it beyond the evening of October 31st. Anecdotally, in

<sup>☆</sup> This work was funded by a Natural Sciences and Engineering Research Council of Canada Discovery Grant and the Government of Ontario to C. M. A., and by a Postgraduate Scholarship from the Natural Sciences and Engineering Research Council of Canada to J. L. M. The authors wish to thank Julian Caza, Sarah Paluck, and Stephanie Strahm for their assistance with data collection and coding, as well as the children and parents who volunteered their participation.

\* Corresponding author at: School of Psychology, University of Ottawa, Vanier Hall, 136 Jean Jacques Lussier, Ottawa, Ontario, K1N 6N5, Canada.

E-mail address: [atance@uottawa.ca](mailto:atance@uottawa.ca) (C.M. Atance).

<sup>1</sup> These authors contributed equally to this work.

our own laboratory, young children have expressed a desire to save one or more stickers and/or treats they received during an experimental session to later give to a parent or sibling.

More than ever, saving is a particularly relevant topic in light of current economic trends. In the United States, for example, the percentage of workers projected to have adequate funds to maintain their lifestyle through retirement has decreased from 53% in 1983–31% in 2010 (Munnell, Webb, Delorme, & Golub-Sass, 2012). Similarly, saving rates continue to decline in a number of countries including Canada, Australia, the United Kingdom, and Japan (Pasquali & Aridas, 2013). These trends suggest that today's children will need to save more in young and middle-adulthood to avoid the pitfalls currently faced by today's adults. However, to adequately prepare them to do so, we need to gain better insight about how saving develops and, perhaps even more importantly, the particular contexts and/or aids that may improve children's capacity to save.

Relative to research on adults' saving, data about children's saving behaviors are scarce. In the first of just two studies exploring children's saving from an economic psychology perspective, Sonuga-Barke and Webley (1993) developed a "play economy" board used with a small sample of 4-, 6-, 9-, and 12-year-olds. The goal of the game was to save (i.e., avoid spending or losing) enough tokens to buy a toy from the toyshop at the end of the circuit. The number of times children saved their tokens (i.e., placed them in a "bank") as they passed a "robber" and a "sweet shop" (where tokens could be stolen and spent, respectively) increased significantly with age. The largest age difference occurred between 6 and 9.

More recently, Otto, Schots, Westerman, and Webley (2006) extended this approach to examine the saving behaviors of a larger sample of school children. Interestingly, they did not find differences in saving between the ages of 6 and 11. However, the authors did report significant differences in the saving strategies used by younger and older children. Specifically, older children tended to maintain a reserve of tokens they could draw on if they encountered losses, while younger children tended to adopt the precautionary strategy of spending little or no tokens during the board game. Although these studies offer clever paradigms for assessing children's saving behavior, they do not provide insight into whether, when, or how saving emerges among younger children. With the exception of one study by Metcalf and Atance (2011) that we describe in detail later in the Introduction, the topic of saving remains largely absent from the developmental psychology literature.

However, the developmental literature has focused on two capacities that are arguably related to saving: episodic foresight and delay of gratification (DoG). Episodic foresight is defined as the capacity to mentally project oneself forward in time to anticipate future events (Suddendorf & Moore, 2011) and has become a topic of interest among developmental psychologists. Most research in this area has shown that 5-year-olds tend to perform better than 3-year-olds on tasks that tap the capacity to talk about the future (e.g., Busby & Suddendorf, 2005; Quon & Atance, 2010), make simple plans for the future (e.g., Atance & Meltzoff, 2005; Hudson, Shapiro, & Sosa, 1995), and select items for future use (e.g., Atance & Sommerville, 2014; Russell, Alexis, & Clayton, 2010). Performance differences between ages 3 and 4, and 4 and 5 are more mixed with some data, for example, showing no differences between ages 3 and 4 (e.g., Payne, Taylor, Hayne, & Scarf, 2015), and other data showing superior performance in 4-year-olds, compared to 3-year-olds (e.g., Suddendorf et al., 2011).

Improvements between ages 3 and 5, at least, also tend to characterize children's capacity to delay gratification. For example, Moore and colleagues (e.g., Lemmon & Moore, 2007; Moore, Barresi, & Thompson, 1998; Thompson, Barresi, & Moore, 1997) modified the traditional DoG paradigm (e.g., Mischel & Mischel, 1983) to assess whether children would wait to receive more stickers in the future versus fewer stickers in the present (thus displaying "future-oriented prudence"). They found that 4- and 5-year-olds preferred larger delayed rewards over smaller immediate rewards more often than 3-year-olds (although individual variability in children's performance on this type of task is often reported, e.g., Beck, Schaefer, Pang, & Carlson, 2011; Garon & Moore, 2007; Lemmon & Moore, 2001).

Nonetheless, there are important conceptual distinctions between saving and either episodic foresight or DoG. With respect to the former distinction, individuals may have the capacity to think about and envision themselves in the future (e.g., lying on the beach in Hawaii next winter), yet not necessarily to *save* for the future (e.g., setting aside funds to pay for the trip). As such, episodic foresight may be necessary but not sufficient for saving to develop. With respect to the latter distinction, whereas saving entails giving up a present reward in favor of a future reward or goal, delayed gratification (as measured by choice paradigms like the one described above) is best described as "postponement of consumption" (Stammerjohan & Webster, 2002). That is, children who delay on such tasks do not forego the initial reward (e.g., Mickey Mouse sticker) entirely, they simply have to wait to receive it along with the future reward (e.g., Mickey Mouse sticker and Donald Duck sticker) (Metcalf & Atance, 2011; Lee & Carslon, 2015). In contrast, saving involves foregoing activities we desire in the present (e.g., weekend trip to Toronto) in favor of a longer-term goal (e.g., saving for a trip to Hawaii). Importantly, unlike DoG, saving entails a series of choices made over time about how much of a resource to spend in the present and how much to save for the future. Thus, unlike in a DoG task in which children are presented with "all-or-nothing" choices between a smaller and a larger reward (with no in-between options available), saving requires an individual to allot a certain amount of resources (e.g., money) for now or for later in a more continuous fashion. Given these important differences, studying the emergence of saving in its own right is warranted.

To our knowledge, the only paradigm to measure saving in preschoolers was developed by Metcalf and Atance (2011). In their paradigm, 3-, 4-, and 5-year-olds were given three marbles and then told that they were going to spend 3 min in each of two rooms. The first room contained a little marble game and the second room contained a bigger, presumably more desirable, marble game. The games were "rigged" such that the marbles dropped into them could not be retrieved (i.e., each marble could only be used once). Of interest was whether children saved any marbles for use in the bigger game in the second room. Results revealed that the rate of saving was quite low (only 39% of children saved one or more marbles for the second room) and that older children did not save more marbles than younger children. Although the lack of an age

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات