Field Experiments on the Development of Time Preferences*

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Abstract

Time preferences have been correlated with a range of life outcomes, yet little is known about their early development. We conduct a field experiment to elicit time preferences of nearly 1,000 children ages 3-12, who make several intertemporal decisions. To shed light on how such primitives form, we explore various channels that might affect time preferences, from background characteristics to the causal impact of an early schooling program that we developed and operated. Our results suggest that time preferences evolve substantially during this period, with younger children displaying more impatience than older children. We also find a strong association with race: black children, relative to white or Hispanic children, are more impatient. Interestingly, parents of black children are also much more impatient than parents of white and Hispanic children. Finally, assignment to different schooling opportunities is not significantly associated with child time preferences.

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1. Introduction

The rate of time preference as elicited in the laboratory is strongly associated with a range of life outcomes, including health status, educational attainment, and labor market earnings (Golsteyn et al., 2014).[1] Among children and adolescents, higher rates of impatience have been linked to a greater number of disciplinary referrals at school, lower high school completion rates, and more money spent on alcohol and cigarettes (Castillo et al., 2011; 2015; Sutter et al., 2013). How temporal preferences form at an early age, and how they interact with the environment have direct policy implications. For instance, impatient children are more affected by incentives than their patient counterparts (Oswald and Backes-Gellner, 2014).[2] Yet, little is known about the development of time preferences of young children, including the role of environment in shaping these preferences.

Our contribution in this study includes an experiment conducted with both young children and their parents to explore the role of parents and schooling on the development of time preferences. We designed a time preference elicitation task in which children made a choice between receiving smaller amounts of candy at the end of the day versus larger amounts of candy on the next day. Families in our sample were randomized to either a free preschool program for the child, an incentivized parenting program for the parents, or to a control group for 1-2 years when the children were aged 3-5. We collected data on children's temporal preferences at several points in time, including after the intervention for a subset of families. Elicited time preferences were also collected on a subset of the same children's parents (mostly mothers).

[1] In related work among adults, time preferences predict health, smoking, drinking and drug abuse behaviors (Bradford et al., 2014; Chabris et al., 2008; Harrison et al., 2004; Khwaja et al., 2006; Weller et al., 2008), demand for medical screening tests or vaccines (Picone et al., 2004; Chapman and Coups, 1999) and take up financial education programs (Meier and Sprenger, 2013).

[2] In a related paper, Courtemanche et al. (2015) find that impatient adults are more sensitive to food price changes and exhibit the largest weight gain when food prices fall.

Our field experiment coupled with our educational intervention represents multiple innovations. First, we implement an experimental protocol to elicit the time preferences of very young children, some as young as age 3. Second, the households in our sample come from the Chicago Heights Early Childhood Center (CHECC), an early education field experiment conducted in Chicago Heights, IL, a low-income suburb of Chicago, IL (Fryer et al., 2015). The use of this unique sample allows us to explore the causal impact of early childhood educational programs on time preferences. Third, the households in our sample are generally of low socio-economic status (SES). Understanding how time preferences form may be even more important among low SES children, since they are the ones most likely to exhibit impatience (Deckers et al., 2013; Shildbert-Horisch et al., 2014), and may therefore benefit the most from policy interventions. Finally, our data collection with children and their parents allows us to investigate the extent of inter-generational transfer of time preferences at a young age.

We find that time preferences evolve significantly during this period, with younger children displaying more impatient preferences than older children. We also find a strong association with race: black children are significantly more impatient relative to white or Hispanic children. Interestingly, parents of black children are also more impatient than parents of white and Hispanic children. As a whole, it appears that black households exhibit more impatience, which is already apparent in young children. This is a finding of great policy relevance, since research shows a gap between graduation rates between blacks and non-blacks (Heckman and LaFontaine, 2010). Part of this gap could be explained by future orientation, which we find also has a racial basis. Also of import is that parental preferences and assignment to different schooling opportunities are not significantly associated with our measures of child time preferences. The fact that our early interventions, which were quite broad based, did not

lead to durable changes in time preferences suggests that such preferences may be difficult to change with programs for 3-5 year olds.

In what follows, Section 2 provides a discussion of related literature. Section 3 describes the experimental design. Section 4 summarizes our results, and Section 5 concludes.

2. Related Literature

Our work is most closely related to the nascent literature on preference formation, which has proceeded by conducting experiments with young children. Related work has found that children from families with higher socio-economic status (SES) or higher quality of early childhood home environment tend to exhibit more patient preferences (Deckers et al., 2013; Shildbert-Horisch et al., 2014; Falk and Kosse, 2016). And, Castillo et al. (2011) found that black adolescents tend to be more impatient than non-black adolescents.

Related work has also explored intergenerational transfer of time preferences, which has found mixed results. Kosse and Pfeiffer (2012; 2013) conducted a delay of gratification task with preschool-age children, and a time elicitation task with their parents. The authors found that the impatience of mothers and their children was correlated (Kosse and Pfeiffer, 2012) and that present bias of mothers was also correlated with their child's level of impatience (Kosse and Pfeiffer, 2013). Researchers also found some support for a link between future orientation of parents and young adult children (Webley and Nyhus, 2006; Brown and Van der Pol, 2015). On the other hand, Bettinger and Slonim (2006) found no association between the time preferences of 5-16 year-old children and their parents.

Two notable exceptions to correlational work are field experiments by Alan and Ertac (2014) and Luhrmann et al. (2014). Alan and Ertac (2014) found that for children in grades 3 and

4, random assignment to a program aimed at helping children imagine their future selves increased patience relative to children assigned to a control group. Luhrmann et al. (2014) found that random assignment to a high-school financial education program increased time consistency relative to children assigned to a control group. Unlike these studies, our early childhood interventions do not focus specifically on time preferences and are broader in scope. Moreover, we explore time preference development in very early childhood, which is a critical period of non-cognitive skill development (Heckman et al., 2000).

Our work is also related to a literature that explores the link between family environment and preference formation more generally. For example, research has found correlations of social preferences with SES (Bauer et al., 2014) and some evidence for the inter-generational transfer of social preferences between parents and children (Ben-Ner et al., 2015). This strand of literature also includes research on the formation of risk preferences, showing an effect of environment (Eckel et al., 2011), SES (Deckers et al., 2013), and parental preferences (Alan et al., 2014; Dohmen et al., 2011). Finally, Dohmen et al. (2011) find that willingness to trust behavior is correlated between parents and children, Almas et al. (2015) find that family background explains differences in willingness to compete, and Khadjavi and Nicklisch (2014) who find that parental ambitions affect a child's willingness to compete.

Finally, we are the first to explore the development of time preferences from the early age of 3 through early adolescence. While a number of studies have considered the time preferences at one point in time, such as adolescence (Castillo et al., Sutter et al., 2013) or preschool (Kosse and Pfeiffer, 2012; 2013; Lemmon and Moore, 2007) no papers that we are aware of have spanned the years of development that we focus on here.

3. Experiment Design

3.1 Chicago Heights Early Childhood Center

Our participants were recruited from the Chicago Heights Early Childhood Center (CHECC) program.[3] CHECC is a large-scale intervention study on the role of different early education programs on schooling outcomes of disadvantaged children conducted in 2010-2014 (Fryer et al., 2015). Households who participated in CHECC originated from the surrounding area of Chicago Heights, Illinois. Chicago Heights is an ethnically diverse (41% African American, 34% Hispanic) and generally low-income area (29% of persons below poverty level, $18,121 per capita money income).[4]

The main goal of CHECC was to investigate the role of early childhood programs on educational attainment; therefore, households who signed up for the program were randomized each year into one of several different treatment arms or to a control group. Treatments included a free, full-day preschool program for 1-2 years, a bi-monthly parenting class in which parents received incentives based on their and their child's performance on homework and assessments, a preschool with parenting component, or a control group.

All households completed a questionnaire when signing up for CHECC, which included questions about child gender and race as well as household income and parent educational attainment. We use these data as controls in our analysis.

3.2 Time Preference Experiments

To participate, families brought their children to the CHECC center on a weeknight or weekend. Participants did not know what the experiments were about when they signed up, and

[3] CHECC was called the Griffin Early Childhood Center (GECC) between 2010 and 2012, and was renamed to CHECC in 2012.
[4] Data from the United States Census http://quickfacts.census.gov/qfd/states/17/1714026.html

participation was voluntary. Participation took approximately 30 minutes and parents received approximately $25 for their participation. We conducted sessions in 2010-11, 2012 and 2013, which differed somewhat in their implementation. Most children participated only once. To investigate the impact of early education programs on time preferences, we use data from the 2012 and 2013 sessions since these were conducted after a sub-set of the children had the chance to participate in CHECC education programs. To investigate inter-generational transfer of preferences, we use data from a time preference elicitation task conducted with parents during the 2012 session.

The basic experimental design of the time preference elicitation task followed a multiple-price list format with 3-4 decisions (Coller and Williams, 1999). Children made a series of decisions in which they were asked to choose between a smaller amount of candy on the day of the experiment at the end of the day ("at the end of the day TODAY"), and a larger amount of candy on the day after the experiment ("at the end of the day TOMORROW"). Only one of the decisions "counted" for payment, and this was randomly selected at the end of the experiment.[5] Candies from the relevant decision for payment were placed in paper bags with the date of payment on them and were given to the child's parents with a note providing instructions for when to give the child the candies. We also verbally explained to parents when to give the candies to the child.[6] Table 1 summarizes the series of decisions in each experimental session.

[5] For children ages 3-5, the random selection was done in the following way. Children were told that at the end of the session, one of their decisions would be selected at random as the 'decision that counts.' The 'decision that counts' was selected by having the child close his or her eyes and select one of X containers in the bin, each of which held the candy and time for the candy to be given to the child for one of the decisions. For children ages 6-12, the random selection was done via bingo cage at the front of the experiment room.

[6] The potential for parents to not follow through on the experimental timing, and the child's expectation thereof, presents a potential confound in our study. If parents are likely to give their children the candy as soon as possible, children should choose the most candy possible and, hence, appear quite patient in our study. This prediction is in contrast to aggregate behavior, which exhibits substantial impatience.

This time preference elicitation methodology is similar to that used with adults in experimental economics, and is in line with related work in developmental psychology that uses children as young as age 2-3 to study future orientation (Schwarz et al., 1983; Lemmon and Moore, 2007; Garon et al., 2012). For younger children (ages 3-7), the experiment was conducted one-on-one with a trained experimenter and each decision was accompanied by physical containers holding the number of candies that would be earned by the child for each alternative. For older children (ages 6-12), the experiment was conducted in small groups and children circled pictures of candies on their record sheets in private while experimenters walked around to assist. The age overlap in procedures allows us to control for differences in implementation approach.

We complement this experiment with an alternative measure of child impatience, the delay of gratification paradigm or 'marshmallow task' (Mischel et al., 1972; Mischel and Moore, 1973). In this experiment, children ages 3-7 are seated in front of a treat and are offered the option to either eat the treat, or wait for various lengths of time in order to receive double the amount. This paradigm is commonly used in the developmental psychology literature (e.g., Karniol et al., 2011) and was also used by Kosse and Pfeiffer (2012, 2013) to study intergenerational transfer of impatience from mothers to their preschool-aged children. While the time preference elicitation helps us understand how children trade off sooner and later rewards, the delay of gratification paradigm also measures a child's ability to wait for a reward.

The parent experiment included 16 decisions from two multiple-price lists, where parents chose between amounts of $6 to $20 earlier versus $20 later. For the first 8 decisions the earlier time was today and the later time was 5 weeks from today, and for the remaining 8 decisions the earlier time was 5 weeks from today and the later time was 10 weeks from today.

4. Results

4.1 Summary of Data

We have a total of 1,015 observations of child time preferences. 767 children participated in total, and 124 children participated in two different sessions.[7] Figure 1 provides a histogram of the proportion of patient decisions (giving up fewer candies today to choose more candies tomorrow) made by each child across all sessions. It is notable that a large proportion (40.6%) of children always select the earlier, smaller reward while a small proportion (10.8%) always select the later, larger reward. We also find that a sizable fraction of the children who exhibit non-monotonicities in their choices, preferring a larger later number of candies to a smaller sooner number, and subsequently preferring an even smaller sooner number of candies to the aforementioned later larger number. While the overall proportion of children displaying such non-monotonicities is 32.9%, 67.4% of the 488 children who are not always impatient or always patient are non-monotonic. Despite the high frequency of non-monotonicities, we do observe that in the aggregate children are more likely to be patient when the cost of being impatient is high (i.e., when the difference between the earlier and later rewards is largest), a finding that is also observed in Lemmon and Moore (2007) for children aged 4-5.

Figure 2 provides the average proportion of patient decisions, by session and decision number. As displayed in Figure 3, we also observe an upward trend in both patient decisions and consistency with age, with younger children displaying less patient and more non-monotonic decisions relative to older children.[8]

[7] Demographic data is available for nearly all observations. Age is available for all observations. Gender is available for all but 7 observations (6 children), and race is available for all but 3 observations (3 children).

[8] The standard errors in the proportion patient are largest at the extremes of our age range. The standard errors are smaller in the center of the age distribution, where we see a clear positive relationship between age and patience that is statistically significant in regression analyses.

Since the structure of the data from the children will not allow us to calculate or estimate a conventionally meaningful discount rate, we use two non-parametric measures of time preference. The first measure is the total number of patient decisions (standardized by session). The second measure is a binary variable indicating whether a child is always impatient or not.

4.2 Determinants of Child Time Preferences

We consider associations between child demographic and socio-economic characteristics on child time preferences. Tables 2 and 3 provide summary statistics for the children and households of the children in the sample. The average age of the children at the time of the experiment was 5.08 years old, with a minimum age of 3.18 and a maximum age of 11.9. About half the children were girls (51.5%). In line with the population of Chicago Heights, IL, our sample is highly diverse, with 39.9% black children and 48.4% Hispanic children. The households are relatively low income: 36.5% of children come from a household with an annual income of $0-$15,000 and 35.2% come from a household with an annual income of $16,000-$35,000. 19.5% of the children's mothers do not have a high school diploma, while 50.2% have a high school diploma or some college education and 29.1% have a college degree.

Tables 4 and 5 provide regressions with proportion of patient decisions (standardized by session) and immediate choices (binary) as dependent variables, respectively, using all the observations and clustering at the individual level. Child age has a positive and significant correlation with patience (see nearly all specifications in Tables 4 and 5). Child race also plays a statistically significant role in the level of patience. Black children make a higher proportion of impatient decisions and are more likely to make all impatient decisions relative to white non-Hispanic children (see all specifications in Table 4 and specifications 1-2 in Table 5). Post-

estimation tests also reveal that black children are significantly more impatient than Hispanic children (most p-values<0.05, see Tables 4-5). These results are robust to alternative specifications, including using only the child's first decision (see Appendix). Our finding that black children are more impatient is in line with Castillo et al. (2011), who find among 13-14 year-old children, black children are more impatient than non-black children. Our sample includes children of ages 3-12, showing that this heterogeneity appears at even younger ages. We also find suggestive evidence that boys are more impatient than girls (also observed in Castillo et al., 2011, and Bettinger and Slonim, 2007), but this finding is not robust across different specifications of the analysis.

We next explore whether household characteristics, including SES and parent time preferences, are associated with child time preferences. Specification (3) and Specification (4) in Tables 4 and 5 add in household income, mother's educational attainment and parent time preference controls. Since only a sub-set of parents completed the voluntary questionnaire on socio-economic status (during CHECC registration), and a different (smaller) sub-set participated in the voluntary time preference experiments, we consider both variables in separate regressions. A total of 272 adult caregivers completed the parent preference elicitation tasks. Using the original CHECC registration data, we identified 195 (71.7%) as the mother, 32 (11.8%) as the father, and 45 (16.5%) as unknown. In case of households that had multiple parents participating, we averaged the time preferences of both caregivers for the analysis. For parent time preferences, we simply calculate the proportion of patient decisions out of 16. Neither SES nor parent time preferences are strongly associated with child time preferences.

Finally, we consider whether random assignment to preschool or parenting programs affected the child's time preferences measured after program completion. Here, we again only

have a small and selected sample since only 423 children completed the tasks after having the chance to participate in a CHECC program. Again, we do not see a strong association with randomization to one of the programs on child time preferences, suggesting that perhaps time preferences are difficult to influence through general education programs such as ours. Participation in the time preference tasks was completely voluntary. Hence, we only observe about 1/5th of the children who were in the overall CHECC program. Future work should attempt to test all of the children to conclusively rule out changes to time preferences.

Tables 4-5 imply 5 different hypotheses are being tested, i.e., that risk preferences evolve with age, and may differ when comparing boys and girls, black and white children, black and Hispanic children, and Hispanic and white children. It is thus important to adjust for the family-wise error rate (e.g., see List et al., 2016). Holm-Bonferroni *p*-value correction yields continued statistical significance for the comparisons of black and Hispanic children in both Tables 4 and 5 for all specifications. The association of age with time preferences continues to be significant in Table 5 but not in Table 4. The comparison of black with white children is no longer statistically significant, which could be attributed to the relatively lower sample size of white non-Hispanic children.[9]

4.3 Robustness check

Next, we explore the robustness of our results using data collected from the delay of gratification paradigm. The children completing this experiment were all younger than children completing the time preference elicitation, since it is designed for younger children (mean age=

[9] The Bonferroni procedure involves dividing 0.05 by the number of tests (5) and then comparing each calculated *p*-value to the new *p*-value of 0.01. The Bonferroni-Holm procedure is sequential and compares the rank of each *p*-value to 0.05/(5-rank+1). Both procedures yield qualitatively similar results in our case.

4.8, min of 3.2 and max of 7.6). In different sessions, we gave children either 5, 8 or 15 minutes wait time before the experimenter returned and doubled their treat.

In Table 6, we report on regressions that use the total number of seconds waited as a dependent variable, setting all wait times to 5 minutes for children who waited longer in sessions where it was feasible. Again, we do not observe a statistically significant association between parent time preferences and randomization to early schooling with child patience as measured by this experiment. We also find some indication that being older is associated with longer wait times, but the result is not statistically significant. Finally, we find suggestive evidence that black children are more impatient (have shorter wait times) than white or Hispanic children, but again the results are not statistically significant (the only statistically significant result Is in Column 4, but it does not survive multiple hypothesis testing correction).

4.4 Interpretation

Interestingly, we also observe an association between patience and race. We next investigate whether differences in household SES or parent time preferences contribute to this relationship. In Table 7, we provide summary statistics for demographics and SES for our sample broken down by race. There are no statistically significant differences in child age and gender by race. Black children are similar to Hispanic children on the basis of household income, and look similar to white children on the basis of mother's educational attainment. Hence, differences in SES may not explain our results.

There is some indication that the differences in preferences among children are explained by differences among their parents. To dig deeper into this, we turn to determinants of parent preferences. In Table 8, we use our full sample of parents to regress demographic and socio-

economic characteristics on parent preferences. Here we observe a similar pattern to the child data – parents of black children are statistically significantly more impatient than parents of white or Hispanic children. However, when adjusting for the family-wise error rate (3 hypotheses, comparing each race), the result is no longer statistically significant. We conclude that this data is suggestive of a possibility that parents of black children exhibit more impatience than parents of the non-blacks, which is apparent in the preferences of children at the ages of 3-12.[10]

5. Conclusion

While time preferences are associated with a range of life outcomes, including educational attainment, health, and financial capability, little is known about the determinants of time preference development as children mature. We conducted experiments with nearly 1,000 children of ages 3-12 to investigate the development of time preferences and explore how household characteristics, parent preferences and early schooling shape these early time preferences.

We found that time preferences evolve significantly during ages 3-12, with younger children displaying more impatient preferences than older children. We also found a strong and significant association with race: black children, relative to white or Hispanic children, are significantly more impatient. Interestingly, assignment to different schooling opportunities are not significantly associated with our measures of child time preferences, but parents of black children are also more impatient than parents of white and Hispanic children. More work is

[10] The race of the parent is unknown, since we did not explicitly ask parents to identify their own race in the study.

needed to understand the emergence of these observed racial differences, which are present at an early age.

There are certain limitations within our data. First, it is unclear whether parent preferences are uncorrelated with child preferences, whether the measures that we use are the most appropriate for observing this correlation, or whether the preferences of children are simply difficult to measure. Our results are in line with Bettinger and Slonim (2006) who also found no correlation between adolescent and parent time preferences, but are at odds with Kosse and Pfeiffer (2012; 2013). Notably, we found no association in parent and child time preference using two different measures of time preferences: the standard economic time preference elicitation task, and the delay of gratification paradigm. We also found no association when constraining our sample to mothers only, as Kosse and Pfeiffer (2012; 2013) do. An interesting extension would be to systematically use alternative tests of parent preferences, such as a qualitative question with parents, to see if differences in methodology can partly explain the mixed findings in this literature.

Second, because our experiment was not designed to disentangle the causal impact of schooling on child time preferences, we only see a sub-set of children in our data who were also part of the CHECC randomization. Hence, while we do not see statistically significant differences in time preferences by treatment assignment, this could be due to a small sample size or due to sample selection. For instance, suppose that random assignment to a CHECC treatment group does causally affect child time preferences, but there is differential attendance at the experimental sessions based on child level of impatience, such that parents of more impatient control group children are less likely to attend than parents of more impatient treatment group children. Such a story would undermine our ability to find treatment effects. Future work should

consider collecting time preference data on a full sample of children from an early childhood intervention, such as CHECC, to determine conclusively whether the program affected time preferences. Such a project is beyond our current capabilities.

Finally, another possibility is that early childhood education treatments are causally related to making mistakes in the decision task, which could result in inconsistent decisions. However, when we re-run Specification (4) from Tables 4-5 with a 0/1 measure for "consistency" as the dependent variable (not reported), we do not observe statistically significant coefficients on CHECC treatment assignment.

Taken together, our results suggest racial patterns of patience that emerge from a very young age and appear to persist. A deeper understanding of the determinants of these differences and the extent to which they can be influenced by intervention are important topics for future research.

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Tables

Table 1: Child Experiment Design

Session	Observations	Elicitation task (Candies today versus candies tomorrow)
2010-11	276	4 versus 5, 4 versus 6, 4 versus 7, 4 versus 8
2012	287	3 versus 2, 2 versus 3, 1 versus 3
2013	452	2 versus 3, 2 versus 4, 2 versus 5, 2 versus 6
Total	1,015	

Notes: The table reports the experiment design for the child experiments and number of observations, broken down by session.

Table 2: Child Summary Characteristics

Child Age (in Years)	5.075
	(0.0478)
Child Gender (Female=1)	0.515
	(0.0168)
Child Race - Black	0.399
	(0.0165)
Child Race - Hispanic	0.484
	(0.0168)
Child Race - Other	0.00794
	(0.00299)
Observations	882

Notes: The table reports sample averages, using only the child's first observation in time if two observations are available. Six children are missing gender information and three children are missing race information. Standard errors are in parentheses.

Table 3: Household Summary Characteristics

Household income (0-15k)	0.365
	(0.0193)
Household income (16k-35k)	0.352
	(0.0191)
Household income (36k-60k)	0.157
	(0.0146)
Household income (60k+)	0.126
	(0.0133)
Mother Education (Less than High School)	0.195
	(0.0159)
Mother Education (High School)	0.502
	(0.0200)
Mother Education (College)	0.291
	(0.0182)
Observations	625

Notes: The table reports sample averages. Standard errors are in parentheses.

Table 4: Regressions Estimates of Child Time Preference

	(1)	(2)	(3)	(4)
	Time Pref.	Time Pref.	Time Pref.	Time Pref.
Child Age (in Years)	0.05**	0.06**	0.11***	0.01
	(0.02)	(0.02)	(0.04)	(0.06)
Child Gender (Female=1)	0.03	0.03	0.19*	0.09
	(0.06)	(0.06)	(0.10)	(0.09)
Child Race - Black	-0.22**	-0.24**	-0.34*	-0.34**
	(0.11)	(0.11)	(0.18)	(0.16)
Child Race - Hispanic	-0.01	-0.02	-0.14	-0.11
	(0.11)	(0.11)	(0.18)	(0.16)
Child Race - Other	-0.08	-0.12	0.42	0.16
	(0.45)	(0.43)	(0.69)	(0.57)
Household income (16k-35k)		-0.05		
		(0.09)		
Household income (36k-60k)		-0.14		
		(0.12)		
Household income (60k+)		-0.05		
		(0.14)		
Mother Edu (High School)		-0.01		
		(0.09)		
Mother Edu (College)		0.05		
		(0.12)		
SES Missing		-0.02		
		(0.10)		
Parent Time Preference			0.17	
			(0.18)	
Parent Academy Dummy				-0.02
				(0.12)
Preschool Dummy				0.08
				(0.10)
Constant	-0.33*	-0.29	-0.63*	0.03
	(0.18)	(0.20)	(0.33)	(0.37)
H_0: Black = Hispanic (p-value)	< 0.01	< 0.01	0.06	0.01
R^2	0.02	0.02	0.05	0.02
N	1005	1005	416	523

Notes: The table reports ordinary least squares regressions with the proportion of child patient decisions as the outcome variable. Omitted categories include, all specifications: child race, white; specification 2) household income below 16k, mother's educational attainment below High School, and 4) CHECC control group. Includes session controls. Standard errors clustered at the child level. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table 5: Regressions Estimates of Child Choosing "Always Now"

	(1)	(2)	(3)	(4)
	Always now	Always now	Always now	Always now
Child Age (in Years)	-0.03***	-0.03***	-0.06***	-0.05*
	(0.01)	(0.01)	(0.02)	(0.03)
Child Gender (Female=1)	-0.04	-0.04	-0.09*	-0.04
	(0.03)	(0.03)	(0.05)	(0.04)
Child Race - Black	0.11**	0.11**	0.11	0.09
	(0.05)	(0.05)	(0.07)	(0.07)
Child Race - Hispanic	-0.01	-0.01	-0.03	-0.05
	(0.05)	(0.05)	(0.07)	(0.07)
Child Race - Other	0.08	0.09	-0.16	-0.07
	(0.17)	(0.17)	(0.14)	(0.22)
Household income (16k-35k)		-0.03		
		(0.04)		
Household income (36k-60k)		0.07		
		(0.06)		
Household income (60k+)		-0.04		
		(0.07)		
Mother Edu (High School)		0.07*		
		(0.04)		
Mother Edu (College)		0.02		
		(0.06)		
SES Missing		0.03		
		(0.05)		
Parent Time Preference			-0.04	
			(0.09)	
Parent Academy Dummy				< 0.01
				(0.06)
Preschool Dummy				-0.04
				(0.05)
Constant	0.50***	0.45***	0.80***	0.68***
	(0.08)	(0.10)	(0.14)	(0.18)
H_0: Black = Hispanic (p-value)	< 0.01	< 0.01	0.01	< 0.01
R^2	0.04	0.05	0.07	0.04
N	1005	1005	416	523

Notes: The table reports ordinary least squares regressions with a child who always selected the impatient choice as the outcome (always impatient=1, 0 o.w.). Omitted categories include, all specifications: child race, white; specification 2) household income below 16k, mother's educational attainment below High School, and 4) CHECC control group. Includes session controls. Standard errors clustered at the child level. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table 6: Robustness Check with Delay of Gratification Paradigm

	(1)	(2)	(3)	(4)
	Wait Time	Wait Time	Wait Time	Wait Time
Child Age (in Years)	6.53	7.05	9.95	4.18
	(5.29)	(5.36)	(9.33)	(8.42)
Child Gender (Female=1)	3.43	3.39	-18.05	-1.20
	(8.39)	(8.44)	(13.72)	(11.48)
Child Race - Black	-19.80	-20.66	-23.04	-37.69**
	(13.68)	(13.63)	(22.63)	(18.14)
Child Race - Hispanic	-12.67	-12.13	7.79	-28.61
	(13.56)	(13.65)	(22.67)	(17.97)
Child Race - Other	-28.43	-37.17	-27.52	-87.85*
	(46.11)	(47.13)	(49.93)	(50.06)
Hh. income (16k-35k)		10.02		
		(11.67)		
Hh. income (36k-60k)		-1.65		
		(16.12)		
Hh. income (60k+)		-10.48		
		(18.41)		
Mother Edu (High School)		2.02		
		(12.34)		
Mother Edu (College)		18.75		
		(14.91)		
SES Missing		20.20		
		(13.25)		
Parent Time Preference			4.35	
			(22.62)	
Parent Academy Dummy				4.73
				(16.99)
Preschool Dummy				1.92
				(13.08)
Constant	216.22***	202.12***	195.95***	211.79***
	(27.87)	(30.74)	(49.30)	(47.84)
H_0: Black = Hispanic (p-value)	0.43	0.36	0.04	0.46
R^2	0.02	0.02	0.02	0.01
N	875	875	354	492

Notes: The table reports ordinary least squares regressions with the number of seconds spent waiting for the marshmallow as the outcome. Omitted categories include, all specifications: child race, white; specification 2) household income below 16k, mother's educational attainment below High School, and 4) CHECC control group. Includes session controls. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table 7: Characteristics Associated with Race

	Black	Hispanic	White	Total
Child Age (in Years)	5.393	5.340	5.726	5.411
	(0.129)	(0.137)	(0.320)	(0.0911)
Child Gender (Female=1)	0.462	0.495	0.556	0.485
	(0.0463)	(0.0527)	(0.0975)	(0.0327)
Hh. income (0-15k)	0.419	0.374	0.148	0.370
	(0.0458)	(0.0510)	(0.0697)	(0.0316)
Hh. income (16k-35k)	0.239	0.407	0.222	0.302
	(0.0396)	(0.0518)	(0.0815)	(0.0300)
Hh. income (36k-60k)	0.171	0.143	0.370	0.183
	(0.0350)	(0.0369)	(0.0947)	(0.0253)
Hh. income (60k+)	0.171	0.0769	0.259	0.145
	(0.0350)	(0.0281)	(0.0859)	(0.0230)
Mother Education (Less than High School)	0.0427	0.286	0.0741	0.140
	(0.0188)	(0.0476)	(0.0514)	(0.0227)
Mother Education (High School)	0.564	0.505	0.333	0.515
	(0.0460)	(0.0527)	(0.0925)	(0.0327)
Mother Education (College)	0.393	0.209	0.593	0.345
	(0.0454)	(0.0428)	(0.0964)	(0.0311)
Parent Time Preference	0.544	0.601	0.666	0.580
	(0.0250)	(0.0286)	(0.0465)	(0.0176)

Notes: Group means with standard errors in parentheses.

Table 8: Parent Time Preferences

	(1)	(2)
	Parent Time Preference	Parent Time Preference
Child Race - Black	-0.10**	-0.11**
	(0.05)	(0.05)
Child Race - Hispanic	-0.05	-0.03
	(0.05)	(0.05)
Child Race - Other	-0.07	-0.15
	(0.21)	(0.18)
Mom (= 1 if mom, = 0 otherwise)	0.12**	0.11**
	(0.05)	(0.05)
Mother Education (High School)		0.06
		(0.05)
Mother Education (College)		0.14**
		(0.06)
Household income (16k-35k)		-0.07
		(0.05)
Household income (36k-60k)		-0.10
		(0.06)
Household income (60k+)		-0.01
		(0.08)
SES Missing		0.04
		(0.05)
Constant	0.54***	0.51***
	(0.06)	(0.07)
H_0: Black = Hispanic (p-value)	0.15	0.04
R^2	0.04	0.08
N	245	245

Notes: The table reports ordinary least squares regressions with the parent proportion of patient decisions as the outcome variable. Omitted categories include, for all specifications: child race, white; specification 2) household income below 16k, mother's education below High School. Includes session controls. $^{**}p < 0.05$, and $^{***}p < 0.01$.

Figures

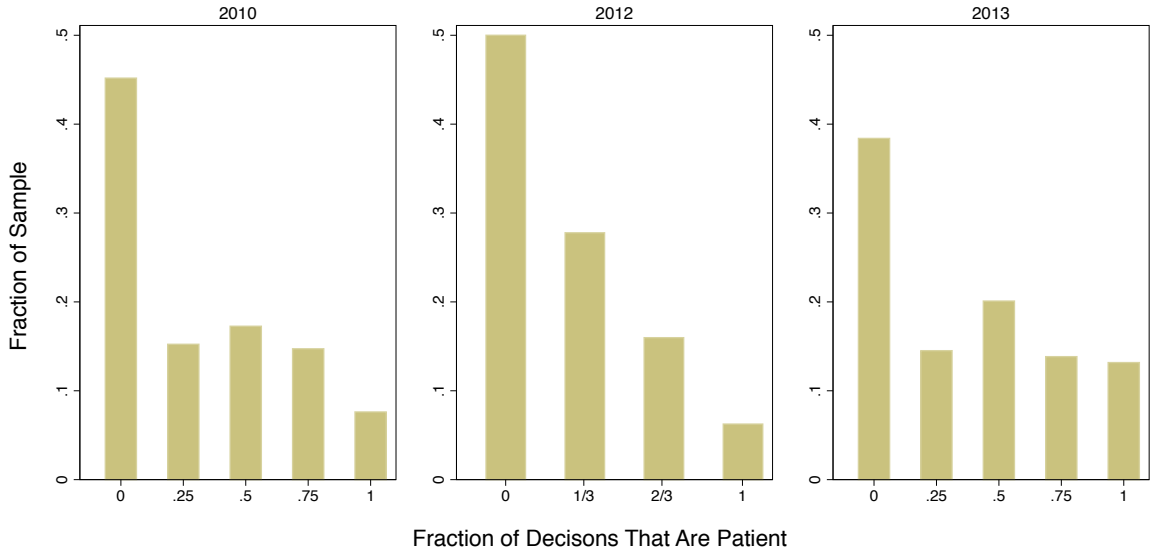


Figure 1: Histograms of Child Patience by Session

Note: This figure shows a histogram of proportion of child patient decisions, separately for each session. Notice that there were 4 questions in 2010, 3 questions in 2012 and 5 questions in 2012. Incomplete responders are excluded from these graphs.

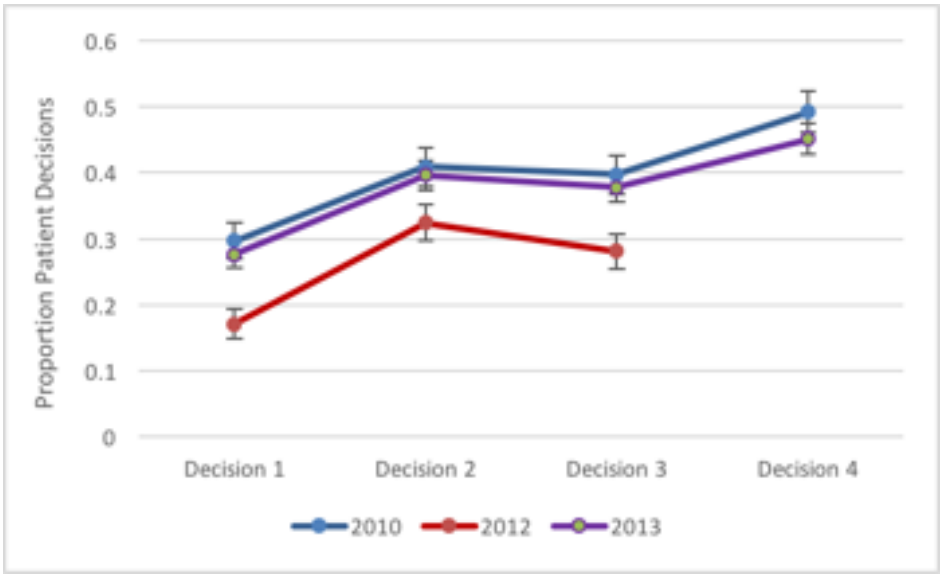


Figure 2: Proportion of Patient Decisions, by Decision Number and Session

Note: This figure shows the proportion of patient decisions in the data, by decision number and session. Higher decision numbers indicate larger difference between earlier and later reward (where later reward is always larger). Includes standard error bars.

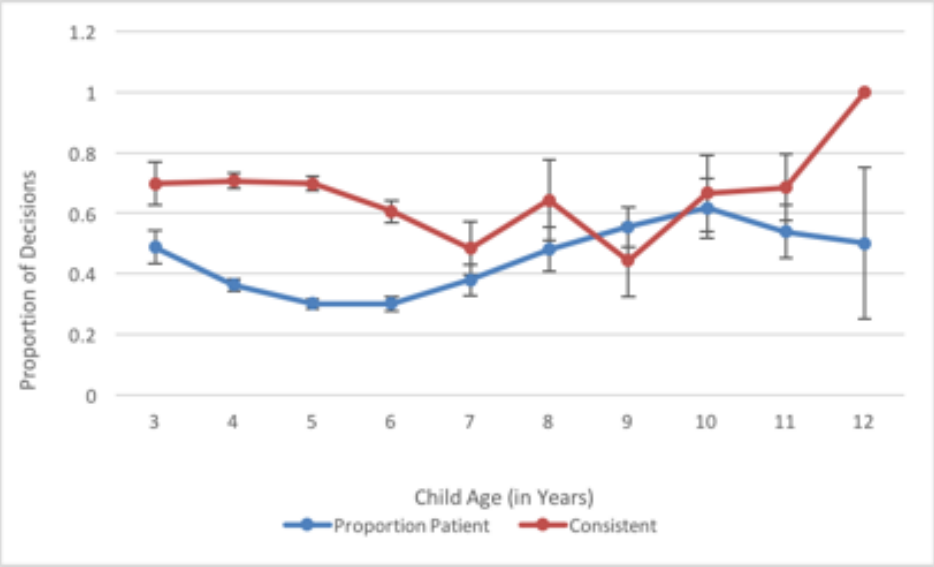


Figure 3: Proportion of Patient and Monotonic Decisions, by Child Age

Note: This figure shows the proportion of patient decisions and monotonic decisions, by child age. Includes standard error bars.

Appendix Tables

Table A1: First Observation Only: Child Time Preference

	(1)	(2)	(3)	(4)
	Time Pref.	Time Pref.	Time Pref.	Time Pref.
Child Age (in Years)	0.05**	0.05**	0.12***	0.06
	(0.02)	(0.02)	(0.04)	(0.08)
Child Gender (Female=1)	-0.01	-0.00	0.09	0.00
	(0.07)	(0.07)	(0.11)	(0.10)
Child Race - Black	-0.19*	-0.20*	-0.27	-0.29*
	(0.11)	(0.12)	(0.19)	(0.17)
Child Race - Hispanic	0.02	0.04	-0.04	-0.04
	(0.11)	(0.12)	(0.19)	(0.17)
Child Race - Other	-0.41	-0.44	-0.14	-0.26
	(0.39)	(0.39)	(0.73)	(0.51)
Household income (16k-35k)		-0.06		
		(0.09)		
Household income (36k-60k)		-0.15		
		(0.13)		
Household income (60k+)		0.02		
		(0.15)		
Mother Edu (High School)		0.03		
		(0.10)		
Mother Edu (College)		0.08		
		(0.13)		
SES Missing		-0.01		
		(0.11)		
Parent Time Preference			0.17	
			(0.21)	
Parent Academy Dummy				-0.04
				(0.14)
Preschool Dummy				0.07
				(0.11)
Constant	-0.36***	-0.35*	-0.77***	-0.26
	(0.18)	(0.21)	(0.35)	(0.43)
H_0: Black = Hispanic (p-value)	0.18	0.16	0.39	0.30
R^2	0.02	0.02	0.05	0.02
N	882	882	313	423

Notes: The table reports ordinary least squares regressions with the proportion of child patient decisions as the outcome variable. Omitted categories include, all specifications: child race, white; specification 2) household income below 16k, mother's educational attainment below High School, and 4) CHECC control group. Includes session controls. Only the first observation of child time preference is used. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table A2: First Observation Only: Child Choosing "Always Now"

	(1)	(2)	(3)	(4)
	Always now	Always now	Always now	Always now
Child Age (in Years)	-0.03***	-0.03**	-0.08***	-0.08**
	(0.01)	(0.01)	(0.02)	(0.04)
Child Gender (Female=1)	-0.02	-0.02	-0.05	-0.00
	(0.03)	(0.03)	(0.06)	(0.05)
Child Race - Black	0.11**	0.10*	0.11	0.10
	(0.06)	(0.06)	(0.09)	(0.08)
Child Race - Hispanic	0.00	-0.00	-0.01	-0.04
	(0.05)	(0.06)	(0.09)	(0.08)
Child Race - Other	0.24	0.23	0.14	0.14
	(0.19)	(0.19)	(0.35)	(0.26)
Household income (16k-35k)		-0.03		
		(0.05)		
Household income (36k-60k)		0.04		
		(0.06)		
Household income (60k+)		-0.07		
		(0.07)		
Mother Edu (High School)		0.06		
		(0.05)		
Mother Edu (College)		0.01		
		(0.06)		
SES Missing		0.04		
		(0.05)		
Parent Time Preference			-0.05	
			(0.10)	
Parent Academy Dummy				0.02
				(0.07)
Preschool Dummy				-0.06
				(0.06)
Constant	0.51***	0.47***	0.85***	0.79***
	(0.09)	(0.10)	(0.17)	(0.22)
H_0: Black = Hispanic (p-value)	0.16	0.24	0.35	0.22
R^2	0.04	0.05	0.09	0.05
N	882	882	313	423

Notes: The table reports ordinary least squares regressions with a child who always selected the impatient choice as the outcome (always impatient=1, 0 o.w.). Omitted categories include, all specifications: child race, white; specification 2) household income below 16k, mother's educational attainment below High School, and 4) CHECC control group. Includes session controls. Only the first observation of child time preference is used. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table A3: First Observation Only, Moms Only: Child Time Preference

	(1)	(2)	(3)	(4)
	Time Pref.	Time Pref.	Time Pref.	Time Pref.
Child Age (in Years)	0.06**	0.06**	0.11**	0.06
	(0.02)	(0.02)	(0.05)	(0.08)
Child Gender (Female=1)	-0.01	-0.01	0.16	0.00
	(0.07)	(0.07)	(0.13)	(0.10)
Child Race - Black	-0.18	-0.19	-0.22	-0.29*
	(0.11)	(0.12)	(0.21)	(0.17)
Child Race - Hispanic	0.02	0.03	0.03	-0.04
	(0.11)	(0.12)	(0.21)	(0.17)
Child Race - Other	-0.41	-0.44	-0.08	-0.26
	(0.39)	(0.39)	(0.75)	(0.51)
Household income (16k-35k)		-0.06		
		(0.09)		
Household income (36k-60k)		-0.13		
		(0.13)		
Household income (60k+)		-0.01		
		(0.15)		
Mother Edu (High School)		0.03		
		(0.10)		
Mother Edu (College)		0.09		
		(0.13)		
SES Missing		-0.00		
		(0.11)		
Parent Time Preference			0.21	
			(0.25)	
Parent Academy Dummy				-0.04
				(0.14)
Preschool Dummy				0.07
				(0.11)
Constant	-0.37**	-0.37*	-0.83**	-0.26
	(0.18)	(0.21)	(0.38)	(0.43)
H_0: Black = Hispanic (p-value)	0.20	0.19	0.40	0.30
R^2	0.02	0.02	0.05	0.02
N	882	882	313	423

Notes: The table reports ordinary least squares regressions with the proportion of child patient decisions as the outcome variable. Omitted categories include, all specifications: child race, white; specification 2) household income below 16k, mother's educational attainment below High School, and 4) CHECC control group. Includes session controls. Only the first observation of child time preference is used. Only mothers' time preferences are used. $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table A4: First Observation Only, Moms Only: Child Choosing "Always Now"

	(1)	(2)	(3)	(4)
	Always now	Always now	Always now	Always now
Child Age (in Years)	-0.03***	-0.03**	-0.07***	-0.08**
	(0.01)	(0.01)	(0.02)	(0.04)
Child Gender (Female=1)	-0.02	-0.02	-0.08	-0.00
	(0.03)	(0.03)	(0.06)	(0.05)
Child Race - Black	0.11**	0.10*	0.12	0.10
	(0.06)	(0.06)	(0.10)	(0.08)
Child Race - Hispanic	-0.00	-0.01	-0.03	-0.04
	(0.05)	(0.06)	(0.10)	(0.08)
Child Race - Other	0.23	0.23	0.11	0.14
	(0.19)	(0.19)	(0.36)	(0.26)
Household income (16k-35k)		-0.02		
		(0.05)		
Household income (36k-60k)		0.04		
		(0.06)		
Household income (60k+)		-0.05		
		(0.07)		
Mother Edu (High School)		0.05		
		(0.05)		
Mother Edu (College)		0.01		
		(0.06)		
SES Missing		0.04		
		(0.05)		
Parent Time Preference			-0.03	
			(0.12)	
Parent Academy Dummy				0.02
				(0.07)
Preschool Dummy				-0.06
				(0.06)
Constant	0.50***	0.47***	0.81***	0.79***
	(0.09)	(0.10)	(0.19)	(0.22)
H_0: Black = Hispanic (p-value)	0.16	0.19	0.29	0.22
R^2	0.04	0.05	0.08	0.05
N	882	882	250	423

Notes: The table reports ordinary least squares regressions with a child who always selected the impatient choice as the outcome (always impatient=1, 0 o.w.). Omitted categories include, all specifications: child race, white; specification 2) household income below 16k, mother's educational attainment below High School, and 4) CHECC control group. Includes session controls. Only the first observation of child time preference is used. Only mothers' time preferences are used. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table A5: Longitudinal, Moms Only: Child Time Preference

	(1)	(2)	(3)	(4)
	Time Pref.	Time Pref.	Time Pref.	Time Pref.
Child Age (in Years)	0.05**	0.06**	0.09**	0.01
	(0.02)	(0.02)	(0.04)	(0.06)
Child Gender (Female=1)	0.03	0.03	0.29**	0.09
	(0.06)	(0.06)	(0.11)	(0.09)
Child Race - Black	-0.22**	-0.24**	-0.38**	-0.34**
	(0.11)	(0.11)	(0.19)	(0.16)
Child Race - Hispanic	-0.01	-0.02	-0.16	-0.11
	(0.11)	(0.11)	(0.19)	(0.16)
Child Race - Other	-0.08	-0.12	0.42	0.16
	(0.45)	(0.43)	(0.65)	(0.57)
Household income (16k-35k)		-0.05		
		(0.09)		
Household income (36k-60k)		-0.14		
		(0.12)		
Household income (60k+)		-0.05		
		(0.14)		
Mother Edu (High School)		-0.01		
		(0.09)		
Mother Edu (College)		0.05		
		(0.12)		
SES Missing		-0.02		
		(0.10)		
Parent Time Preference			0.16	
			(0.21)	
Parent Academy Dummy				-0.02
				(0.12)
Preschool Dummy				0.08
				(0.10)
Constant	-0.33*	-0.29	-0.59	0.03
	(0.18)	(0.20)	(0.36)	(0.37)
H_0: Black = Hispanic (p-value)	0.18	0.16	0.41	0.31
R^2	0.02	0.02	0.06	0.02
N	1005	1005	416	523

Notes: The table reports ordinary least squares regressions with the proportion of child patient decisions as the outcome variable. Omitted categories include, all specifications: child race, white; specification 2) household income below 16k, mother's educational attainment below High School, and 4) CHECC control group. Includes session controls. Standard errors clustered at the child level. Only mothers' time preferences are used. $^{**}p < 0.05$, and $^{***}p < 0.01$.

Table A6: Longitudinal, Moms Only: Child Choosing "Always Now"

	(1)	(2)	(3)	(4)
	Always now	Always now	Always now	Always now
Child Age (in Years)	-0.03***	-0.03***	-0.06***	-0.05*
	(0.01)	(0.01)	(0.02)	(0.03)
Child Gender (Female=1)	-0.04	-0.04	-0.13**	-0.04
	(0.03)	(0.03)	(0.05)	(0.04)
Child Race - Black	0.11**	0.11**	0.13*	0.09
	(0.05)	(0.05)	(0.08)	(0.07)
Child Race - Hispanic	-0.01	-0.01	-0.02	-0.05
	(0.05)	(0.05)	(0.08)	(0.07)
Child Race - Other	0.08	0.09	-0.17	-0.07
	(0.17)	(0.17)	(0.13)	(0.22)
Household income (16k-35k)		-0.03		
		(0.04)		
Household income (36k-60k)		0.07		
		(0.06)		
Household income (60k+)		-0.04		
		(0.07)		
Mother Edu (High School)		0.07*		
		(0.04)		
Mother Edu (College)		0.02		
		(0.06)		
SES Missing		0.03		
		(0.05)		
Parent Time Preference			-0.08	
			(0.10)	
Parent Academy Dummy				0.00
				(0.06)
Preschool Dummy				-0.04
				(0.05)
Constant	0.50***	0.45***	0.81***	0.68***
	(0.08)	(0.10)	(0.16)	(0.18)
H_0: Black = Hispanic (p-value)	0.09	0.09	0.18	0.16
R^2	0.04	0.05	0.08	0.04
N	1005	1005	416	523

Notes: The table reports ordinary least squares regressions with a child who always selected the impatient choice as the outcome (always impatient=1, 0 o.w.). Omitted categories include, all specifications: child race, white; specification 2) household income below 16k, mother's educational attainment below High School, and 4) CHECC control group. Includes session controls. Standard errors clustered at the child level. Only mothers' time preferences are used. $^{*}p < 0.10$, $^{**}p < 0.05$, and $^{***}p < 0.01$.

Appendix – For Online Publication Only

Time Preference Elicitation: Children Ages 3-5

Instructions

Now you are going to make some choices about candies. I will show you plates of candies and you will decide which plate you want. Some plates you choose, you can have TODAY, but some plates you choose you can have TOMORROW. I am going to put each plate you choose inside this box. At the end, you will CLOSE YOUR EYES and pick ONE plate from the box and that will be the plate you get to take home.

Okay, let's start!

If you pick THIS plate (point to plate with 4), you could have it at the end of school TODAY.

If you pick THIS plate (point to plate with 5), you could have it at the end of school TOMORROW.

- Quiz #1-> Can you tell me, if you pick THIS plate (point to plate with 4), when can you have it, today or tomorrow? (Yes/No, if you pick THIS plate you can have it today.)
- Quiz #2 -> Can you tell me, if you pick THIS plate (point to plate with 5), when can you have it, today or tomorrow? (Yes/No, if you pick THIS plate you can have it tomorrow)

Okay, which plate do you want, this one TODAY or this one TOMORROW?

Okay, now I will put the plate you picked in the box. Let's play again!

If you pick THIS plate (point to plate with 4), you could have it at the end of school TODAY.

If you pick THIS plate (point to plate with 6), you could have it at the end of school TOMORROW.

- Quiz #1-> Can you tell me, if you pick THIS plate (point to plate with 4), when can you have it, today or tomorrow? (Yes/No, if you pick THIS plate you can have it today.)
- Quiz #2 -> Can you tell me, if you pick THIS plate (point to plate with 6), when can you have it, today or tomorrow? (Yes/No, if you pick THIS plate you can have it tomorrow)

Okay, which plate do you want, this one TODAY or this one TOMORROW?

If you pick THIS plate (point to plate with 4), you could have it at the end of school TODAY.

If you pick THIS plate (point to plate with 7), you could have it at the end of school TOMORROW.

- Quiz #1-> Can you tell me, if you pick THIS plate (point to plate with 4), when can you have it, today or tomorrow? (Yes/No, if you pick THIS plate you can have it today.)
- Quiz #2 -> Can you tell me, if you pick THIS plate (point to plate with 7), when can you have it, today or tomorrow? (Yes/No, if you pick THIS plate you can have it tomorrow)

Okay, which plate do you want, this one TODAY or this one TOMORROW?

Okay, now I will put the plate you picked in the box. Let's play again!

If you pick THIS plate (point to plate with 4), you could have it at the end of school TODAY.

If you pick THIS plate (point to plate with 8), you could have it at the end of school TOMORROW.

- Quiz #1-> Can you tell me, if you pick THIS plate (point to plate with 4), when can you have it, today or tomorrow? (Yes/No, if you pick THIS plate you can have it today.)
- Quiz #2 -> Can you tell me, if you pick THIS plate (point to plate with 8), when can you have it, today or tomorrow? (Yes/No, if you pick THIS plate you can have it tomorrow)

Okay, which plate do you want, this one TODAY or this one TOMORROW?

Okay, now I will put the plate you picked in the box.

Okay, now you get to pick which plate you want from the box, go ahead and close your eyes, and get one.

Great, this is the plate you will get to have (TODAY/TOMORROW). I will put it in your (TODAY/TOMORROW) bag.

Thank you for playing! Good job.

Time Preference Elicitation: Children Ages 6-12

CANDY ACTIVITY

Now we'll make some choices about candy. There is no right or wrong answer in this game, we just want you to put down what you would actually choose.

There are going to be 4 rounds.

You will decide which plate of candy you want. Some of the plates, you can have TODAY, but some of the plates, you can have TOMORROW. If you get a plate for TODAY, you can take it home today after the games are done. If you get a plate for TOMORROW, we will give the plate to your parent with instructions that you can't have it until tomorrow.

At the end of the 4 rounds, only one of the rounds will be the round-that-counts and you will get to take that choice home. At the end, we are going to pick a ball out of this jar that determines which of the 4 rounds will be the round-that-counts. Since you don't know which round will count, you should make your decision in each game as if it is the round that counts.

Here are the candies that we will use (hold up candies).

Here is an example of how to circle your choices.

Veronica is deciding what to do in Round 1. She is choosing between. 1 Candy TODAY, and 2 Candies TOMORROW. She decides to get 1 Candy TODAY. She circles her answer like:

ROUND 1

FOR TODAY

1 Candy

FOR TOMORROW

2 Candies

Now Veronica decides what to do in Round 2. She decides between 1 candy today and 3 candies tomorrow. She chooses 3 candies tomorrow. She circles her answer like:

ROUND 2

FOR TODAY

1 Candy

FOR TOMORROW

3 Candies

Now I'm going to pass around your activity sheet – for each round, go ahead and circle which candy plate you want.
We'll pick the round that counts at the end.

Time Preference Elicitation: Parents

ACTIVITY 1
EARLIER AND LATER ACTIVITY

For this activity, you will receive some payments in the form of a **debit gift card**. The gift card can be used at any store Visa, Mastercard, or Discover are accepted. Does anyone have questions about how to use the debit gift card?

We will pass around your debit gift cards now – each person gets one. Please hold on to the cards. The gift cards have $0 loaded on them now, but you will present these to the front desk at the end of the activity and the staff will record when and what amount to load on your card. The amount and time depends on the choices you make.

DECISION CARD DECK

In this activity, you will make 16 choices about when you want to get money deposited on your card, one time is "earlier" and one time is "later." Both the earlier and later times can be different for different decisions. This means you could receive payments as early as today, as late as 10 weeks from now, or possibly other dates in between. The gift card will be ready to use immediately after it is loaded.

You will receive a decision card deck with 16 decision cards. In each decision card, you will make a choice between an amount deposited on your gift card **earlier** or an amount deposited on your gift card **later**.

Please select the option you prefer, not what you think anyone might want you to prefer. Please only select one choice per card by checking the box. After you are done, put the finished card face down and begin on the next card. You can't go back to previous choices so think carefully about each choice. Note that the amounts and the "Now" and "Later" times may change with each new card, so pay close attention to them.

CHOICE-THAT-COUNTS

Only one of your cards will be the **choice-that-counts.** When we are finished **with all activities**, you will bring all of your decision cards and your gift card up to the Research Assistant. The Research Assistant will shuffle up your cards and present them to you face down like this (demonstrate). You will then pick one of the cards from the deck, and this will be the one that is paid out. Since all decisions are equally likely to be chosen, you should make each decision as if it will be the decision you will actually receive; in other words, choose the outcome you really want.

PAYMENTS

The "earlier" and "later" payment will be in the form of deposits into your debit gift card. If you choose to receive money today, your deposit will be made within 2 hours. If you choose to receive money at a future date, we will be depositing the money on the day specified by 12 noon. We will give you a call as soon as your card is loaded.

As a reminder to you, you will receive a "receipt" that lets you know the days and times your deposits are scheduled to arrive. If you don't get a payment on the date on your receipt, or you lose your card, please contact us right away and we will assist you. If you need this method explained again please raise your hand.

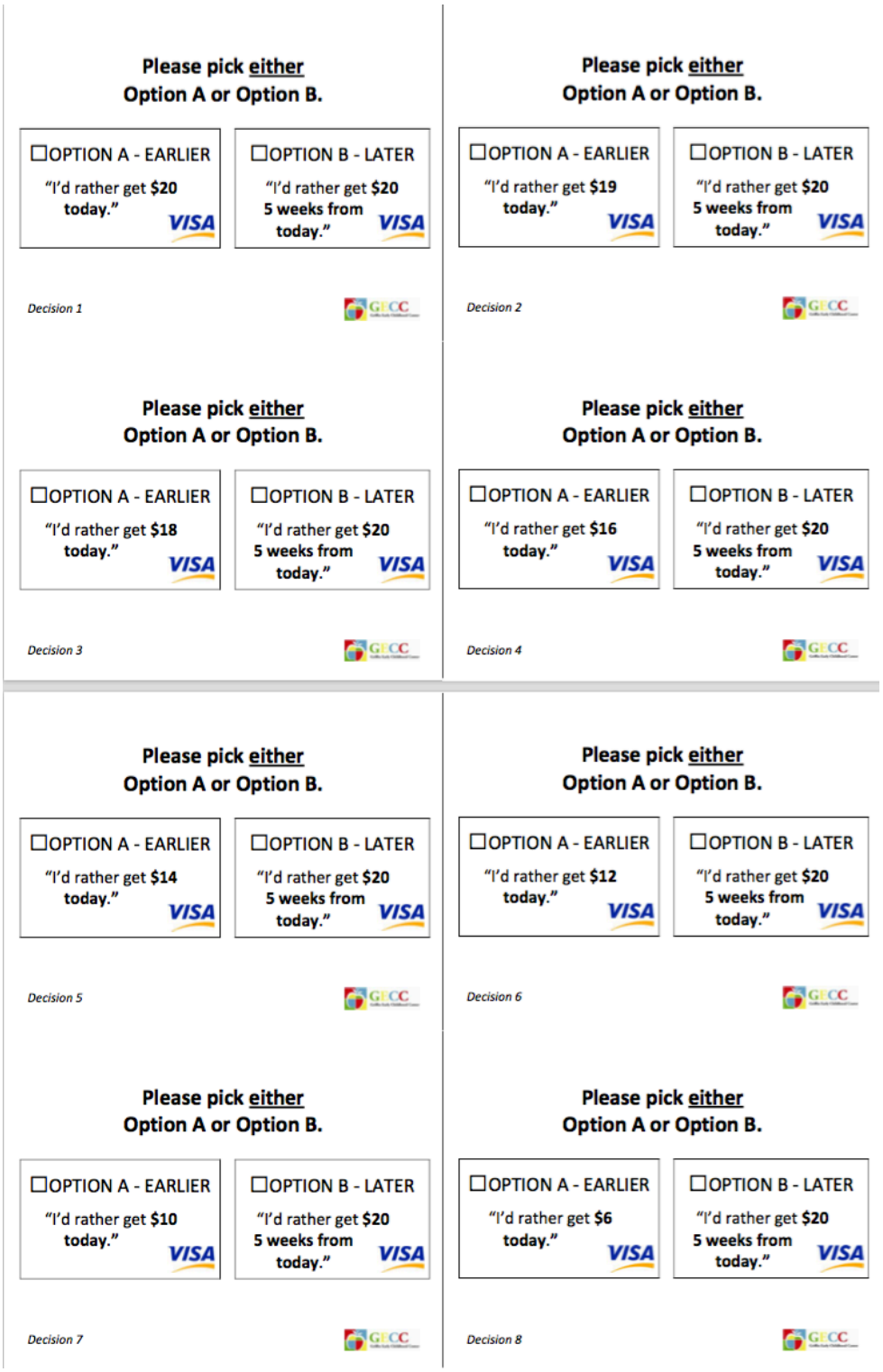
PRACTICE ROUND WITH CANDY

First we will do a practice round with candy. The "Now" time will be right away, and the "Later" time will be at the end of the activity session, this is about 1 hour from now. If you get a candy "Now," you can go ahead and eat it. You will make 3 choices.

After you are done with each choice, place the cards face down and a Research Assistant will come by to have you draw out one card, that will be the **choice-that-counts** from your set. If you selected candy "Now" on that card, you will pick out the candy from this basket. If you selected candy "Later" on that card, you will present your card to the desk in front and pick up the candy on your way out.

PROCEED TO ACTIVITY

We are going to pass out your decision card deck now. Different from the candy round, you will get to find out which choice is the "choice that counts" at the very end of all the activities.


Please pick either
Option A or Option B.
☐OPTION A - EARLIER
"I'd rather get $20 today."
VISA
☐OPTION B - LATER
"I'd rather get $20 5 weeks from today."
VISA
Decision 1
Please pick either
Option A or Option B.
☐OPTION A - EARLIER
"I'd rather get $19 today."
VISA
☐OPTION B - LATER
"I'd rather get $20 5 weeks from today."
VISA
Decision 2
Please pick either
Option A or Option B.
☐OPTION A - EARLIER
"I'd rather get $18 today."
VISA
☐OPTION B - LATER
"I'd rather get $20 5 weeks from today."
VISA
Decision 3
Please pick either
Option A or Option B.
☐OPTION A - EARLIER
"I'd rather get $16 today."
VISA
☐OPTION B - LATER
"I'd rather get $20 5 weeks from today."
VISA
Decision 4
Please pick either
Option A or Option B.
☐OPTION A - EARLIER
"I'd rather get $14 today."
VISA
☐OPTION B - LATER
"I'd rather get $20 5 weeks from today."
VISA
Decision 5
Please pick either
Option A or Option B.
☐OPTION A - EARLIER
"I'd rather get $12 today."
VISA
☐OPTION B - LATER
"I'd rather get $20 5 weeks from today."
VISA
Decision 6
Please pick either
Option A or Option B.
☐OPTION A - EARLIER
"I'd rather get $10 today."
VISA
☐OPTION B - LATER
"I'd rather get $20 5 weeks from today."
VISA
Decision 7
Please pick either
Option A or Option B.
☐OPTION A - EARLIER
"I'd rather get $6 today."
VISA
☐OPTION B - LATER
"I'd rather get $20 5 weeks from today."
VISA
Decision 8

Please pick either
Option A or Option B.

☐OPTION A - EARLIER	☐OPTION B - LATER
"I'd rather get **$20** **5 weeks from today."** VISA	"I'd rather get **$20** **10 weeks from today."** VISA

Decision 9

Please pick either
Option A or Option B.

☐OPTION A - EARLIER	☐OPTION B - LATER
"I'd rather get **$19** **5 weeks from today."** VISA	"I'd rather get **$20** **10 weeks from today."** VISA

Decision 10

Please pick either
Option A or Option B.

☐OPTION A - EARLIER	☐OPTION B - LATER
"I'd rather get **$18** **5 weeks from today."** VISA	"I'd rather get **$20** **10 weeks from today."** VISA

Decision 11

Please pick either
Option A or Option B.

☐OPTION A - EARLIER	☐OPTION B - LATER
"I'd rather get **$16** **5 weeks from today."** VISA	"I'd rather get **$20** **10 weeks from today."** VISA

Decision 12

Please pick either
Option A or Option B.

☐OPTION A - EARLIER	☐OPTION B - LATER
"I'd rather get **$14** **5 weeks from today."** VISA	"I'd rather get **$20** **10 weeks from today."** VISA

Decision 13

Please pick either
Option A or Option B.

☐OPTION A - EARLIER	☐OPTION B - LATER
"I'd rather get **$12** **5 weeks from today."** VISA	"I'd rather get **$20** **10 weeks from today."** VISA

Decision 14

Please pick either
Option A or Option B.

☐OPTION A - EARLIER	☐OPTION B - LATER
"I'd rather get **$10** **5 weeks from today."** VISA	"I'd rather get **$20** **10 weeks from today."** VISA

Decision 15

Please pick either
Option A or Option B.

☐OPTION A - EARLIER	☐OPTION B - LATER
"I'd rather get **$6** **5 weeks from today."** VISA	"I'd rather get **$20** **10 weeks from today."** VISA

Decision 16