Does a Forward-Looking Perspective Affect Self-Control and the Demand for Commitment? Results from an Educational Intervention *

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Abstract

This paper reports results from a randomized educational intervention in elementary schools, that aims to build a forward-looking perspective in children. We evaluate the effects of the intervention on decisions in an intertemporal planning and consumption task using a temptation good, chocolate. We find that treated children end up consuming less chocolate on the earlier date than control children. This is both because they make more patient consumption plans in the first place and because they exhibit a type of extreme self-control, in the sense of eating even less than they had planned for. The effects of the treatment are heterogeneous on gender, with treated girls becoming less present-biased (as well as more future-biased). We find no significant effects of the intervention on the demand for commitment.

Keywords: Self-control, commitment, children, field experiment, randomized interventions.

JEL Codes: C93, D91.

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1 Introduction

Time preference is at the root of many important decisions in a range of domains. More patient individuals, who are willing to wait for larger-later rewards, are more likely to save more and obtain better education, and less likely to experience adverse health outcomes.[1] In addition to patience, self-control, defined as the ability to stick to plans and not succumb to temptation when faced with immediate consumption, is also an important predictor of favorable outcomes. In empirical studies that correlate measures of self-control with life outcomes, lack of self-control is found to be associated with substance abuse, obesity, and lower financial and subjective well-being (Bickel et al., 1999; Meier and Sprenger, 2010; Harrison et al., 2010; De Ridder et al., 2012; Strömbäck et al., 2017; Cobb-Clark et al., 2019). Overall, this literature puts forward both patience and self-control as important "non-cognitive skills", and brings forth the question of whether they can be improved through interventions, so as to achieve better individual and social outcomes.

This paper reports results on the effects of an educational intervention that aims to build a forward-looking perspective in children, on a consumption-based measure of patience and self-control. Childhood self-control has been associated with favorable future outcomes, such as better physical health, better finances, and less addictive and criminal behavior (e.g. Moffitt et al. (2011)). In addition, non-cognitive skills such as self-control tend to be more malleable in childhood, and many interventions designed to build them focus on children (see Kautz et al. (2014) for a review). Building self-control in childhood can therefore potentially yield large benefits that extend into adulthood.

The core of the intervention is to promote patient behavior by getting children to consider and better evaluate future payoffs in intertemporal decision-making. This is done through an extracurricular educational program, implemented among 3rd and 4th graders in elementary schools in Istanbul, Turkey. The program is given by students' own teachers, and involves stories coupled with related classroom activities, which help children visualize future utilities better in settings of choice over time. We use a consumption-based intertemporal decision-making task to evaluate the effects of the intervention on 1) children's intertemporal consumption plans, 2) whether they would like to purchase a commitment device that helps them stick to these plans, 3) their ability to make time-consistent choices at the time of actual consumption.[2]

One way of tackling self-control problems is to purchase commitment devices that restrict con-

[1] References include Fuchs (1980), DellaVigna and Paserman (2005), Finke and Huston (2013), Åkerlund et al. (2016); see Sutter et al. (2013) and Golsteyn et al. (2014) for the predictive power of patience in children and adolescents' contemporaneous and future outcomes.

[2] Alan and Ertac (2018) evaluate the effects of the same intervention on the willingness to wait within the context of an intertemporal allocation task, using a different sample. They find that treatment leads to more patient decisions, and this effect lasts up to three years after the intervention. Treated children are also less likely to have disciplinary problems at school.

sumption, which also implies that the individual is aware of her own time inconsistency.[3] There is now a growing literature studying the demand for commitment, both in the laboratory and the field (Bryan et al. (2010) provides an early review). Field experiments in particular have studied commitment takeup in contexts that tend to be plagued by self-control issues, such as savings, smoking, and exercise (Ashraf et al., 2006; Royer et al., 2015; Giné et al., 2010). While these studies focus on the question of what type and what proportion of individuals demand commitment, we provide the first evidence for whether commitment demand would change if individuals are encouraged to think about intertemporal decisions in a future-focused way. While a forward-looking perspective is expected to lead to more patient decisions, it is not immediately obvious how it might affect the demand for commitment. On the one hand, if resisting temptation is now easier for the treated group, these children may have less need for a commitment device (just as exponential discounters would have no need for self-restraint). On the other hand, if the treatment makes children more aware of potential self-control problems without necessarily providing ways of overcoming them, or increases the psychological costs of overconsumption, treated children may demand commitment more. The question, then, becomes whether such interventions make commitment devices unnecessary or whether commitment devices and a forward-looking perspective are "complements".

We evaluate the impact of the intervention with an intertemporal consumption task that involves chocolate, which is generally very well-liked by children, and is often subject to attempts at controlling consumption by children themselves as well as parents. We visit the classrooms twice.[4] In the first visit, we explain to children that in a second visit (which is to happen two weeks later), we will give them four chocolates, to be consumed over two consecutive days. We ask them to first make a consumption plan on how they would like to allocate the chocolates among the first consumption day and the second consumption day. We then introduce a costly commitment device, which enables children to "lock" the chocolates they would like to save for the second day, in a special bag. When we visit the classroom again, we bring the four chocolates, and observe students' actual consumption behavior between the first day (which is then today) and the second day (which is then tomorrow). This gives us a measure of present bias, defined as overconsumption compared to planned consumption. Importantly, the commitment device fails with some probability, which allows us to study whether children who committed are more likely to display self-control problems when presented with the chocolates, freely of selection issues.[5]

[3] Such individuals are commonly referred to as sophisticated (as opposed to naive) in the theoretical and empirical literature on time inconsistency, see Laibson (1997); O'Donoghue and Rabin (1999); Frederick et al. (2002))

[4] The experimental task builds on Alan and Ertac (2015), who study the correlates of the demand for commitment and (partially self-reported) present bias.

[5] In the literature, there are few studies that link actual present bias with the demand for commitment. Augenblick et al. (2015) do this in the domain of work and procrastination, and show that present bias predicts commitment takeup. Ashraf et al. (2006) find a weak correlation between present bias in hypothetical intertemporal choices and the

We find that teaching children a forward-looking mindset does not affect the demand for commitment on average. However, it does lead children to 1) make more patient intertemporal consumption plans, 2) make even more patient consumption decisions than their plans when actually faced with a temptation good. That is, treated children plan to eat fewer chocolates on the first day, and actually eat (on average) even less than they planned for, when the time comes. This indicates that treatment on average leads to "too much" self-control compared to previously made plans, leading to what could be termed as "future bias". Treatment effects on self-control turn out to be heterogeneous with respect to gender: treated girls are less present biased (and more future biased) than untreated girls.

Most studies of self-control use intertemporal decisions made at a single point in time, that vary the amount of (monetary) rewards and the time the rewards are received. Evidence for present bias is found when individuals make more patient decisions between two future rewards that have the same delay, than two rewards where the earlier reward comes today. Longitudinal, within-subject studies that compare the same person's planned choice with her actual consumption choice are rare (Sadoff et al., 2019).[6] Our design allows us to study actual present bias, by visiting classrooms at two different dates, once to elicit plans and once to observe actual consumption.

The paper is the first to test whether it is possible to improve self-control in the face of a temptation good in children, by building a forward-looking perspective. It is also the first to investigate whether a forward-looking perspective would make commitment devices moot or whether it would increase sophistication and make such devices more effective. The paper contributes to the growing literature that focuses on the malleability of preferences through interventions and evaluates the effects of these interventions through experimental tasks. In the context of time preference, there is recent evidence that financial training interventions in adolescence (e.g. Luhrmann et al. (2018)) can lead to more time consistent behavior. In other examples, Kosse et al. (2020) show that prosociality can be enhanced by pairing low-SES children with mentors that voluntarily spend time with them. Cappelen et al. (2020) show that a randomized preschool program vs. a parenting program can change prosocial attitudes as well as measures of non-cognitive skills, although it does not affect experimentally-measured patience. Alan et al. (2019) show that an intervention that teaches children that abilities are malleable through effort, can improve perseverance as well as math scores. The current paper shows that it is possible to improve self-control in the face of a temptation good by imparting a forward-looking mindset. Treated children end up eating significantly fewer chocolates on the early date, as a result of both more patient plans and overly self-controlled choices, although they do not demand an external commitment device more than

demand for commitment, only among women.

[6] Augenblick et al. (2015) does this in the domain of costs, by looking at advance work plans and actual effort. They find that participants choose 10–12% fewer tasks in the present compared to any future date, exhibiting significant present bias.

untreated children. In this sense, the results relate to a recent literature on children's food choices and how to get them to eat healthier, e.g. by using incentives (Belot et al., 2016; Just and Price, 2013; Sadoff et al., 2015; Samek, 2019). Our results suggest that making children more forward-looking could also lead to better food choices (especially when faced with healthier vs. less healthy immediate alternatives), or if the results extend to the cost domain, could help them procrastinate less on tasks in their educational life.

The rest of the paper is structured as follows. Section 2 presents the educational intervention. Section 3 includes the experimental design and procedures. Section 4 describes the data and the results. Section 5 concludes.

2 The Educational Program

The program was implemented in state elementary schools in Istanbul, among 3rd and 4th graders, aged 9-10.[7] Since the majority of the upper-middle and upper class families prefer to send their children to private schools in Turkey, the sample largely comes from lower socioeconomic segments. The educational program was given by the students' own teacher, in the free extracurricular hours allotted to teachers by the Ministry of Education. Up to five free hours a week are available to teachers, who generally use these for their class to take part in Ministry-approved projects. These projects are usually offered by NGO's, international institutions and the private sector, and tend to cover topics such as health, the environment, art, sciences or foreign languages. Participation is at the discretion of the teacher. The current program was implemented for a minimum of two hours a week, and continued for eight weeks. The target concepts were determined by the first and second author of this study. Age-appropriate stories and visual materials were created based on these concepts, with the help of a multidisciplinary team composed of education psychologists, a group of elementary school teachers, children's story writers and illustrators/media artists. The intervention was designed around getting children to visualize the future, thereby developing or fostering the ability to evaluate intertemporal tradeoffs in a forward-looking manner.

The core material involves eight short case studies, which are supported by accompanying class activities. The case studies are related to imagining the future-self (forward-looking behavior), self-control against temptation goods, smart shopping, games to make future utilities vivid, saving for a target, viewing and evaluating alternative future outcomes, and developing coping mechanisms against temptation to be able to meet a savings target. They generally involve critically evaluating alternative future outcomes of given actions, mostly in the context of consumption and saving behavior. Case studies are open-ended and are followed by questions to initiate class

[7]The Turkish 12-year compulsory education is divided into three stages of 4 years of schooling—elementary, middle, and high school.

discussions.

To give an example from the curriculum, in one case study, children cover the story of twin sisters with different tastes, both of whom want a bike. One (Busra) chooses to wait until the summer and get a bike with the extra gadgets that she cares about, while the other (Ceren) makes a conscious decision not to wait and get a bike without those gadgets. Students discuss alternative future images of Ceren that involve waiting and being unhappy about not having a bike in the meantime, or not waiting and being unhappy after having seen Busra's bike, or not waiting and having no regrets about the decision. Similarly, they discuss alternative future outcomes for Busra. This case study emphasizes the importance of interpersonal differences and individual preferences in intertemporal decisions. In another case study, a child, who wants a backpack, calculates how quickly she gets to the target under different spending/saving regimes out of her allowance and tries to find a good balance between her consumption and saving. Working on these case studies, students are asked to discuss different scenarios and to imagine themselves in similar situations. These discussions are also supplemented by suggested class activities and games, such as building a time machine and pretending to travel to future dates of their choice that are important in terms of set targets (e.g. end of the semester, birthday), drawing related pictures or composing short stories about alternative future realizations in the covered cases. The activities aim to help children imagine and understand the future outcomes of their decisions more clearly. Sample photographs of this type of class activity are given in the Appendix.

It is important to note that the program did not involve giving children direct advice to act patiently. The case studies and class activities were built around discussing alternative courses of action and evaluating their future consequences. The program aimed to encourage patient behavior by building a forward-looking mindset, rather than indoctrinating children on being a patient person. We were very careful about emphasizing this in teacher training seminars, because we did not want potential "demand effects" to compromise our evaluation of the program. In line with this, the idea of interpersonal differences in time preference and the fact that acting patiently may not be the right choice for everyone in every situation were thoroughly explained both in the training seminars and while running the experiments in the classroom.

Overall, the educational program was designed with the purpose of helping children develop the habit of evaluating the future consequences of their actions when making intertemporal decisions. A treated child is therefore expected to visualize future payoffs more easily before taking an action. Developing such a perspective would then be expected to lead to more patient decisions on the part of treated children in intertemporal decision contexts. Indeed, Alan and Ertac (2018) show that treated children behave more patiently in intertemporal allocation tasks (that use gift rewards), up to 2.5 years after the intervention. In the current paper, we study how an intervention on developing such a forward-looking perspective could affect self-control in the context of consuming

a temptation good, as well as intertemporal allocation plans and the demand for a commitment device.

3 Design and Measurement

3.1 Evaluation Design

The evaluation was implemented in a sample of 3rd and 4th graders in Turkish elementary schools, where students in the treatment group received the intervention on forward-looking behavior described above.[8] After a letter about the program was sent to schools from the Istanbul Directorate of Education, schools where at least one teacher wanted to participate in the program were randomized into treatment and control.[9] Randomization was done at the school level to prevent spillover effects across classrooms. Teachers in the treatment group participated in a whole day teacher training seminar and were given a teacher toolkit that had clear instructions on how to cover the materials and explained the aims and potential benefits of each case. The control group did not receive any intervention, but most teachers in the control group participate in other extracurricular projects (e.g. on the environment, dental hygiene, arts and crafts etc.).[10] This is why we do not expect differences in the amount of interaction between the teacher and students across the two groups. We visited the classrooms in Spring 2015, at the end of the semester that the program was implemented, and measured the effects of the program on intertemporal decisions using an incentivized experiment.[11]

3.2 Experimental Outcomes

The experiment took two visits to the classroom. In the first visit, students were asked to make a plan for a second visit, which was to happen two weeks later, on how they would like to allocate their two pieces of chocolate between two consecutive days. Students were told that this plan has a chance of "counting", so they would have an incentive to take the decision seriously.[12] Students were informed that when we visit their classroom two weeks later, on the first day we would bring

[8] Note that this sample of students is different from the one in Alan and Ertac (2018), where a grit intervention was also implemented in one treatment arm.

[9] It is important to note that there was little information in the letter about the specifics of the program, and the project topic was described as economic decision-making and financial literacy.

[10] The teachers in the control group were also promised to receive all training materials after the impact evaluation with this sample was completed.

[11] All procedures used for outcome measurement were approved by the local institutional review board (Koc University Committee on Human Research). Informed consent was obtained from parents for children's participation in experiments.

[12] In actuality this would be set to 1-in-10, determined individually.

four pieces of chocolate for each of them. They would be able to eat their chocolates as they like—that is, they would not be bound by their plan, unless they were in the group for which the plan is imposed.

Students were then asked whether they would like to "purchase" a costly commitment device. Commitment was described to students as putting their chocolates in a locked box, and came with a cost of one gift out of an extra endowment of three small gifts. However, the lock had a probability of failing. If it did, then the student would again be free to eat as she liked.[13]

Two weeks later we indeed visited the classroom again, and brought children the chocolates. The chocolates stayed there in front of the children, as they filled out a survey. If the commitment device worked (this was randomized at the individual level), then students were given the chocolates in the way they originally planned. If the commitment device did not work, then they were free to eat as much as they wanted out of the four pieces. In this case, the four chocolates were given to children in a plastic bag that had a name tag. We collected the plastic bags (with the chocolates left inside, if any) and left them in a box at school, for children to take theirs and eat the next day.

Given that it is a specific consumption good, chocolate may not be a "monotonic" reward in the classical sense in experimental economics. That is, there may be children who do not like or are allergic to chocolate. To be able to control for this, we collected questionnaire data on how much students like chocolate. Because of random assignment, we expect this to be balanced across treatment status, which is indeed the case (please see Table 1). A vast majority of students like chocolate (97.36%).[14] In addition, we collected data on the time of the experiment, since hunger can correlate with self-control as well as planned consumption. Again, since our treatment is randomly assigned and we visited schools and classrooms in random sequence, we do not expect differences in these variables, and this is indeed the case (please see Table 1). To improve the precision of our estimates of treatment effects, we include these controls in our regression analyses.

In addition to the outcomes from the consumption experiment, we have access to children's decisions in a convex time budget task that asks children to allocate gift rewards (toys, stationary) between today and two weeks (Andreoni and Sprenger, 2012). Here, children are asked to allocate 5 gift tokens between today and two weeks, with an interest rate of 50% . We also have data on children's risk preferences, based on Gneezy and Potters (1997). Finally, we have measures of academic achievement, coming from students' scores in an objective math and Turkish test administered by us, as well as a measure of cognitive ability, based on a Raven's progressive matrices test (Raven, 2000).

[13] In case the lock failed, the student would get a refund on the gift she used for purchasing the commitment device, so there was no risk on that front.

[14] This is elicited with a question that asks the child how much she likes chocolate on a scale of 1 to 4, coded with 1 being very much and 4 not at all. We pool answers of 1 and 2 in the "likes chocolate" group in the analysis.

A major concern with educational interventions of this sort is whether there could be demand effects, e.g. children trying to behave patiently to please teachers or experimenters. We took several measures at the design stage to prevent this from happening. The first measure is to use a reward that would be very attractive to children, e.g. one that they would really want to consume, to leave less room for demand effects. Given that many children are found to be prone to self-control issues (see Section 4.4), chocolate seems to achieve this. Also, we made sure that the teachers were not present in the classroom when we were running the experiments, so that children would not feel pressured to act in a certain way. We also made sure to "delink" the measurements with the actual educational program by running several unrelated tasks on, for example, risk taking. Finally, we also emphasized in the instructions that there is no right or wrong choice, and different people can have different preferences.

4 Results

4.1 Data

The sample used in the paper includes 2270 students from 75 classes in 21 elementary schools. We have 10 schools in the treatment group and 11 schools in the control group. Children are on average 9 years old, and 52.4% of the sample is male. Table 1 reports differences between the control and the treatment group in terms of student characteristics. The sample is balanced in terms of gender, how much the children like chocolate, cognitive ability, math performance and risk preferences as well as the time of the experiment (both in visit 1 and visit 2).[15]

[15] 105 students are noted as having some sort of comprehension difficulty, either by their teachers or the experimenters. The incidence of this does not differ across treatment groups (p=0.65 in a test of proportions). We do not exclude these children from our analyses but add a control for them.

Table 1: Balance table

	Control			Treatment			
	n	mean	sd	n	mean	sd	Diff
Male	1195	0.52	0.50	1075	0.52	0.50	-0.002
Likes chocolate	1102	0.97	0.16	1017	0.97	0.16	-0.002
Cognitive ability	1110	-0.03	1.02	1023	0.04	0.96	0.069
Math score	1105	2.74	1.61	1023	2.77	1.53	0.025
Verbal score	1109	3.46	1.51	1024	3.73	1.55	0.274
Risk	1038	2.53	1.43	924	2.49	1.48	-0.036
Time: Visit 1	1195	10.47	1.59	1075	10.93	2.03	0.455
Time: Visit 2	1195	8.33	3.26	1074	8.57	3.53	0.237

This table shows the means and the standard deviations of the baseline covariates separately for the control and the treatment group. Difference between control and treatment is obtained from regressing the variable of interest on the treatment dummy. Standard errors are clustered at the school level. The time variable is constructed by converting hours to integers and adding the minutes as a fraction of the hour. For example, 09:20 is converted to 9,333. * p<0.10, ** p<0.05, *** p<0.01

We have three main research questions: 1) do treated children make different consumption plans? 2) how does treatment affect the propensity to purchase a commitment device?, 3) how does treatment affect actual consumption and the ability to stick to plans? We start our analysis with whether treated children plan differently—specifically, whether they would like to leave more chocolates for the future than untreated children.[16]

4.2 Planned Consumption Levels

In the whole sample, children who correctly allocate a total of four chocolates allocate 1.85 of their chocolates for Day 1 consumption on average.[17] A large majority (75.5%) plan to allocate consumption equally across the two days. As expected, Table 2 shows that there is a strong relationship between planned chocolate consumption on the earlier date, and the number of gift rewards allocated to "today" in the convex time budget task in the control group. That is, plans in our chocolate consumption task capture patience in a similar way that gift-based tasks do.

[16]In all the regressions presented below, we use gender, cognitive ability, time of the experiment, and the student having comprehension difficulties as controls. In regressions of treatment effects, we cluster standard errors at the unit of randomization (school), while in analyses done on the control group sample, we cluster at the classroom level.

[17]There are 127 observations where children mistakenly allocate more than or less than 4 chocolates in total over the two days. In order to preserve the randomized nature of our sample, we keep these observations (and add a control for this error) in all treatment effect regressions. To avoid problems with interpretation (e.g. defining present bias), we exclude them in descriptive statistics and correlational analyses on consumption plans and time inconsistency. It should be noted that the propensity of this error is not different across treatment and control (p=0.37), and all results are robust to keeping or dropping these observations.

Table 2: Chocolates allocated for the first day

	(1)
Tokens allocated to today in CTB	0.082***
	(0.02)
Male	0.039
	(0.03)
Cognitive ability	0.006
	(0.02)
Likes chocolate	0.165
	(0.16)
R2	0.04
N	1043

Standard errors are clustered at the classroom level and shown in parentheses. The dependent variable is the amount of chocolates allocated to Day 1 in the control group. Erroneous plans (total chocolates less or more than four) are excluded.
* p<0.10, ** p<0.05, *** p<0.01.

Next, we look at how planned consumption is affected by the treatment. On average, treated children plan to eat 1.78 chocolates on the first day, while for control children this amount is 1.92 ($p < 0.01$, Mann-Whitney test). Table 3 reports OLS regressions of planned consumption on the earlier date on the treatment dummy. Here, we find that treatment significantly reduces the number of chocolates allocated for first day consumption—that is, treated children are estimated to plan to consume on average 0.17 chocolates less on the first day than untreated children. [18]

[18]Table A1 in the Appendix replicates the main result reported in Alan and Ertac (2018) for this sample: treatment leads to significantly more patient intertemporal allocations in the gift-based convex time budget task.

Table 3: Treatment Effects on the Plan

	(1)	(2)
Treatment	-0.173***	-0.166**
	(0.06)	(0.06)
Male		0.023
		(0.03)
Cognitive ability		-0.004
		(0.02)
Likes chocolate		0.195*
		(0.11)
Controls	✓	✓
Control mean	1.91	1.91
R2	0.03	0.04
N	2266	2114

Standard errors are clustered at the school level and shown in parentheses. Controls include a dummy for errors in consumption plans, experiment hour, experimenter dummies, and a dummy for children with comprehension difficulties. * p<0.10, ** p<0.05, *** p<0.01.

4.3 The Demand for Commitment

In the overall sample, 44% of the students commit. Before getting to treatment effects, we study the question of what type of student commits, using the control group. Table 4 shows that the propensity to commit is lower in children with higher cognitive ability, and in children who particularly like chocolate.

Table 4: Correlates of Commitment in the Control Group

	(1)
Tokens allocated to today in CTB	0.014
	(0.01)
Cognitive ability	-0.041***
	(0.01)
Male	0.029
	(0.03)
Likes chocolate	-0.224***
	(0.07)
N	1084

Standard errors are clustered at the classroom level and shown in parentheses. The dependent variable is equal to 1 if the child buys the commitment device, 0 otherwise. * p<0.10, ** p<0.05, *** p<0.01.

A major question of interest is whether learning to be more forward-looking changes the demand for commitment. On the one hand, the content of the intervention could make treated children more sophisticated, by making time inconsistency/self-control problems salient. On the other hand, treated children could be more confident in their ability to overcome these problems, if the intervention equipped them with such tools. Raw proportions show that treated students are more likely to demand the commitment device: 47.5% of the treated children in our sample commit, while this proportion is 41.4% in the untreated group. While the difference is significant in a test of proportions ($p < 0.01$), it is no longer significant in a regression that accounts for dependence (Table 5). We go back to this in our analysis of present bias.

Table 5: Treatment Effects on The Demand for Commitment

	(1)	(2)
Treatment	0.003	0.010
	(0.04)	(0.04)
Male		0.016
		(0.02)
Cognitive ability		-0.032**
		(0.01)
Likes chocolate		-0.048
		(0.07)
Controls	✓	✓
Control mean	0.41	0.41
N	2268	2116

Standard errors are clustered at the school level and shown in parentheses. The dependent variable is a dummy variable which is equal to 1 if the child buys the commitment device, 0 otherwise. Controls include the time of experiment, experimenter dummies, and a dummy for children with comprehension difficulties. * p<0.10, ** p<0.05, *** p<0.01.

4.4 Actual Consumption and Present Bias

We define present bias as the (positive) difference between chocolates actually consumed on the first day and the chocolates planned for the first day. If a child ate more chocolates than she planned for, then we classify her to be present biased. If she ate less chocolates than she planned for, she is "future biased". If she ate exactly the same number of chocolates as she planned, she is time consistent. Notice that here, we need to exclude observations where children committed and the commitment device "worked", which is a small random sample of the ones who commit.[19] That is,

[19]This leads to the exclusion of 193 observations.

we include cases where children were given all four chocolates for consumption on the first day, either because they did not commit or the commitment device did not work. [20].

The first point to note here is that the average amount of chocolates eaten on the first day (by children who are free to eat as much as they want) is 2.43. This underscores the temptation good aspect of chocolate, since average planned consumption for the first day is 1.84 chocolates among this group. Illustrating this more starkly, only 3 percent of children plan to eat all four chocolates on the first day, but 33% actually do. Overall, 47% show present bias.

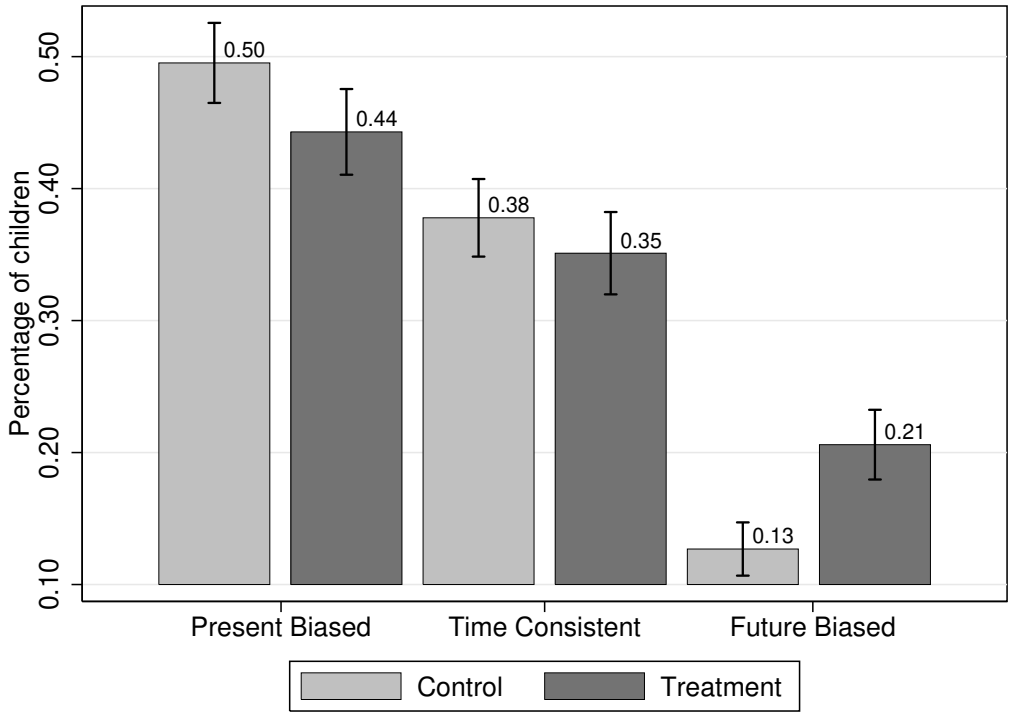
Before moving on to treatment effects, we use the objective test scores in our data to see whether there is a link between self-control and academic achievement. In the control group, being present biased indeed negatively predicts math scores, controlling for cognitive ability (an effect significant at the 10 percent level, Appendix, Table A2). Interestingly, there is no effect of any type of intertemporal bias or lack thereof for Turkish scores, Appendix Table A3). This suggests that lack of self-control (more specifically, over-consumption) predicts lower performance in tasks that tend to be viewed as difficult (such as math), where non-cognitive skills may be especially needed. [21]

We next move to treatment effects. Figure 1 shows the types of bias exhibited by treated and untreated children. The overall distribution of biases is significantly different across the treatment and control groups (χ^2 test, $p < 0.01$). Specifically, the incidence of present bias is lower in the treatment group and the incidence of "future bias" is higher ($p = 0.02$ and $p < 0.01$ respectively in tests of proportions, but when dependence is accounted for through clustering, only the difference in future bias is significant). The proportion of students who stick to their plans is not significantly different across treatment and control (38% vs. 35%, $p = 0.22$).

[20] Also note that in reporting the incidence and magnitudes of bias below, we exclude erroneous consumption plans which make classification difficult, but keep all observations in treatment effect regressions

[21] It should be noted that treatment itself does not have an effect on math or verbal scores as reported in 1, which is consistent with the findings in Alan and Ertac (2018) that treatment does not affect school performance but does reduce behavioral problems.

Figure 1: Types of Bias



Notes: This figure shows the percentage of children who are time consistent or who have present or future bias. Erroneous consumption plans are excluded. (Clustered) error bars indicate the 95% confidence intervals of the mean.

In a regression model, the increase in future bias remains significant at the 1% level (Table 6, column 5): treated students are 9 percentage points more likely to have future bias, while there is no significant treatment effect on the incidence of present bias and time inconsistency, or a continuous measure of present bias (Columns 3, 4 and 2, respectively). On average, treated children are estimated to consume 0.4 chocolates less on the first day than control children (Column 1), while their plans showed a 0.17 chocolate difference.

Another question is whether there is a link between children's commitment behavior and their actual present bias, as evidence for sophistication. We are able to study this freely of selection, because we present a large random sample of the children with the four chocolates even if they had committed. Although the incidence of present bias is higher among those who committed (48% vs. 52% in the control group), this association -in fact, any association between bias type and commitment- does not reach statistical significance (Appendix Table A4). We also study whether there is more sophistication in the treatment group, by looking at the incidence of "ex-post right" commitment choices. By classifying children who commit and turn out to be present biased, and children who do not commit and turn out to be time-consistent/future biased as making right choices, we find that treatment leads to a 5 percentage point increase in sophistication, but this is

only significant at the 10 percent level (Appendix Table A4, Column 4).

Relatedly, one can ask whether the treated children would still eat less chocolates than untreated children if the commitment device worked for all who demanded it. The answer is yes–given a fully restricting commitment device, treated children would still eat 0.32 fewer chocolates than control children. This finding suggests that the treatment leads to a reduction in consumption that would not be possible to achieve by the mere availability of an external commitment device.

Table 6: Treatment Effects on Present Bias

	(1) Eaten (day 1)	(2) Present bias	(3) Present bias>0	(4) Present bias=0	(5) Present bias<0
Treatment	-0.403**	-0.222	-0.041	-0.046	0.089***
	(0.16)	(0.16)	(0.04)	(0.03)	(0.03)
Male	0.492***	0.487***	0.152***	-0.074***	-0.081***
	(0.06)	(0.07)	(0.02)	(0.02)	(0.01)
Cognitive ability	-0.037	-0.031	-0.027*	0.048***	-0.020
	(0.04)	(0.04)	(0.01)	(0.02)	(0.01)
Likes chocolate	0.167	-0.050	-0.033	0.102	-0.055
	(0.17)	(0.22)	(0.07)	(0.08)	(0.06)
Controls	✓	✓	✓	✓	✓
Control mean	2.61	0.70	0.50	0.37	0.13
R2	0.12	0.08			
N	1910	1907	1944	1944	1944

Standard errors are clustered at the school level and shown in parentheses. The dependent variable in Column 1 is the number of chocolates eaten on the first day. The dependent variable in Column 2 is a categorical variable taking values between -4 and 4, with increments of 1. The dependent variables in columns 3-5 are the incidence of present bias, time consistency, and future bias, respectively. Columns 1 and 2 present the results of OLS regressions, while columns 3-5 present results from logistic regressions. Controls include a dummy for errors in consumption plans, experiment hour, experimenter dummies, and a dummy for students having comprehension difficulties. * p<0.10, ** p<0.05, *** p<0.01.

4.5 Heterogeneous Treatment Effects

Given that our outcome measures have strong associations with certain baseline variables, it may be interesting to study whether treatment effects would also be heterogeneous with respect to these baseline variables. One such variable is gender. In the control group, males are 14 percentage points more likely to display present bias and 14 percentage points more likely to eat all chocolates on the first day, and these associations are significant at the 1 percent level. Boys are also 5 percentage points less likely to display future bias than girls at baseline ($p < 0.024$). These findings are consistent with the literature suggesting that boys may have more difficulty to self-regulate than girls (e.g. Matthews et al. (2009)).

Table 7 shows that girls display a significant reduction in present bias in response to the treatment (Column 1), while boys do not. The treatment effect on future bias is also significant at the

1% level in the case of girls (column 7), and boys also display an increase in future bias significant at the 10% level. While the size of the reduction in present bias for girls and boys is significantly different (columns 1 vs. 2, $p < 0.001$), the increase in future bias is not significantly different across gender (columns 7 vs. 8).

To understand this result further, we look at whether commitment behavior also displays heterogeneity in gender. First, we do not document any heterogeneity of treatment effects on planned consumption or the demand for commitment by gender (regressions available upon request). In the control group, girls' and boys' propensity to commit is not significantly different (43% vs. 39%). However, boys who commit are 8 percentage points more likely to actually exhibit present bias than boys who do not–that is, their commitment behavior seems to target actual self-control problems, while commitment demand seems independent of actual present bias in girls (see Appendix, Table A5). In fact, boys' commitment behavior is more strongly associated with present bias than girls', and this difference is significant at the 1% level.

This pattern is actually similar in the treatment group as well (regressions available upon request), suggesting that the actual decline in present bias in treated girls does not manifest itself in higher sophistication about the (lower) need for a commitment device.

Table 7: Heterogeneous Treatment Effects on Gender

	Present bias		Present bias>0		Present bias=0		Present bias<0	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Girl	Boy	Girl	Boy	Girl	Boy	Girl	Boy
Treatment	-0.419**	-0.033	-0.075	-0.005	-0.039	-0.056*	0.120***	0.061*
	(0.16)	(0.17)	(0.05)	(0.04)	(0.04)	(0.03)	(0.03)	(0.04)
Cognitive ability	-0.000	-0.053	-0.028	-0.024	0.053***	0.045**	-0.023	-0.019
	(0.06)	(0.07)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Likes chocolate	-0.133	-0.060	-0.101	0.006	0.218	0.027	-0.069	-0.032
	(0.36)	(0.26)	(0.10)	(0.08)	(0.14)	(0.09)	(0.09)	(0.06)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
Control mean	0.33	0.83	0.40	0.55	0.40	0.32	0.20	0.13
p-value (Girl=Boy)	0.00		0.02		0.56		0.46	
R2	0.08	0.05						
N	922	985	934	1010	934	1010	934	994

Standard errors are clustered at the school level and shown in parentheses. Columns 1-2 present the results from OLS regressions, while columns 3-8 present the results from logit regressions. Controls include a dummy for errors in consumption plans, experiment hour, experimenter dummies, and a dummy for students with comprehension difficulties.
* p<0.10, ** p<0.05, *** p<0.01.

We also study whether treatment effects are heterogeneous over cognitive ability, and how much the child likes chocolate to start with. We hypothesize that effects could be heterogeneous over IQ because smarter children may be less present-biased (as is indeed the case in our data) and could have less room for treatment effects. In contrast, children who like chocolate more could be more prone to temptation. However, we do not find that the treatment effects are heterogeneous over these two individual characteristics (see Table A6 and A7 in the Appendix).

5 Concluding Remarks and Discussion

This paper tests the effect of an intervention on forward-looking behavior, on the demand for commitment and intertemporal biases in the context of consumption. We find that the treatment does not affect the demand for commitment on average. Overall, treated children eat fewer chocolates immediately, when given a chance to consume them today and/or tomorrow. This is partly because they make more patient plans in advance, and partly because they actually consume even less than they had planned for. In this sense, we find that an intervention that imparts a forward-looking mindset can lead to significantly lower immediate consumption of a temptation good, and actually lead to "underconsumption" from an intertemporal planning perspective.

There are several mechanisms through which the intervention may have generated the effects. It may be that treated children develop a habit of thinking about the future at every decision they are faced with, and applying this both at the plan stage and at the consumption stage, they may leave even more chocolates for the second day than they had planned. If this is true, children would be underestimating, at the planning stage, how patient/future-oriented they have become. Alternatively, internalizing the messages in the intervention and driving utility from having acted patiently (viewing oneself as a patient, self-controlled person) could be a way through which the intervention works. Treated children may have wanted to test their skills in this regard or confirm this "identity" (a la self-signaling, see Bodner and Prelec (2003)), when faced with a well-known temptation good.

The focus of the literature on intertemporal choice has largely been present bias, since that is the type of bias that generates self-control problems and overconsumption. However, future bias ("reverse time inconsistency" or "increasing impatience") is also commonly found in the data, both in studies that use price lists or monetary reward tradeoffs (e.g. Bleichrodt et al. (2016), Rohde (2019), Takeuchi (2011)) as well as a consumption good as in our case (Alan and Ertac (2015)). The intervention we study here seems to make children more "future biased", in the sense that they make a plan now, and when the time comes, they consume even less than they planned for.

Although there are strong effects on intertemporal choices, Alan and Ertac (2018) do not document effects of the intervention on any type of time inconsistency in the context of an intertemporal

consumption task. Our results reveal that alternative measures of present bias/time inconsistency can uncover different effects of the same intervention.

We should also note that the effects we document here are short-term. However, Alan and Ertac (2018) study longer-run effects of the same intervention on intertemporal allocations, up to three years after the program, and document largely persistent effects. Interestingly, persistence of the effects is heterogeneous on gender–girls still make more patient choices in the long-run, whereas effects on boys fade out. Our results may provide an explanation for these findings, since the increase in self-control displayed by girls may indicate a coping mechanism with temptation that may become a habit, and persist long after the intervention ends.

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Appendix A. Additional Tables

Table A1: Treatment effect on intertemporal gift allocations-Alan-Ertac (2018) replication

	(1)	(2)
Treatment	-0.342**	-0.344***
	(0.16)	(0.11)
Male		-0.059
		(0.05)
Cognitive ability		-0.364***
		(0.04)
Likes chocolate		0.180
		(0.24)
Controls	×	✓
R2	0.01	0.08
N	2242	2091

The dependent variable is the number of gift tokens allocated to today in the "convex time budget task" out of a budget of 5 tokens. OLS regressions are reported. Controls include experiment hour, experimenter dummies, and a dummy for children with comprehension difficulties. Standard errors are clustered at the school level and shown in parentheses.
* p<0.10, ** p<0.05, *** p<0.01.

Table A2: Correlates of Math Scores in the Control Group

	Math Score					
	(1)	(2)	(3)	(4)	(5)	(6)
Tokens allocated to today in CTB	-0.134***					
	(0.03)					
Present bias		-0.042				
		(0.04)				
Present bias>0			-0.185*			
			(0.11)			
Present bias<0				0.140		
				(0.15)		
Present bias=0					0.122	
					(0.10)	
Commitment						-0.113
						(0.09)
Male	0.087	0.105	0.125	0.106	0.109	0.162**
	(0.10)	(0.11)	(0.10)	(0.11)	(0.10)	(0.07)
Cognitive ability	0.610***	0.671***	0.676***	0.680***	0.672***	0.662***
	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)
Constant	3.023***	2.728***	2.773***	2.677***	2.646***	2.713***
	(0.11)	(0.10)	(0.11)	(0.10)	(0.09)	(0.08)
R2	0.19	0.16	0.17	0.17	0.17	0.18
N	1088	961	979	979	979	2125

The dependent variable is standardized scores on an objective math test. OLS regressions are reported. Standard errors are clustered at the classroom level and shown in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Table A3: Correlates of Verbal Scores in the Control Group

	Verbal Score					
	(1)	(2)	(3)	(4)	(5)	(6)
Tokens allocated to today in CTB	-0.098***					
	(0.03)					
Present bias		-0.013				
		(0.03)				
Present bias>0			-0.048			
			(0.08)			
Present bias<0				-0.011		
				(0.13)		
Present bias=0					0.055	
					(0.07)	
Commitment						-0.106*
						(0.06)
Male	-0.120	-0.101	-0.105	-0.112	-0.107	-0.187***
	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)	(0.06)
Cognitive ability	0.539***	0.588***	0.591***	0.590***	0.589***	0.637***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Constant	3.762***	3.548***	3.563***	3.546***	3.520***	3.727***
	(0.08)	(0.07)	(0.07)	(0.07)	(0.07)	(0.08)
R2	0.17	0.15	0.15	0.15	0.15	0.18
N	1092	965	983	983	983	2130

The dependent variable is standardized scores on an objective verbal test (Turkish). OLS regressions are reported. Standard errors are clustered at the classroom level and shown in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Table A4: Correlation Between Commitment and Present Bias

	(1)	(2)	(3)	(4)
	Present bias>0	Present bias=0	Present bias<0	Rationality of Commitment
Commitment	0.027	-0.006	-0.021	
	(0.04)	(0.03)	(0.04)	
Male	0.144***	-0.055***	-0.090***	0.011
	(0.03)	(0.02)	(0.03)	(0.03)
Cognitive ability	0.007	-0.027**	0.022	0.010
	(0.02)	(0.01)	(0.02)	(0.01)
Treatment				0.049*
				(0.03)
Controls	×	×	×	✓
N	977	977	977	1847

The dependent variables in columns 1-3 are the incidence of present bias, time consistency, and future bias, respectively. Erroneous plans are excluded. The dependent variable in the fourth column captures whether children committed when they actually should have and not committed when they did not need to. Marginal effects from logit regressions are reported. Controls include experiment hour, experimenter dummies, and a dummy for children with comprehension difficulties. Standard errors are clustered at the classroom level and shown in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A5: Correlation Between Commitment and Present Bias-Heterogeneity by Gender

	Present bias>0		Present bias=0		Present bias<0	
	(1)	(2)	(3)	(4)	(5)	(6)
	Girl	Boy	Girl	Boy	Girl	Boy
Commitment	-0.035	0.084*	0.041	-0.078*	-0.007	-0.007
	(0.05)	(0.05)	(0.05)	(0.04)	(0.04)	(0.03)
Cognitive ability	-0.010	0.024	0.033	0.010	-0.022	-0.031**
	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Likes chocolate	-0.009	-0.022	0.280	0.046	-0.159*	-0.017
	(0.15)	(0.13)	(0.20)	(0.14)	(0.09)	(0.07)
p-value(Commitment, Girl=Boy)	0.071		0.047		0.958	
N	461	516	461	516	461	516

The dependent variables in columns 1-6 are the incidence of present bias, time consistency, and future bias, respectively. Erroneous consumption plans are excluded. Marginal effects from logit regressions are reported. Standard errors are clustered at the classroom level and shown in parentheses.
* p<0.10, ** p<0.05, *** p<0.01.

Table A6: Heterogeneous Treatment Effects-IQ

	Commitment		Present bias>0		Present bias=0		Present bias<0	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Low IQ	High IQ	Low IQ	High IQ	Low IQ	High IQ	Low IQ	High IQ
Treatment	-0.022	0.020	-0.017	-0.068	-0.062	-0.023	0.084**	0.095***
	(0.03)	(0.05)	(0.05)	(0.05)	(0.04)	(0.04)	(0.04)	(0.03)
Male	0.030	0.011	0.147***	0.162***	-0.087***	-0.074**	-0.060*	-0.094***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.02)
Likes chocolate	-0.142	0.054	0.012	-0.047	0.054	0.126	-0.062	-0.062
	(0.11)	(0.09)	(0.11)	(0.09)	(0.07)	(0.14)	(0.08)	(0.06)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
Control mean	0.48	0.36	0.47	0.48	0.35	0.42	0.18	0.11
p-value(Treatment, Low IQ=High IQ)	0.322		0.140		0.379		0.285	
N	849	1267	780	1164	780	1164	776	1155

The dependent variable in columns 1-2 is the binary for the decision to buy the commitment device. The dependent variables in columns 3-8 is the incidence of present bias, time consistency, and future bias, respectively. Controls include a dummy for errors in consumption plans, experiment hour, experimenter dummies, and a dummy for children with comprehension difficulties. Marginal effects from logit regressions are reported. Standard errors are clustered at the school level and shown in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Table A7: Heterogeneous Treatment Effects-Preferences for Chocolate

	Commitment		Present bias>0		Present bias=0		Present bias<0	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Likes less	Likes more	Likes less	Likes more	Likes less	Likes more	Likes less	Likes more
Treatment	-0.020	0.034	-0.062	-0.020	-0.042	-0.051	0.110**	0.074***
	(0.04)	(0.05)	(0.05)	(0.05)	(0.04)	(0.04)	(0.04)	(0.03)
Cognitive ability	-0.055***	-0.017	-0.008	-0.028**	0.036*	0.049**	-0.028**	-0.020
	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
Male	-0.009	0.037*	0.142***	0.162***	-0.032	-0.112***	-0.114***	-0.052***
	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
Control mean	0.44	0.38	0.40	0.53	0.44	0.35	0.16	0.12
p-value(Treatment, Likes less=Likes more)	0.289		0.370		0.772		0.667	
N	925	1191	850	1094	850	1094	850	1078

The dependent variable in columns 1-2 is the binary for the decision to buy the commitment device. The dependent variables in columns 3-8 is the incidence of present bias, time consistency, and future bias, respectively. Marginal effects from logit regressions are reported. Controls include experiment hour, experimenter dummies, and a dummy for children with comprehension difficulties. Standard errors are clustered at the classroom level and shown in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Appendix B. Experimental Instructions

Chocolate game

Dear students, remember that we told you that we would come again after 2 weeks and when we come back two weeks later, you would all get 4 pieces of chocolate as a gift [show chocolates]. What day is it today? [tell the day: for example Thursday] On what day will we come here two weeks later? Thursday again. Now think about 2 days. That first day we'll be coming here, and the day after. [Write 1st day, 2nd day on the board]. You can eat the four chocolates in those two days the way you want. Think about how you'd like to eat them in two days, what plan you would make.

One of your friends, for example, could say "I want to eat them all on the 1st day" [write 4 and 0 on the board, below 1st and 2nd day]. Another friend may want to eat 3 the first day and leave 1 to the next day. Another would make it 2 and 2, another 1 and 3, and another 0 and 4. Each one of you will decide on their own. [write all of the examples on the board under one another]. The decision is up to you. Is there a right or wrong choice? NO. Now, everyone open page X on your booklet and think. The chocolates will come two weeks later. Fill in the table according to how you would like to eat your 4 chocolates. However, be very careful, because there is a small probability that we won't let you change your plan afterwards, meaning that when we come, we say: "you wrote that you wanted that many chocolates on this day, so that's what you can get today". Okay? This is your decision to make, don't tell anyone else!

Decision Sheet for Plan:

How would I like to eat my 4 chocolates?	Number of Chocolates I Will Eat the 1st Day	Number of Chocolates I Will Eat the 2nd Day	Total
Please write in these boxes how many chocolates you plan to eat each day			4

TOTAL must equal 4, remember, you will have 4 chocolates!

Now, remember we told you that you will have 4 chocolates, and you can eat them however you want over 2 days. Two weeks later on Thursday [change according to what day it is] when we come back, we will give those 4 chocolates to each one of you. That day, you will be able to eat

as many as you want. Those you don't eat that day will be left over for the next day. Let's say on the 1st day you went ahead and ate 3 chocolates. How many will be left for the next day? 1. If you choose to eat 2 the first day, 2 will remain for the second day. Remember the plan you just made? You won't have to act exactly as in that plan, so when the day comes you will be free to change your plan. Do you understand that?

[Now give an example: for instance, when we come 2 weeks later, we will give Gulbahar her 4 chocolates. If she says she wants to eat them all, can she do so? Yes. If she wants to, she can eat 3 and leave one to the next day. If she wants to, she can eat 2 and leave 2. If she wants to, she can eat 1 and leave 3 to the next day, or leave all to the next day. So, THAT DAY you will be able to decide how many of your chocolates you want to eat that day. You will be free to do so. Do you understand?]

Now there is something else we'll tell you. Remember you just planned how many chocolates you would leave to the 2nd day? Maybe when the 1st day comes and you see the chocolates in front of you, you will feel like eating more than you planned. For that, we now have two bags here: one of them has a lock, the other doesn't. What's the difference between them?

The locked bag cannot be opened until the 2nd day. So, on the 1st day, you won't be able to take the chocolates you put here even if you want to. You will be able to get them only on the 2nd day. On the 1st day, you can only take those chocolates you put in the unlocked bag.

Let's give an example:

Let's say you want to eat 2 chocolates the 1st day, and 2 chocolates the 2nd day. If you put those you'll eat on the 2nd day in the locked bag, this means you can get those 2 chocolates only on the 2nd day, not on the 1st day. On the 1st day, you can only take the 2 chocolates from the unlocked bag. Let's say on the 1st day, you wanted to eat not 2 but 3 chocolates. But you don't have 3 chocolates in the unlocked bag, so you can't eat 3. You can only eat 2. You will get the remaining 2 the next day when the locked bag will be opened. So by putting chocolates in the locked bag, you commit yourself to eating 2 the 1st day and 2 the 2nd day. Therefore, even if you want to eat more chocolates the 1st day, you won't be able to because you locked the chocolates you planned for the 2nd day.

Now, let's say one of your friends did not put any chocolate in the locked bag. All 4 of her chocolates are in the unlocked bag. We come over to your class on Thursday in two weeks. Does your friend have to eat all 4 chocolates the 1st day because she didn't put any in the locked bag, and won't there be any left for the next day? [ask students]

No! She has 4 chocolates in the unlocked bag. But she is free to eat however many of them she wants to. She can take 1 and leave 3, take 2 and leave 2, take 1 or eat all 4. So she can leave some to the next day if she wants to.

So if you don't put any in the locked bag, when the chocolates come over, you can decide right

then how many you want to eat. You are free. If you put any chocolates in the locked bag, you cannot get those chocolates on the 1st day even if you want to, and you commit yourself to that now.

However, putting chocolates in the locked bag is not for free. Apart from the regular gifts you will get, we will give each one of you three of these smaller gifts. If you want to use the locked box, you will get 2 of these smaller gifts instead of 3. Okay?

So who would want such a thing and why?

For example, think of a certain child. He/she [22] says "Now I made a plan and I want to eat some on the first day and leave some for the second day. But when the chocolates come over and I see the 4 chocolates in front of me, I may want to eat more, maybe I'll eat all 4 and I'll regret it, I will be sad that there won't be any left for the 2nd day." So he/she may put some in the locked bag to force himself/herself to stick to his/her plan.

Now think about another child. This one thinks: "I want to decide 2 weeks later and be free to choose whatever I want when that day comes. If I want to, I'll eat all 4, or I can eat 2 or 3 or 1, however I want." This child would not put any chocolates in the locked bag. Yet another child might say "I don't need the locked bag to stick to my plan". This child would not put any chocolates in the locked bag either. Can we say that some of these children's choices are right and some are wrong? NO! Their decisions are completely up to them.

Now think about it. What do you want to do? Remember the plan you made about how many you would want to eat the 1st day and how many the 2nd day? Would you like to lock the chocolates you would want to eat on the 2nd day?

Now let's turn to Page 3 and mark your decision there.

[22] Note that there is no gender pronoun in Turkish, so these examples can be given without any allusion to gender.