Supplement to "Eliciting temptation and self-control through menu choices: a lab experiment"

December 17, 2017

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A Menu preferences

Tables 1 & 3 in the main text present a breakdown of the main preference orderings over $\mathcal{M} := \{\{0\}, \{1\}, \{0,1\}\}$ for two types of classifications. The first classification is based solely on the rank number (1, 2 or 3) assigned by a given subject to each of the 3 menus; the second classification accounts for whether the subject was willing to pay to replace his second best option with his top option, and his last option with his second best option (WTP expressed either in dollars or minutes on the task). Section A1 provides additional details on the sensitivity of rank assignment to framing, the least popular orderings (grouped under "other ordering" in the main text) and the distribution of WTP for the time versus money conditions and top (second) versus second (last) comparisons. Section A2 presents alternative classifications to Tables 1 & 3, which account differently for inconsistencies between WTP and the initial ordering $\succeq_1$.

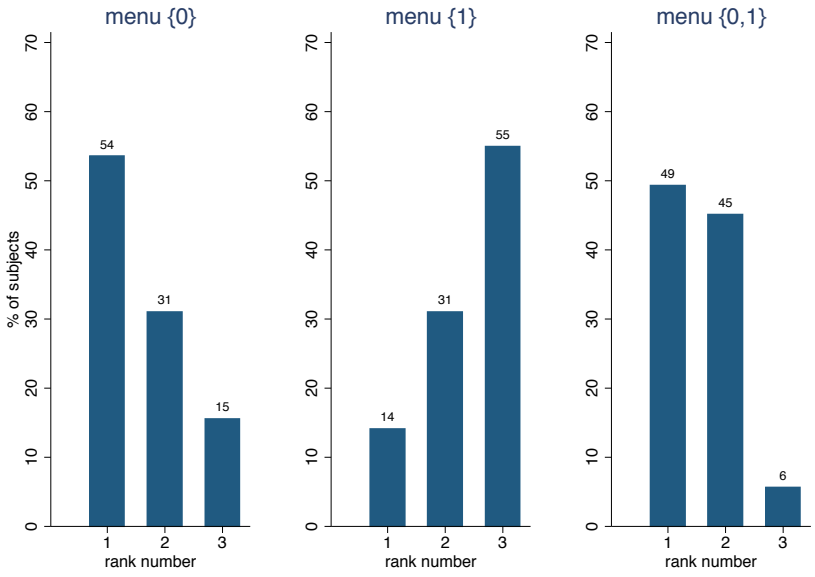
A.1 Basic statistics on rank orderings and *WTP*

List order and rank assignment To submit their initial ranking, subjects entered a number (1, 2 or 3) in a text box right next to each of the 3 menus listed in a column. To minimize potential order effects, subjects were randomly assigned to one of two list orders, $l_1 = (\{0,1\}, \{1\}, \{0\})$ and $l_2 = (\{1\}, \{0\}, \{0,1\})$, meaning $\{0,1\}$ appeared at the top (bottom) of list l_1 (l_2) and $\{0\}$ never appeared at the top. Because options listed first are in general more likely to be assigned rank 1 than those listed last, the choice of lists was made so as to reduce the likelihood of observing a strict preference for $\{0\}$ (characteristic of temptation) simply because of order effects.

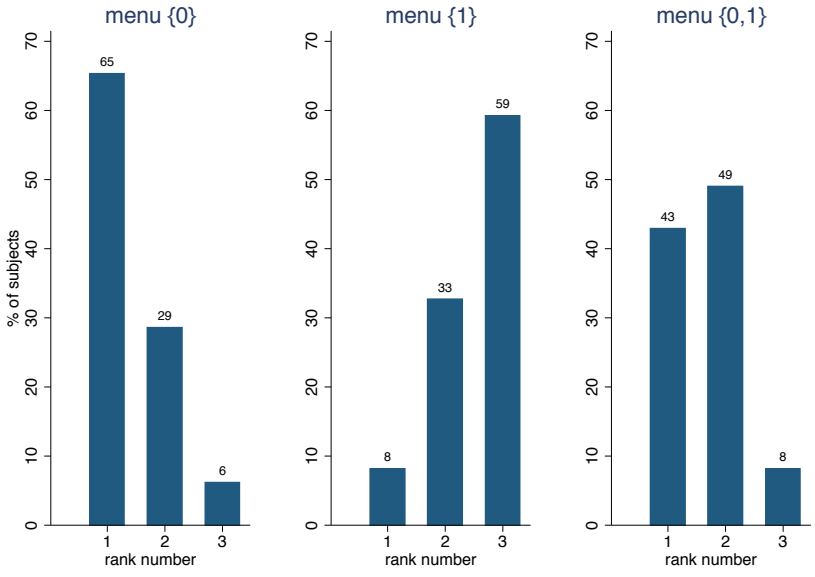
In total, 59.2% (71/120) of subjects saw list order l_1, while the remaining 40.8% (49/120) saw list order l_2. Figure 1 shows the frequency with which each menu was assigned rank 1, 2 and 3 for each of the two list orders. Order effects appear to be very minor. The likelihood that $\{0\}$ gets assigned rank 1 increases by 11.8 ppts when $\{0\}$ appears second on the list instead of last ($t_{118} = -1.29$, $p = 0.201$) and the modal rank for $\{0,1\}$ switches from 1 to 2 when $\{0,1\}$ appears last instead of first. However, the 3 menus $\{0\}$, $\{1\}$ and $\{0,1\}$ have the same median rank of 1, 3 and 2 in both lists; the mean ranks are also very close: 1.62 in l_1 vs. 1.41 in l_2 for $\{0\}$ ($t_{118} = 1.65$, $p = 0.103$), 2.41 vs. 2.51 for $\{1\}$ ($t_{118} = -0.79$, $p = 0.434$) and 1.56 vs. 1.65 for $\{0,1\}$ ($t_{118} = -0.79$, $p = 0.434$). Menu $\{0\}$ appears to be the most popular option by almost all metrics.

Figure 1: Distribution of ranks for each menu by list order

(a) List $l_1 = (\{0,1\},\{1\},\{0\})$



(b) List $l_2 = (\{1\},\{0\},\{0,1\})$



Least popular orderings Tables 1 & 3 in the main text present the distribution of menu preferences, highlighting the 7 most popular orderings and grouping the remaining orderings under the category "other ordering". The table below presents a complete breakdown of this "other ordering" category, both for the classification based on initial ranking and for the classification based on WTP. Only 3 subjects have preferences consistent with models of sophisticated present bias with no uncertainty i.e., $\{0\} \succ_1 \{0,1\} \sim_1 \{1\}$.

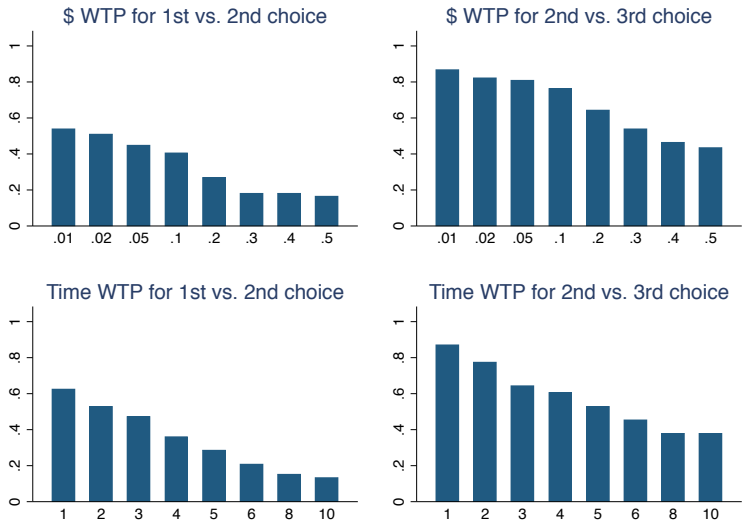
Table 1: Breakdown of "other ordering" category

	Classification based on ranking		Classification based on WTP	
Preference ordering	% subjects	(freq.)	% subjects	(freq.)
$\{1\} \sim_1 \{0\} \succ_1 \{0,1\}$	3.3%	(4/120)	0.8%	(1/120)
$\{1\} \succ_1 \{0\} \succ_1 \{0,1\}$	–	–	0.8%	(1/120)
$\{1\} \succ_1 \{0\} \sim_1 \{0,1\}$	0.8%	(1/120)	–	–
$\{1\} \sim_1 \{0,1\} \succ_1 \{0\}$	2.5%	(3/120)	2.5%	(3/120)
$\{0\} \succ_1 \{0,1\} \sim_1 \{1\}$	2.5%	(3/120)	2.5%	(3/120)
$\{0,1\} \succ_1 \{0\} \sim_1 \{1\}$	–	–	1.7%	(2/120)
$\{0,1\} \sim_1 \{0\} \sim_1 \{1\}$	0.8%	(1/120)	–	–
Total	10.0%	(12/120)	8.3%	(10/120)

Time *WTP* versus $ *WTP* As mentioned in the main text, the distribution of WTP is very stable across conditions (time vs. money). For each price in the MPL, Figure 2 shows the proportion of subjects who were willing to pay that price in order to receive their preferred menu, comparing separately the top menu to the second best menu and the second best to the last menu. When a subject assigned the same rank number to two menus, $\{0\}$ was arbitrarily designated as the first menu against $\{1\}$ or $\{0,1\}$, and $\{1\}$ was designated as the first menu against $\{0,1\}$. For instance, a subject who assigned the ranking $\{0\} \sim_1 \{0,1\} \succ_1 \{1\}$ was asked how much he would be willing to pay to replace $\{0,1\}$ with $\{0\}$ (i.e., $\{0\}$ first and $\{0,1\}$ second).

As can be seen from the figure, WTP tends to be higher for second best versus last than for top versus second best. This is due to $\{1\}$ being ranked last by a large fraction of subjects; preferences are less pronounced when comparing $\{0\}$ to $\{0,1\}$. Importantly, the distribution of WTP is very similar across WTP conditions. The p-value from a Kolmogorov-Smirnov test of equality of distributions is 0.972 for top versus second best ($D = 0.085$), and 0.326 for second best versus last ($D = 0.165$).

Figure 2: Distribution of WTP by condition and comparison of ranks



Notes: Each graph shows the fraction of subjects who were willing to pay to replace one menu with the menu ranked just above for each payment value, ranging from \$0.01 to \$0.50 (1 to 10 minutes) in the dollar (time) WTP condition. The distributions are shown separately for top versus second choice and second versus last choice.

A.2 Alternative classifications of menu types

A.2.1 Classification excluding subjects with ($\sim_1$, $WTP > 0$)

In the experiment, 16 subjects assigned the same rank to two menus and yet were willing to pay to replace one menu with the other. This behavior can be regarded as anomalous if subjects' preferences are complete and respect monotonicity in money. The classification presented in Table 2 excludes those 16 subjects. Results are robust to this alternative classification: close to one quarter of subjects exhibit self-control preferences (menu type SSB_{-0}), a proportion which is significantly different from what would be observed if subjects had picked a rank ordering at random.

Table 2: Alternative classification excluding cases ($\sim_1$, $WTP > 0$)

Preference ordering	menu type	% subjects	(N)	random benchmark	p-value
$\{0\} \succ_1 \{0,1\} \succ_1 \{1\}$	SSB_{-0}	**24.0%**	**(25)**	7.7%	<0.001
$\{1\} \succ_1 \{0,1\} \succ_1 \{0\}$	SSB_{-1}	3.8%	(4)	7.7%	0.194
$\{0,1\} \succ_1 \{0\} \succ_1 \{1\}$	$FLEX_{-0}$	8.7%	(9)	7.7%	0.711
$\{0,1\} \succ_1 \{1\} \succ_1 \{0\}$	$FLEX_{-1}$	6.7%	(7)	7.7%	0.855
$\{0,1\} \sim_1 \{0\} \succ_1 \{1\}$	STD_{-0}	**32.7%**	**(34)**	7.7%	<0.001
$\{0\} \succ_1 \{1\} \succ_1 \{0,1\}$	$GUILT$	4.8%	(5)	7.7%	0.356
$\{0\} \sim_1 \{1\} \sim_1 \{0,1\}$	IND	10.6%	(11)	7.7%	0.267
other ordering		8.7%	(9)	46.1%	<0.001
Total		100%	(104)	100%	

Notes: The reported p-values correspond to the result of a two-sided binomial test that the observed frequency is equal to the benchmark frequency of selecting one of the 13 rank orderings at random. Option 1 (0) refers to reading (not reading) the story.

A.2.2 Classification excluding subjects with ($\sim_1$, $WTP > 0$) or ($\succ_1$, $WTP = 0$)

The initial procedure used to elicit subjects' preference ordering implemented their reported ranking probabilistically, with higher odds of receiving a menu ranked strictly higher. This procedure incentivizes a subject with a strict preference ordering to report his true ranking. However, it does not strictly incentivize a subject who is indifferent between two options to assign the same ranking to these options; the reason is that such a subject would take any probability distribution over

these two options (provided he satisfies some form of independence). As a result, it was possible in principle to observe subjects who reported a strict ranking in the initial elicitation stage, and yet were not willing to pay in any way for the option they had initially ranked strictly higher, that is, subjects with ($\succ_1$, $WTP = 0$). As an additional robustness check, I present in Table 3 the typology of menu preferences for subjects whose initial rank ordering is fully consistent with their WTP behavior; this typology therefore excludes the 60 subjects for whom ($\sim_1$, $WTP > 0$) or ($\succ_1$, $WTP = 0$) in any of the two comparisons made (first versus second and second versus last). Among the remaining 60 subjects, those with self-control preferences represent an even larger part of the sample (over 40%) and this number is again significantly different from what would be observed if subjects had picked a rank ordering at random.

Table 3: Alternative classification excluding cases ($\sim_1$, $WTP > 0$) and ($\succ_1$, $WTP = 0$)

Preference ordering	menu type	% subjects	(N)	random benchmark	p-value
$\{0\} \succ_1 \{0,1\} \succ_1 \{1\}$	SSB_{-0}	**41.7%**	**(25)**	7.7%	<0.001
$\{1\} \succ_1 \{0,1\} \succ_1 \{0\}$	SSB_{-1}	6.7%	(4)	7.7%	1.000
$\{0,1\} \succ_1 \{0\} \succ_1 \{1\}$	$FLEX_{-0}$	**15.0%**	**(9)**	7.7%	0.047
$\{0,1\} \succ_1 \{1\} \succ_1 \{0\}$	$FLEX_{-1}$	11.7%	(7)	7.7%	0.226
$\{0,1\} \sim_1 \{0\} \succ_1 \{1\}$	STD_{-0}	10.0%	(6)	7.7%	0.464
$\{0\} \succ_1 \{1\} \succ_1 \{0,1\}$	$GUILT$	8.3%	(5)	7.7%	0.807
other ordering		6.7%	(4)	53.8%	<0.001
Total		100%	(60)	100%	

Notes: The reported p-values correspond to the result of a two-sided binomial test that the observed frequency is equal to the benchmark frequency of selecting one of the 13 rank orderings at random. Option 1 (0) refers to reading (not reading) the story.

B Curiosity for the story

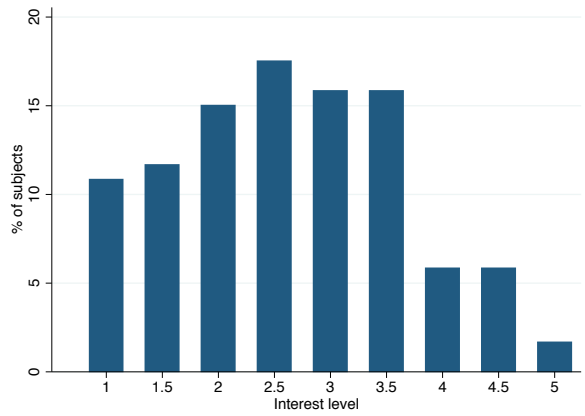
Below I present evidence pertaining to subjects' curiosity for the story. I first discuss their interest for the story ex ante i.e., before performing the task. I then study subjects' interest ex post as measured by their level of attention to the story during the task. Finally, I study the relationship between subjects' propensity to read the story during the task and the exit survey variables (including hypothetical WTP for learning the story and psychometric scales to measure curiosity and conscientiousness).

B.1 Ex ante interest for the story (Period 1)

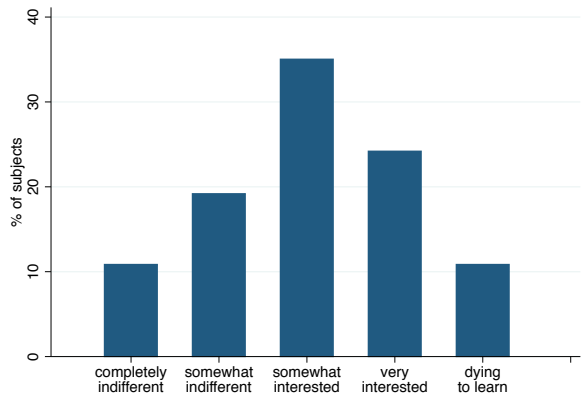
In Section E of Period 1, after having elicited beliefs about their likelihood of reading the story if offered the chance, subjects were asked two questions about their interest for the story: Q1) *How interested are you in learning whether the selected story was yours?* Q2) *How interested are you in learning the most incredible story among the other participants in this room?* Answers were on a 5-item scale (coded as 1 = "completely indifferent", 2 = "somewhat indifferent", 3 = "somewhat interested", 4 = "very interested", and 5 = "dying to learn"). The distribution of responses pooling Q1 & Q2 is presented in Figure 3.

Figure 3: Level of interest for the story before the task

(a) Mean response to Q1 & Q2



(b) Level of interest on at least one dimension



Notes: In Panel (a), Interest level is the mean response to Q1) "*How interested are you in learning whether the selected story was yours?*" and Q2) "*How interested are you in learning the most incredible story among the other participants in this room?*" (with 1 = "completely indifferent", 2 = "somewhat indifferent", 3 = "somewhat interested", 4 = "very interested", and 5 = "dying to learn"). In Panel (b), a subject is classified as "somewhat interested" if he selected this response for at least one question and selected "completely indifferent" or "somewhat indifferent" otherwise; the other bins are defined in a similar way; $N = 120$.

There is a fairly large spread in terms of level of interest (Figure 3 Panel (a)) and different subjects care differently about the two dimensions (Spearman's $\rho = 0.574$, $p < 0.001$, 95% CI = [0.440, 0.683]; also see contingency table below). However, accounting for these two potential sources of interest in the story, over 70% of subjects said they were at least somewhat interested in learning what the story was and about a third expressed a very high interest (Figure 3 Panel (b)).

Table 4: Interest in learning the story

Interest in learning...	whether own story was selected		
most incredible story among others	Yes	No	Total
Yes	46 63.9% 79.3%	26 36.1% 41.9%	72 100.0% 60.0%
No	12 25.0% 20.7%	36 75.0% 58.1%	48 100.0% 40.0%
Total	58 48.3% 100.0%	62 51.7% 100.0%	120 100.0% 100.0%

Notes: Answer coded as "Yes" if the subject reported being at least somewhat interested in learning the most incredible story among others (learning whether his own story was selected). Pearson's $\chi^2(1) = 17.44$, $p < 0.001$.

B.2 Ex post interest for the story (Period 2)

While students seem to have shown some interest for the story ex ante, it could be that their interest vanished during the task. To verify that, I asked subjects at the end of the experiment to answer a question about the extent to which the story was in their mind during the task. Subjects could choose among 5 possible answers ordered in their level of interest/attention to the story during the task:

1- *I did not think about the selected story at all because I did not care about it.*

2- *I did not think about the selected story at all because I was very concentrated on staring at the number.*

3- *At first I was not thinking about the selected story, but as time passed, I got bored and thought more about it.*

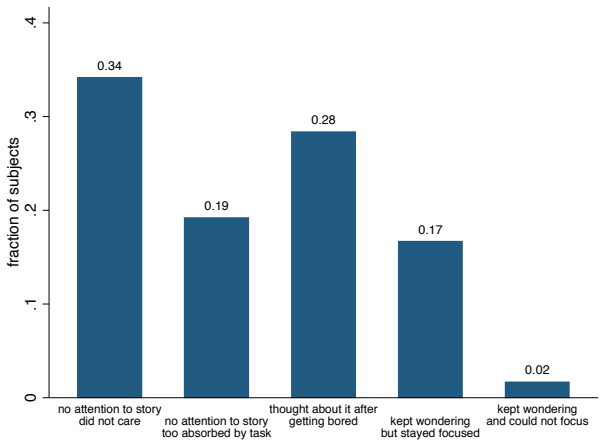
4- *I kept wondering what the story was about and felt really tempted to learn about it but I managed to stay focused on the task.*

5- *I kept wondering about the story and this prevented me from staying focused on the task.*

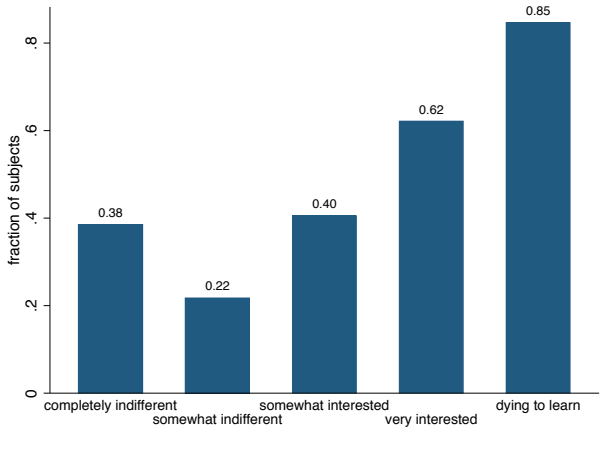
Figure 4 Panel (a) shows the distribution of answers. About half of the subjects said that they thought about the story during the task (answer 3, 4 or 5). Panel (b) shows how this proportion varies as a function of a subject's interest in the story ex ante. Over 70% of those who answered either "very interested" or "dying to learn" had their attention at least partially taken by it during the task. Even among those who had not expressed any interest in the story ex ante, over a third acknowledged thinking about the story during the task. On the other hand, 40% of subjects who expressed a mild interest for the story before the task reported not having thought about the story during the task (the majority because they were too focused on the task). Spearman's correlation coefficient between the attention question and the ex-ante interest level (see Fig. 3(a) Section B.1) is $\rho = 0.451$ ($p < 0.001$, 95% CI = [0.295, 0.583]). A contingency table of the relationship between interest ex ante and interest ex post is reported below (see Table 5).

Figure 4: Attention to the story

(a) Level of attention to the story during the task



(b) Fraction who paid attention by level of interest



Notes: Bins for Panel (b) constructed as in the previous figure; $N = 120$.

Table 5: Interest in the story ex ante versus ex post

Interest in the story...	during the task		
before the task	Yes	No	Total
Yes	35 56.5% 81.4%	27 43.5% 61.4%	62 100.0% 71.3%
No	8 32.0% 18.6%	17 68.0% 38.6%	25 100.0% 28.7%
Total	43 49.4% 100.0%	44 50.6% 100.0%	87 100.0% 100.0%

Notes: For "Interest in the story before the task", answer coded as "Yes" if the subject reported before the task being at least somewhat interested in learning about the story; for "Interest in the story during the task", answer coded as "Yes" if the subject reported having thought about the story during the task. Pearson's $\chi^2(1) = 4.26$, $p = 0.039$.

B.3 Exit survey variables and propensity to read the story

B.3.1 Description of exit survey variables and summary statistics

The exit survey gathered data on basic demographic and academic variables (gender, major, GPA) as well as on subjects' level of interest for the story (hypothetical WTP for learning the story, level of attention to the story during the task). In addition, subjects were asked to explain how they formed their rank ordering of the three menus; a selection of subjects' explanations is reported in Section G.2. Finally, general levels of curiosity and self-control were measured through three psychometric scales, the items of which are listed at the end of the instructions (see Section F.4). The first scale taken from DeYoung et al. (2007) assessed the Big Five personality factor called "conscientiousness", which has been found to be associated with measures of self-control (Ameriks et al. [2007]). The other two scales measured epistemic curiosity defined as the drive to acquire knowledge (EC, Litman and Spielberger [2003]), and curiosity as a feeling of deprivation (CFD, Litman and Jimerson [2004]). Table 6 presents basic summary statistics of the exit survey variables. As expected, scores on the two curiosity scales are highly correlated; furthermore, Conscientiousness is positively correlated with Epistemic Curiosity (Curiosity Index 1). Figure 5 shows the percentage of subjects who reported a positive WTP to read the story as well as the mean WTP depending on their relative preference for commitment to $\{0\}$ versus $\{1\}$.

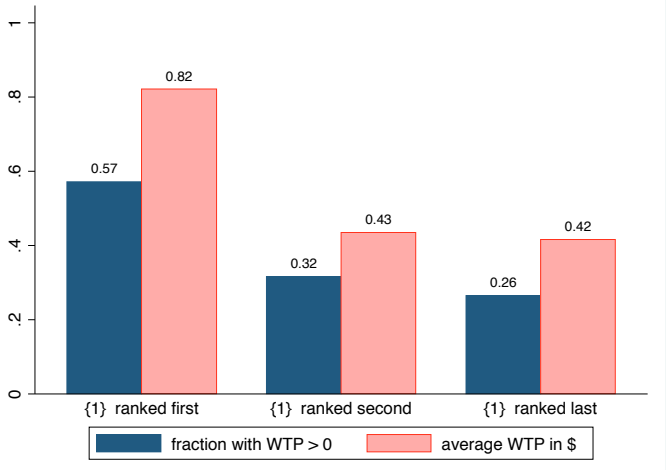
Table 6: Summary statistics of exit survey variables

variable	mean	standard deviation	min-max
female	0.43	0.50	0-1
econ major	0.08	0.28	0-1
GPA[1]	3.39	0.60	1.00-4.00
WTP for the story (in $)	0.47	1.22	0-10
Thought about the story	0.47	0.50	0-1
Curiosity Index 1 (EC)	3.93	0.69	1-5
Curiosity Index 2 (CFD)	3.65	0.58	1.4-4.6
Conscientiousness (B5)	3.33	0.69	1-4.7
Pearson's correlation coefficient	*EC* vs. *CFD* 0.79***	*EC* vs. *B5* 0.29***	*CFD* vs. *B5* 0.04

Notes: [1] *GPA* missing for 36/120 subjects who were beginning freshman year when the experiment took place. The variable *Thought about the story* is equal to 1 if the subject reported having thought about the story during the task (answers 3-4-5 to question of Section B.2). The indices *EC*, *CFD* and *B5* were constructed by taking a subject's mean response for each of the corresponding 10-item scales; items with a negative frame were reverse scored.

Consistent with subjects' ranking, those who assigned rank 1 to {1} were more willing to pay for

Figure 5: *WTP* for the story (hypothetical)



Notes: Reported numbers are answers to the question: "*Consider the following two options: A) Receive a $10 show-up fee and not learn the story, and B) Receive a $ 10 - X show-up fee and learn the story. For what value of X would you have been indifferent between options A) and B)? Please enter a number between 0.00 and 10.00.*" (see Instructions Section F4, Question 4). "{1} ranked first" (resp. "{1} ranked second" and "{1} ranked last") means that the subject assigned rank 1 (resp. 2 and 3) to menu {1}.

the story than those who assigned rank 3 to this menu. Yet even among those who assigned rank 3 to $\{1\}$, about a quarter reported a positive WTP. Although choices were hypothetical, Figure 5 provides additional evidence that subjects were at least somewhat interested in the story and their interest is reflected in their initial rank ordering.

B.3.2 Relationship between exit survey variables and Period 2 choice

One question is whether any of the exit survey variables can predict choice behavior in the experiment. One hypothesis is that more curious (conscientious) individuals as measured by the scales EC and CFD (B5) should be more (less) likely to choose to read the story during the task; furthermore, subjects with a higher interest for the story as measured by *WTP for the story* and *Thought about the story* should be more likely to read the story. Table 7 shows that among the survey variables presented above, very few predict subjects' propensity to read the story; in particular, none of the three psychometric scales (B5, EC and CFD) have any explanatory power. Only a positive WTP for the story is associated with a significant increase in the likelihood of accessing the story. None of these survey variables have any power to predict other outcomes that could capture subjects' interest in the story such as the rank number assigned to menu $\{1\}$ or whether $\{1\} \succ_1 \{0\}$.

Table 7: Linear probability models of the propensity to read the story

	(1)	(2)	(3)	(4)	(5)
Thought about the story	0.234***	0.140*	0.132	0.134	0.133
	(0.080)	(0.083)	(0.086)	(0.086)	(0.087)
WTP for the story > 0		0.266***	0.268***	0.269***	0.268***
		(0.090)	(0.091)	(0.092)	(0.092)
Conscientiousness (B5)			-0.021	-0.009	-0.021
			(0.058)	(0.056)	(0.062)
Curiosity Index 1 (EC)			0.044		0.045
			(0.060)		(0.103)
Curiosity Index 2 (CFD)				0.041	-0.001
				(0.068)	(0.118)
Observations	87	87	87	87	87
Adjusted R^2	0.081	0.158	0.144	0.142	0.133
Mean dependent variable	0.184	0.184	0.184	0.184	0.184

Notes: Linear probability model with the dependent variable equal to 1 if a subject assigned menu $\{0, 1\}$ chose to read the story during the task. *WTP for the story > 0* is an indicator variable equal to 1 if the subject had a positive (hypothetical) WTP to read the story. The other variables are described in the footnote of Table 6.

C Productivity during the attention task

C.1 More on the structure of the task

Subjects in all sessions worked on the attention task for at least 45 minutes (advertised as "up to 60 minutes"), regardless of their initial ranking of the menus and regardless of whether they read the story during the task; in addition, some subjects in the time WTP condition worked on the task for a few more minutes.[1] The timing of the prompts was exactly the same for all subjects and the prompts were unevenly distributed over time.

Table 8: Distribution of prompts and decisions to read the story over time

Task Period #	Period duration	% who read the story (N)	mean time before reading (std)
1	2 min	5.7 (5)	26 sec (21.02)
2	13 min	3.4 (3)	97 sec (150.81)
3	19 min	4.6 (4)	54 sec (49.25)
4	4 min	0.0 (0)	0 sec (–)
5	7 min	4.6 (4)	12 sec (12.14)
Total	45 min	18.4 (16)	43.81 sec (67.60)

Notes: *Period duration* corresponds to the time between any two prompts; time intervals were identical for all subjects and sessions. *% who read the story* refers to the number of subjects assigned menu $\{0, 1\}$ who read the story during a given task period. Finally, *mean time before reading* corresponds to the average amount of time elapsed between the start of a given task period and the point at which a subject entered the code to read the story.

For instance, the first prompt occurred 2 minutes after the start of the task, while the third prompt occurred 19 minutes after the second prompt. When a subject interrupted the task between two prompts in order to read the story, he automatically moved to the next task period; however, at the end of the task, an additional task period with length equal to the time the subject took to read the story was added. For instance, if a subject decided to read the story 5 minutes before prompt #3, then an additional task period of 5 minutes followed by a final prompt was added at the end of the task. This ensured that all subjects answered 5 prompts for payment and spent the same amount of time on the task regardless of whether they read the story or not. In addition,

[1] In Session 1, subjects were told that the task would last exactly 60 minutes. However, the task was shortened to 45 minutes in order to reduce the length of the session and the tediousness of the task. The next sessions had exactly the same structure except for the fact that the task was announced to last "up to 60 minutes".

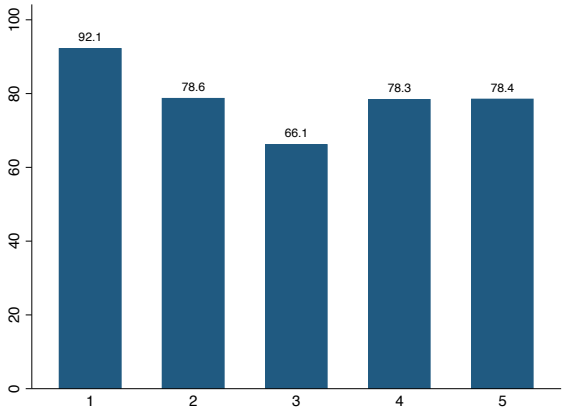
at the very end of the task, 7 subjects who were assigned to the time WTP condition worked for an additional, unpaid, task period. The length of that period corresponded to some additional amount of time those subjects were willing to spend on the task in exchange of replacing their assigned menu with the menu they ranked (weakly) above. This amount of time was randomly chosen for each subject out of the 8 possible durations N (in minutes) of the Multiple Price List, where $N = \{1, 2, 3, 4, 5, 6, 8, 10\}$. On average, these subjects spent 5 more minutes on the task (min: 2 - max: 8), followed by a final prompt, and were required to correctly answer the prompt in order to end the task and move on. The proportion of subjects who chose to read the story is fairly stable across task periods.

C.2 Overall productivity and productivity by menu preferences

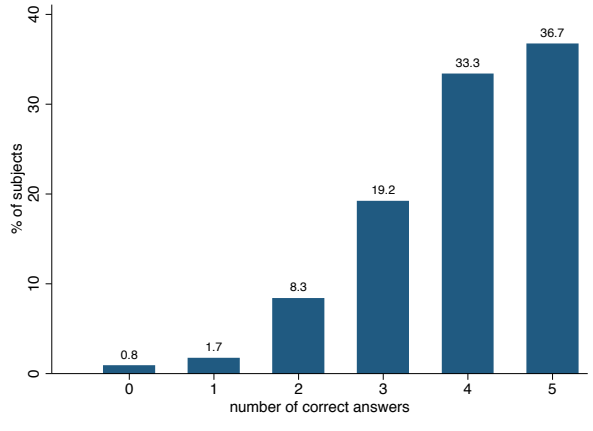
Figure 6 Panel (a) shows the percentage of subjects who correctly answered a given prompt, excluding those who skipped a prompt in order to read the story. More subjects made mistakes on Prompt #3, which occurred after 19 minutes of wait, while the success rate was highest on the first prompt (only 2 minutes of wait). Overall, 70% of subjects provided 4 or 5 correct answers, with 36.7% of subjects who answered all prompts correctly (Figure 6 Panel (b)). There is some heterogeneity in productivity levels across menu types, with lower productivity and earnings for $FLEX_{-0}$, SSB_{-1} and IND types; for the other types, findings appear somewhat sensitive to the classification adopted.

Figure 6: Task performance

(a) % of correct answers by prompt



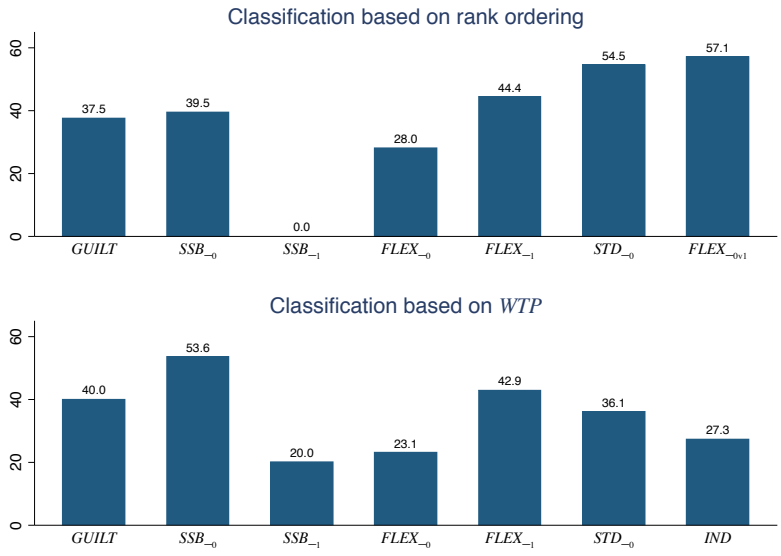
(b) Distribution of productivities across subjects



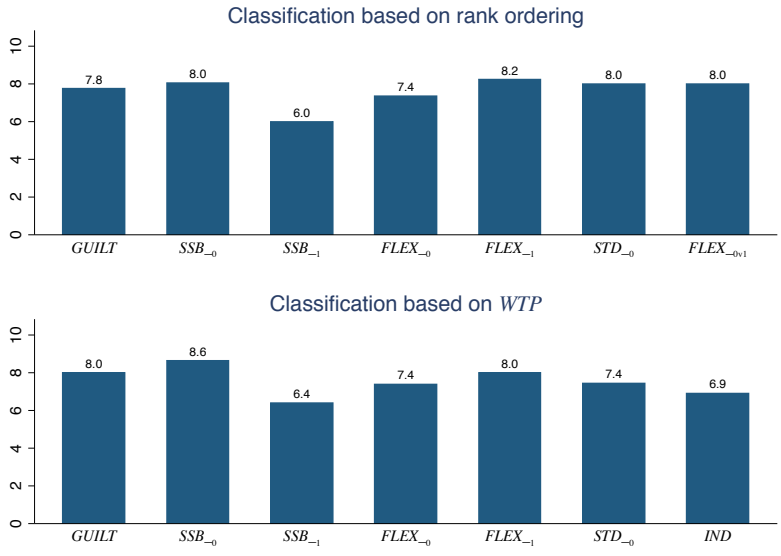
Notes: In Panel (a), subjects who skipped a prompt in order to read the story are excluded from the computation of the success rate for that prompt; numbers 1-5 on the x axis correspond to the task period (see Table 8).

Figure 7: Performance in the attention task by menu type

(a) % of subjects with perfect score



(b) Average earnings in $ from the attention task



Notes: *% of subjects with perfect score* corresponds to the % of subjects who correctly answered all 5 prompts; *Average earnings in $* takes the average over all prompts that counted for payment (5 if the subject did not read the story and 4 if the subject read it). The maximum payment was $10.

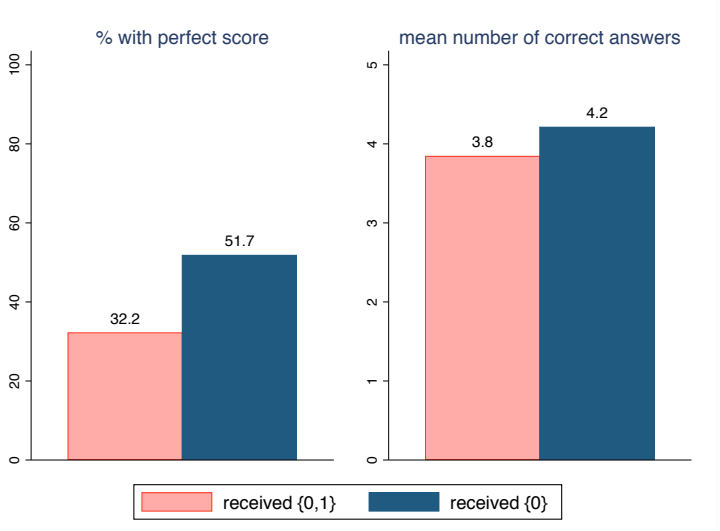
C.3 Productivity and menu assignment

Below I discuss results from an exploratory analysis about the relationship between subjects' task performance and the menu they were assigned. The dataset had not been constructed with this analysis in mind and it is not clear whether the results presented below would be replicated in a larger sample or in a different context. In particular, power calculations suggest that the study had low power to detect small productivity differences (see H.2.3). Therefore, this set of results should be interpreted with caution. With this caveat in mind, I discuss the interpretation of productivity differences as one possible way of measuring self-control costs. I also find some unexpected heterogeneity in productivity losses, which seems to go in the direction of the costly self-control interpretation.

C.3.1 Raw comparisons

In Section 4.2.2 of the main text, I argue that if self-control has to be exercised in order to avoid thinking about the story, then task performance should be higher when all temptation opportunities are removed. In other words, subjects assigned the commitment menu $\{0\}$ should have a higher productivity than those assigned the flexible menu $\{0, 1\}$. The figure below shows the percentage of subjects with a perfect score of 5 correct answers (left panel) and the average number of correct answers (right panel) depending on the menu assigned.

Figure 8: Productivity and menu assignment



Notes: *% with perfect score* refers to the percentage of subjects who provided a correct answer for each of the 5 prompts received during the attention task. $N = 87$ (resp. $N = 29$) for those assigned $\{0, 1\}$ (resp. $\{0\}$).

Subjects assigned $\{0\}$ were almost 20 percentage points more likely to obtain a perfect score than those who faced $\{0,1\}$ ($p = 0.030$, one-sided t-test); furthermore, they gave 0.4 more correct answers on average ($p = 0.057$, one-sided t-test). However, the figure does not present a purely experimental comparison since assignment to $\{0\}$ or $\{0,1\}$ is exogenous only conditional on the initial rank ordering and WTP choices made by a subject, which influenced his probability of receiving a given menu. In the paper, I therefore present the results of OLS regressions that control for the probability $\mathbb{P}_m$ of being assigned menu $m \in \{\{0\},\{1\},\{0,1\}\}$ based on a subject's rank ordering and WTP decisions. These regressions also control for session fixed effects, as do all the other regressions presented in this Online Appendix and in the main text. The estimated productivity differences are very similar with or without controlling for $\mathbb{P}_m$. However, differences after controlling for $\mathbb{P}_m$ are only marginally significant with session FE and miss marginal significance if session FE are removed (also see discussion in H.2.3).[2]

C.3.2 Matching estimates

As an alternative approach, I use matching methods to estimate productivity differences, taking subjects with the same rank ordering as counterfactuals. The table below presents nearest neighbor matching estimates of the effect of being assigned $\{0,1\}$ (i.e., the treatment) on productivity; the reported coefficients are Sample Average Treatment Effects (SATE). The identification strategy requires that potential outcomes (i.e., productivities under $\{0,1\}$ and $\{0\}$) be independent of treatment assignment conditional on a set X of observables not affected by the treatment. Table 9 presents 3 specifications that differ in the set X and the constraints on matching.[3] All specifications require exact matching on the initial rank ordering $\succeq_1^{rank}$; because there was no counterfactual for a few of the least popular orderings, the sample is restricted to the 108 subjects (out of 116) who could be matched with at least one other subject with the same menu preference.[4] To account for WTP decisions, the second and the third specifications also match individuals based on whether they had a positive WTP for their top option against their second, and their second against their third. The third specification requires exact matching on all variables.

[2] While the introduction of session FE reduces p-values for the coefficients of interest in this specific set of regressions, this is not true for all the regressions presented in this paper. In principle, controlling for an additional set of regressors should make the test more stringent.

[3] Although I considered other specifications, I opted for a fairly coarse set of covariates due to the small sample size and the heightened risk of violating the common support assumption with a richer set of covariates.

[4] Among the 8 subjects dropped from the sample, 7 could not be matched with somebody assigned $\{0\}$; this includes 3 subjects who gave rank (1,1,2) to $\{0\}$, $\{1\}$ and $\{0,1\}$, another 3 with ranking (2,1,1) and one subject with ranking (1,1,1). In addition, one subject with ranking (2,1,2) could not be matched with somebody assigned $\{0,1\}$.

Table 9: Propensity score matching estimates of the effect of being assigned {0,1} on productivity

Covariates	$X_i = \{\succeq_1^{rank}\}$	$X_i = \{\succeq_1^{rank}, \mathbb{1}_{(WTP_{12}>0)}, \mathbb{1}_{(WTP_{23}>0)}\}$
	Panel A: *Obtained perfect score*	
SATE	-0.198*	-0.184	-0.190*
s.e.	0.115	0.115	0.115
p-value	0.085	0.110	0.098
95% CI	[-0.424, 0.027]	[-0.410, 0.042]	[-0.415, 0.035]
	Panel B: *Number of correct answers*	
SATE	-0.390	-0.391*	-0.401*
s.e.	0.238	0.233	0.228
p-value	0.101	0.093	0.079
95% CI	[-0.857, 0.076]	[-0.847, 0.065]	[-0.849, 0.046]
exact matching on	$\succeq_1^{rank}$	$\succeq_1^{rank}$	X_i
% of exact matches	100%	100%	72.5%
Observations	108	108	108

Notes: Estimates of the Sample Average Treatment Effect (SATE) by nearest neighbor matching for two productivity measures, *Obtained perfect score* (Panel A) and *Number of correct answers* (Panel B). For the treatment, $T_i = 1$ if subject i was assigned $\{0, 1\}$ and (= 0 if assigned $\{0\}$). For the covariates X_i, $\succeq_1^{rank}$ is a subject's menu preference ordering based on the initial ranking, $\mathbb{1}_{(WTP_{12}>0)}$ ($\mathbb{1}_{(WTP_{23}>0)}$) is an indicator variable equal to 1 if the subject had a positive WTP for replacing the menu ranked second (third) with the menu ranked first (second). Exact matching on $\succeq_1^{rank}$ (all covariates) required in first two (last) specification(s); bias correction for non exact matching applied.

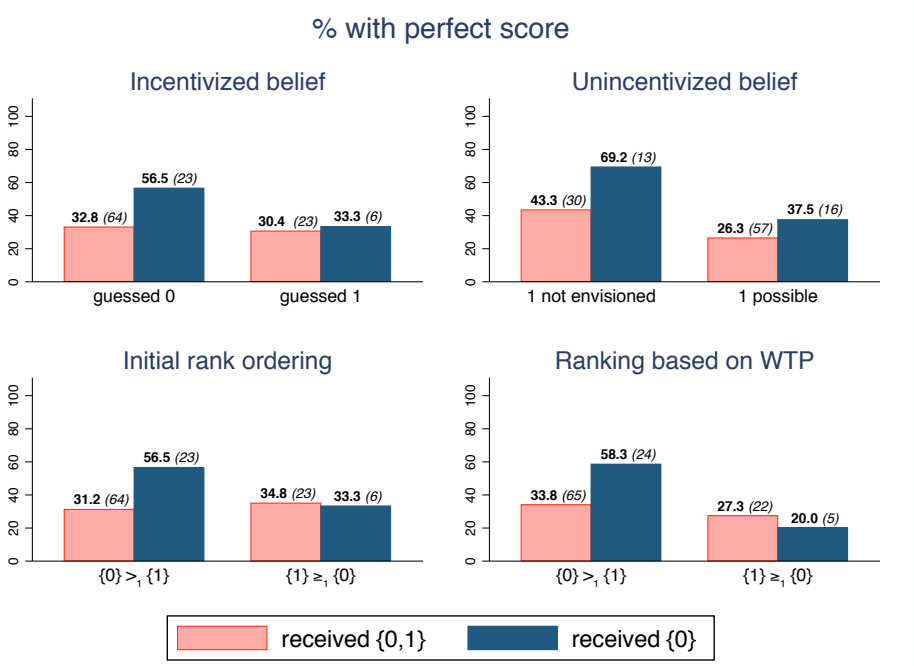
Estimates are in the same ballpark as the estimates obtained from the OLS regressions reported in the paper for the full sample of those assigned either $\{0, 1\}$ or $\{0\}$ ($N = 116$); furthermore, results appear fairly consistent across specifications. Again, the effects are at best marginally significant, so these findings have to be interpreted with a lot of caution.

C.3.3 Heterogeneity: productivity losses and conflict

If productivity differences are driven by self-control costs, then one should expect a productivity gap only among those who truly experienced a choice conflict between maximizing earnings (initial plan) and reading the story (immediate desire). In this section, I look at productivity differentials in subsamples to study whether the effect is heterogeneous. A priori, there are a number of ways to measure conflict with the initial plan. First, the choice to read the story may conflict with subjects' *initial beliefs*, if they did not anticipate reading the story; those beliefs can be measured either through the incentivized guess (about a similar other) or through the unincentivized guess (about themselves). Second, the decision to read the story may conflict with subjects' *initial preferences*,

if they strictly preferred $\{0\}$ to $\{1\}$; those preferences can be measured based only on the initial ranking $\succeq_1^{rank}$, or based on WTP as well, $\succeq_1^{WTP}$.[5] Figure 9 shows the percentage of subjects who obtained a perfect score depending on (i) whether they were assigned $\{0,1\}$ or $\{0\}$ and (ii) whether the choice of Option 1 conflicted with their ex-ante preferences/beliefs.

Figure 9: Productivity by menu assigned and belief/preference category



Notes: All panels show the percentage of subjects who correctly answered all 5 prompts as a function of the menu they were assigned. For the incentivized belief, "guessed 1 (0)" means that the subject expected a similar other to read (not to read) the story; for the unincentivized belief, "1 not envisioned" refers to subjects who said they were "very unlikely" to read the story, while "1 possible" refers to all other subjects. Italicized numbers in parentheses refer to the number of subjects in a given cell; as an example, for the incentivized belief, 32.8 *(64)* means that out of the 64 subjects who were assigned $\{0,1\}$ and guessed that a similar other would not read the story, 32.8% correctly answered all 5 prompts.

The subjects who incurred a productivity loss when confronted with $\{0,1\}$ seem to be those who faced a clear conflict in their beliefs and/or preferences. For instance, among the subjects who ranked $\{0\}$ strictly higher than $\{1\}$ according to the initial ranking procedure (i.e., $\{0\} \succ_1^{rank} \{1\}$), those assigned $\{0,1\}$ were about 25 ppts less likely to obtain a perfect score than those assigned $\{0\}$ (31.2% vs. 56.5%, t_{85} = -2.18, $p = 0.032$); on the other hand, there were no productivity differences for those who faced no conflict (i.e., $\{1\} \succeq_1^{rank} \{0\}$). Similarly for beliefs, those who expected that a

[5] Below, I equate a preference conflict with a *strict* preference for $\{0\}$ over $\{1\}$, thus treating indifferences between $\{0\}$ and $\{1\}$ as revealing no conflict. This choice was made in order to keep a minimum number of subjects in each bin. Including indifferences under conflict rather than no conflict gives similar results.

similar other would not read the story ("guessed 0") were over 20 ppts less likely to obtain a perfect score when facing $\{0,1\}$ rather than $\{0\}$ (32.8% vs. 56.5%, t_{85} = -2.02, $p = 0.046$); the gap is close to zero for those who expected the other to read the story ("guessed 1").

While the figure suggests differential productivity responses based on whether subjects faced a decision conflict, a few caveats should be noted. First, no differences exist when looking at the second productivity measure i.e., number of correct answers.[6] Second, assignment to $\{0,1\}$ is random only conditional on subjects' menu preferences (initial rank ordering and WTP), which determined the odds of obtaining a given menu. I therefore test for productivity differences in a linear probability model that controls for the probability $\mathbb{P}_m$ of facing each menu $m \in \{\{0\},\{1\},\{0,1\}\}$:

$$\textit{Perfect score} = \beta_0 + \beta_1 NC + \beta_2 \mathbb{1}_{\{0,1\}} + \beta_3 NC \times \mathbb{1}_{\{0,1\}} + X\delta + \gamma_{s,NC} + \varepsilon$$

where $\mathbb{1}_{\{0,1\}}$ is an indicator for whether the subject was assigned $\{0,1\}$, NC is an indicator equal to 1 if the subject faced no conflict, $X = [\mathbb{P}_{\{0\}}, \mathbb{P}_{\{1\}}, NC \times \mathbb{P}_{\{0\}}, NC \times \mathbb{P}_{\{1\}}]$ and $\gamma_{s,NC}$ is a vector of session fixed effects and their interaction with NC. The absence of conflict is measured as in the figure in 4 different ways: (1) preferred $\{1\}$ to $\{0\}$ according to $\succeq_1^{rank}$; (2) preferred $\{1\}$ to $\{0\}$ according to $\succeq_1^{WTP}$; (3) considered 1 as a possible outcome; (4) guessed other would choose 1. The main coefficients of interest are β_2 and β_3. If productivity losses are incurred only by individuals who are conflicted (i.e., the reference group), then $\beta_2 < 0$, $\beta_3 > 0$ and $\beta_2 + \beta_3 = 0$.

Table 10 presents regression results. The main effect of being assigned $\{0,1\}$ is negative and significant in 3 of the 4 regressions i.e., subjects for whom reading the story entailed a conflict with their ex ante preferences or beliefs were significantly less likely to obtain a perfect score when they were assigned $\{0,1\}$ instead of $\{0\}$. For instance, those who ranked $\{0\}$ strictly above $\{1\}$ according to $\succeq_1^{rank}$ ($\succeq_1^{WTP}$) were 21.6 (27.3) ppts less likely to answer all prompts correctly if they were assigned $\{0,1\}$. On the other hand, the effect of being assigned $\{0,1\}$ is insignificant among subjects who faced no conflict in their preferences or beliefs; the null hypothesis $\beta_2 + \beta_3 = 0$ cannot be rejected in any of 4 regression specifications. The interaction term β_3 is positive but small and insignificant in all regressions.

To get an idea of the preference orderings that may drive the observed productivity differences, Figure 10 presents a breakdown by menu type among those with $\{0\} \succ_1 \{1\}$ and contrasts the observed differences with the differences observed among those for whom $\{0\} \sim_1 \{1\}$ and $\{1\} \succ_1 \{0\}$

[6] Although this is only a conjecture, one possibility is that the two productivity measures capture something different about a subject's motivation to complete the task: since certain prompts were easy to answer, it is likely that subjects with low scores had a low motivation to perform the task ex ante; on the other hand, obtaining a perfect score may better capture determination and persistence during the task.

Table 10: Effect of being assigned $\{0,1\}$ on the probability of obtaining a perfect score

No Conflict variable	$\{1\} \succeq_1^{rank} \{0\}$	$\{1\} \succeq_1^{WTP} \{0\}$	*1 possible*	*guessed 1*
	(1)	(2)	(3)	(4)
No Conflict	0.580	0.448	-0.437	0.818
	(0.467)	(0.489)	(0.481)	(0.493)
Assigned {0,1}	-0.216*	-0.273**	-0.391**	-0.177
	(0.124)	(0.115)	(0.185)	(0.126)
No Conflict × *Assigned* $\{0,1\}$	0.097	0.076	0.280	0.053
	(0.262)	(0.272)	(0.229)	(0.264)
Test $\beta_2 + \beta_3 = 0$				
F-stat	0.26	0.64	0.68	0.28
p-value	0.608	0.426	0.413	0.595
Observations	116	116	116	116
Mean dependent variable	0.37	0.37	0.37	0.37

Notes: Linear probability models where the dependent variable *Obtained perfect score* is equal to 1 if the subject correctly answered all 5 prompts; probit models give similar results. The *No Conflict* variable is an indicator equal to 1 if the subject faced no conflict (in his preferences or beliefs) from reading the story, where the *No Conflict* variables are defined in the main text and in the footnote of Figure 9. All regressions include controls ($\mathbb{P}_{\{0\}}, \mathbb{P}_{\{1\}}$ and session FE) as well as their interaction with the *No Conflict* variable. * and ** refer to $p < 0.1$ and < 0.05.

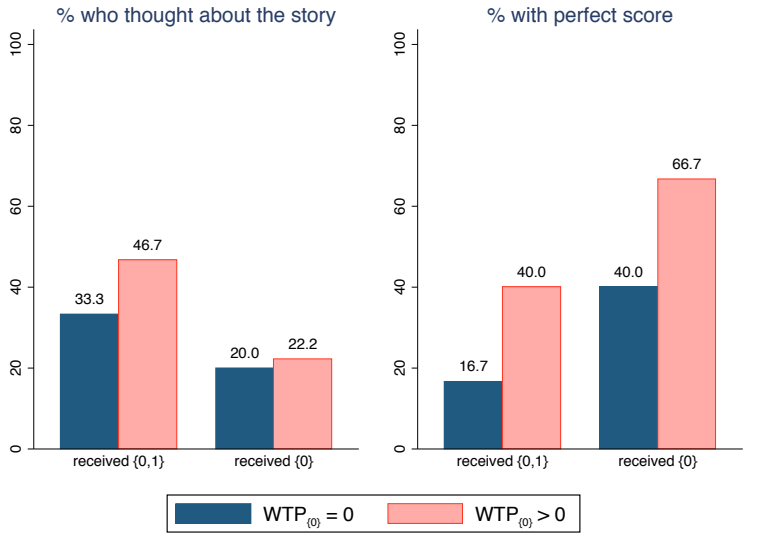
(unfortunately, the sample is too small to further break down the last two categories by menu type).

Figure 10: % with perfect score by menu assigned and menu preference category

C.3.4 Attention and productivity

The interpretation of productivity differentials given in the main text rests on the following two premises: (i) attention is limited and costly to regulate, and (ii) the availability of a tempting alternative takes up some of these attention resources. Under those conditions (and controlling for preferences), the productivity of subjects assigned $\{0,1\}$ should be lower than the productivity of those assigned $\{0\}$. In other words, the regulation of attention during a tedious task is more costly in the presence of a temptation that competes for the attention of the DM. Some very suggestive evidence in favor of this interpretation relates to how levels of attention and productivity differ among the SSB_{-0} subjects based on the menu they were assigned. The left panel of Figure 11 shows the percentage of SSB_{-0} subjects who reported having thought about the story during the task, while the right panel shows the percentage who obtained a perfect score, both as a function of the menu assigned. Because menu assignment is only random conditional on WTP, I further divide the sample between those who had a strictly positive WTP for $\{0\}$ and those for whom WTP was zero.[7]

Figure 11: Temptation, attention and productivity of the SSB_{-0} subjects



Notes: The left (right) panel shows the percentage of SSB_{-0} subjects who reported having thought about the story during the task (obtained a perfect score) as a function of their menu assignment and their WTP for commitment to $\{0\}$ (> 0 or $= 0$). Among those assigned $\{0,1\}$, $N = 15$ for those with $WTP_{\{0\}} > 0$ and $N = 12$ for those with $WTP_{\{0\}} = 0$; among those assigned $\{0\}$, $N = 9$ for those with $WTP_{\{0\}} > 0$ and $N = 5$ for those with $WTP_{\{0\}} = 0$.

[7] Controlling for WTP is particularly important here because of the positive relationship between WTP for commitment to $\{0\}$ and interest in the story ex ante (see Section B.1), and the fact that initial interest for the story is a predictor of attention to the story during the task.

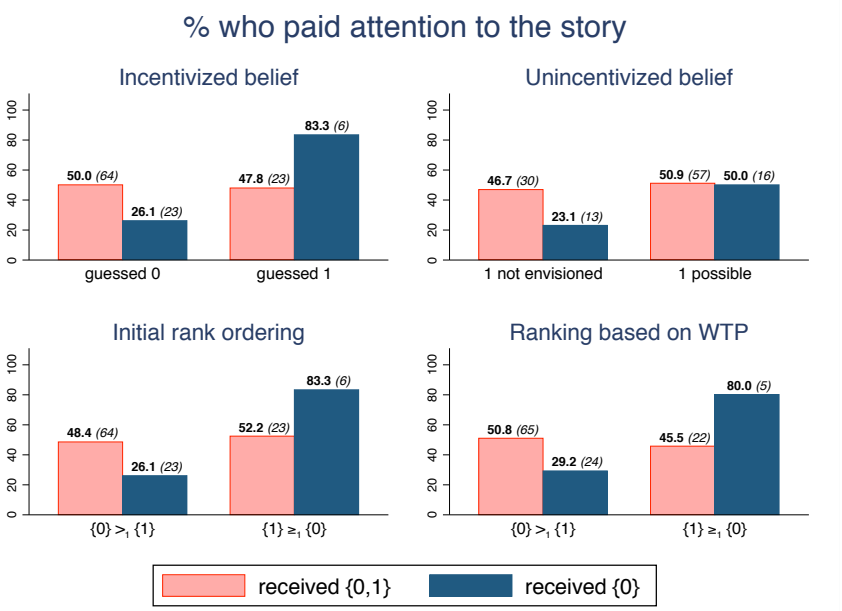
Obviously, the number of subjects in each bin is very small and the comparisons are not purely experimental, so the evidence is at best suggestive. However, 3 interesting relationships can be noted. First, regardless of WTP, subjects who faced $\{0,1\}$ were more likely to say that their attention was drawn to the story during the task than those who faced $\{0\}$. Second, this increase in attention to the story appears slightly higher for those with $WTP_{\{0\}} > 0$, that is, for those most tempted by the story. Third, for both WTP groups, higher attention to the story when facing $\{0,1\}$ is associated with a lower productivity, with comparable productivity differentials across the two WTP groups.[8]

In fact, the pattern observed among the SSB_{-0} subjects is more general and concerns all subjects for whom reading the story conflicted with their ex ante preferences and/or beliefs. As shown in the previous section, subjects who faced a conflict because they strictly preferred $\{0\}$ to $\{1\}$ and/or did not intend to read the story were less likely to obtain a perfect score on the task if they faced $\{0,1\}$ instead of $\{0\}$; on the other hand, subjects who faced no conflict (because they (weakly) preferred to read the story and/or considered reading the story a possibility) did not face productivity losses when assigned $\{0,1\}$. Figure 12 shows that a similar pattern can be observed when looking at attention: conflicted subjects who were assigned $\{0,1\}$ were more likely to report that their attention was taken by the story during the task than those who received $\{0\}$. On the other hand, subjects who faced no conflict in their preferences/beliefs were not more attentive to the story when the option was in their choice set; if anything, it appears that they were more likely to report having thought about the story when the option was taken away from them.[9]

[8] It could be argued that the productivity loss from facing $\{0,1\}$ should be higher for those with $WTP_{\{0\}} > 0$, since they were more attentive to the story than those with $WTP_{\{0\}} = 0$. However, the two WTP groups are clearly different (e.g., those with $WTP_{\{0\}} > 0$ tend to be more productive than those with $WTP_{\{0\}} = 0$, regardless of the menu assigned); therefore it could be that the two groups tend to react differentially to challenges in their attention.

[9] One possible interpretation for this finding is that those who were hoping to read the story but were assigned $\{0\}$ had their expectations disappointed and this disappointment made the story more salient in their mind.

Figure 12: Attention to the story by menu assigned and belief/preference category



Notes: All panels show the percentage of subjects who reported having thought about the story during the task as a function of the menu they were assigned. For the incentivized belief, "guessed 1 (0)" means that the subject expected a similar other to read (not to read) the story; for the unincentivized belief, "1 not envisioned" refers to subjects who said they were "very unlikely" to read the story, while "1 possible" refers to all other subjects. Italicized numbers in parentheses refer to the number of subjects in a given cell; as an example, for the incentivized belief, 50.0 *(64)* means that out of the 64 subjects who were assigned {0,1} and guessed that a similar other would not read the story, 50% reported having thought about the story during the task.

Again, since menu assignment is only random conditional on the rank ordering and WTP, I also tested for differences in attention in a linear probability model that controls for the probability $\mathbb{P}_m$ of facing each menu $m \in \{\{0\},\{1\},\{0,1\}\}$:

$$\textit{Thought about the story} = \beta_0 + \beta_1 NC + \beta_2 \mathbb{1}_{\{0,1\}} + \beta_3 NC \times \mathbb{1}_{\{0,1\}} + X\delta + \gamma_{s,NC} + \varepsilon$$

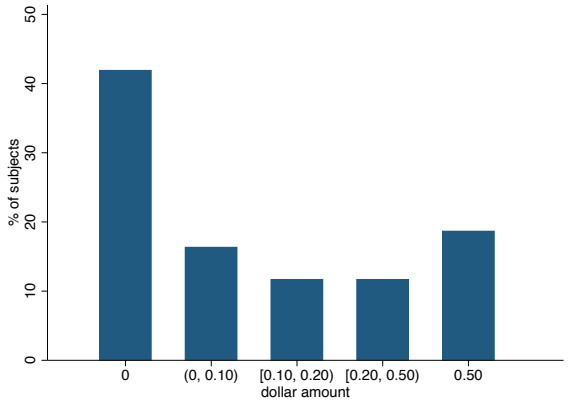
where $\mathbb{1}_{\{0,1\}}$ is an indicator for whether the subject was assigned $\{0,1\}$, NC is an indicator equal to 1 if the subject faced no conflict, $X = [\mathbb{P}_{\{0\}}, \mathbb{P}_{\{1\}}, NC \times \mathbb{P}_{\{0\}}, NC \times \mathbb{P}_{\{1\}}]$ and $\gamma_{s,NC}$ is a vector of session fixed effects and their interaction with NC. Although coefficients have the right sign, the interaction effects observed in the figure are not very robust to the introduction of controls, in particular when session fixed effects are included. Regressions are available upon request.

D Is *WTP* for commitment driven by temptation uncertainty?

D.1 Determinants of *WTP* for replacing $\{0,1\}$ with $\{0\}$

In the main text, I argue that WTP for commitment to $\{0\}$ does not seem to be explained by temptation uncertainty. In particular, Section 4.3 presents a regression analysis of the determinants of WTP to replace $\{0,1\}$ with $\{0\}$ among the 43 SSB_{-0} subjects of the classification based on the initial rank ordering. The outcome variable is \$ WTP for replacing $\{0,1\}$ with $\{0\}$; for the 19/43 subjects who were assigned to the time WTP condition, their WTP was converted into a dollar amount with $\tilde{WTP}$= 0.01 (=0.50) if WTP_t=1 (=10) and $\tilde{WTP}$= 0.01 + 0.5($\frac{t-1}{10-1}$) if $WTP_t \in \{2,3,4,5,6,8\}$, where WTP_t is measured in terms of additional minutes on the task. Figure 13 shows that the WTP measure is censored to the right: the dollar payments in the Multiple Price List were $\{0.01, 0.02, 0.05, 0.10, 0.20, 0.30, 0.40, 0.50\}$ and close to 20% of subjects hit the upperbound of \$0.50. In the main text, I therefore present the results from Tobit regressions.[10]

Figure 13: Distribution of WTP for replacing $\{0,1\}$ with $\{0\}$ among the SSB_{-0} subjects



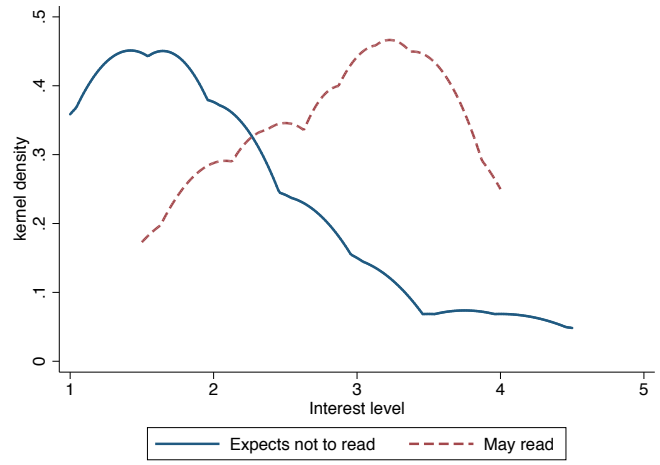
Notes: The figure combines dollar and time WTP conditions; time WTP converted into dollars according to: $\tilde{WTP}$= 0.01 (=0.50) if WTP_t=1 (=10) and $\tilde{WTP}$= 0.01 + 0.5($\frac{t-1}{10-1}$) if $WTP_t \in \{2,3,4,5,6,8\}$.

If the SSB_{-0} subjects suffer from temptation uncertainty, then their WTP for $\{0\}$ should be increasing in their belief that they will succumb to temptation and read the story. On the other hand, if they suffer from costly self-control, then their WTP for $\{0\}$ should be increasing in how enticing they find the story, regardless of their beliefs. As explained in the main text, controlling

[10] Although, in principle, WTP for replacing $\{0,1\}$ with $\{0\}$ should be weakly positive if subjects ranked $\{0\}$ strictly above $\{0,1\}$, I run two-limit tobit regressions to allow for negative WTP. Results are very similar for one-limit Tobit models assuming that WTP is only censored to the right.

for beliefs is important since the likelihood of succumbing to temptation should be increasing in the strength of temptation; indeed, as Figure 14 shows, subjects who are more interested in the story are also less certain that they will resist the opportunity to read it.

Figure 14: Relationship between interest in the story and anticipated choice



	May read the story		
Interested in the story	Yes	No	Total
Yes	17 85.0% 60.7%	3 15.0% 20.0%	20 100.0% 46.5%
No	11 47.8% 39.3%	12 52.2% 80.0%	23 100.0% 53.5%
Total	28 65.1% 100.0%	15 34.9% 100.0%	43 100.0% 100.0%

Notes: Left panel: *Interest level* $\in \{1, 1.5, ..., 5\}$ is a subject's mean answer to Q1) "*How interested are you in learning whether the selected story was yours?*" and Q2) "*How interested are you in learning the most incredible story among the other participants in this room?*", where 1 = "completely indifferent", 2 = "somewhat indifferent", 3 = "somewhat interested", 4 = "very interested", 5 = "dying to learn". A subject belongs to the category "Expects not to read" ("May read") if he reported (did not report) being "very unlikely" to read the story. A Kolmogorov-Smirnov test yields $p = 0.013$ ($D = 0.469$).

Right panel: "Interested in the story" coded as "Yes" if the subject reported being at least somewhat interested in learning the story in Q1 and/or Q2; "May read the story" coded as "Yes" if the subject did not report being "very unlikely" to read the story. Fisher's exact test yields $p = 0.023$.

To account for this relationship, the main text presents a Tobit regression analysis of the predictive power of beliefs and interest in the story both separately and in combination, using the converted \$ WTP as the dependent variable; control variables include a dummy for the WTP condition and session fixed effects. The analysis shows (i) a strong positive relationship between WTP for $\{0\}$ and interest in the story; (ii) no relationship between WTP and beliefs when considered alone; (iii) a marginally significant negative relationship between WTP and beliefs when interest in the story is included in the regression. Below I discuss the robustness of these findings given the small number of observations ($N = 43$) and the noisy measure of WTP. First, to address concerns pertaining to the small sample size, I perform two robustness checks: (a) I remove the session fixed effects from the regressions, as those have to be estimated out of very few observations; (b) I perform bootstrap

simulations based on 2,000 replications in order to compute standard errors and 95% confidence intervals. Table 11 presents the results; asymptotic (bootstrap) standard errors are in parentheses (square brackets).

Table 11: Determinants of normalized WTP for replacing $\{0, 1\}$ with $\{0\}$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Interested	0.303 (0.137)** [0.157]*				0.388 (0.146)** [0.168]**		0.388 (0.148)** [0.174]**	
Interest level		0.144 (0.072)* [0.085]*				0.203 (0.081)** [0.102]**		0.210 (0.083)** [0.109]*
May read			-0.057 (0.148) [0.162]				-0.223 (0.147) [0.165]	-0.270 (0.160) [0.185]
Chances of reading				-0.063 (0.10) [0.131]	-0.164 (0.105) [0.131]	-0.185 (0.115) [0.153]		
Time WTP	0.170 (0.133)	0.145 (0.133)	0.114 (0.140)	0.110 (0.140)	0.185 (0.130)	0.162 (0.131)	0.199 (0.130)	0.179 (0.131)
Observations	43	43	43	43	43	43	43	43
Mean dependent variable	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14

Notes: Two-limit Tobit regressions of WTP for replacing $\{0, 1\}$ with $\{0\}$ (converted in \$ for time WTP). The indicator *Time* WTP is equal to 1 if in the time WTP condition, *Interested* is equal to 1 for subjects who reported being at least somewhat interested in learning whether their own story was selected (Q1) and/or what was the most incredible story among others (Q2); *Interest level* $\in \{1, 1.5, ..., 5\}$ is a subject's mean answer to Q1 and Q2 (coded as 1 = "completely indifferent", 2 = "somewhat indifferent", 3 = "somewhat interested", 4 = "very interested", 5 = "dying to learn"); the indicator *May read* is equal to 1 for subjects who did not answer that they were very unlikely to read the story. Finally, *Chances of reading* refers to the belief category number for the unincentivized guess (coded as 1 = "very unlikely", 2 = "quite unlikely", 3 = "unsure", 4 = "quite likely", 5 = "very likely" to read the story). Asymptotic (bootstrap) standard errors in parentheses (square brackets); * $p < 0.1$, ** $p < 0.05$ and *** $p < 0.01$.

The effect of interest in the story is still significant at the 5% level in most regressions; the (bias-corrected) 95% bootstrap confidence intervals exclude 0 in all but one specification (i.e., specification (2)). On the other hand, the belief coefficients have fairly large standard errors, thus failing to be even marginally significant. For specifications (5)-(8), the upperbound of the (bias-corrected) 95% bootstrap CI is in the range 0.05-0.08; in other words, one cannot rule out a small positive effect of beliefs on WTP.[11]

As a second robustness check, I test whether the results are reliant on the Tobit specification

[11]The bias-corrected 95% CI for the belief coefficient is [-0.462, 0.056] in specification (5), [-0.532, 0.077] in (6), [-0.598, 0.050] in (7) and [-0.678, 0.057] in (8). For specifications (3) and (4), the 95% CIs are [-0.389, 0.260] and [-0.333, 0.196] respectively.

or the specific measure of WTP. Table 12 presents results from simple OLS regressions where the dependent variable is the number of rows in the MPL at which the subject was willing to pay the cost for that row in order to get $\{0\}$ instead of $\{0,1\}$. Findings are qualitatively similar.

Table 12: Determinants of WTP for replacing $\{0,1\}$ with $\{0\}$ in the MPL

	Number of rows in MPL at which $\{0\} - \text{cost} \succ_1 \{0,1\}$							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Interested	2.501**				3.211***		3.247***	
	(0.942)				(0.937)		(0.965)	
Interest level		0.885				1.188**		1.270**
		(0.536)				(0.545)		(0.569)
May read			-0.885				-2.112**	-1.857*
			(1.057)				(0.998)	(1.092)
Chances of reading				-0.721	-1.365**	-1.141*		
				(0.630)	(0.582)	(0.629)		
time WTP	0.988	0.781	0.507	0.408	0.954	0.732	1.151	0.918
	(0.917)	(0.964)	(0.975)	(0.970)	(0.864)	(0.934)	(0.878)	(0.942)
Session FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	43	43	43	43	43	43	43	43
Adjusted R^2	0.169	0.074	0.021	0.037	0.264	0.131	0.244	0.121
Mean dependent variable	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86

Notes: OLS regressions of the number of rows in the Multiple Price List (out of 8) at which the subject was willing to pay the cost for that row in order to replace $\{0,1\}$ with $\{0\}$. See previous table for a definition of the explanatory variables; * $p < 0.1$, ** $p < 0.05$ and *** $p < 0.01$.

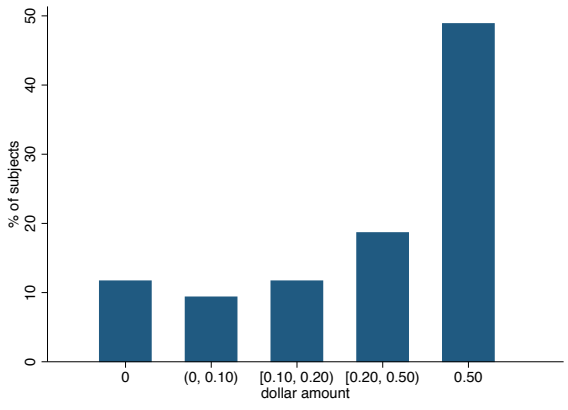
Interestingly, Table 13 shows there is also a negative relationship between the beliefs of the SSB_{-0} subjects about their likelihood of succumbing to temptation and their WTP for replacing $\{1\}$ with $\{0,1\}$ (i.e., the second WTP elicited from them): those who foresee some possibility that they will read the story during the task have a weaker preference for $\{0,1\}$ over $\{1\}$. This is true even after controlling for their WTP to replace $\{0,1\}$ with $\{0\}$ (second vs. top choice), which is positively correlated with their WTP to replace $\{1\}$ with $\{0,1\}$ (last vs. second choice), as one could expect. In other words, WTP for $\{0,1\}$ against $\{1\}$ also contains a lot of information regarding the robustness of the SSB_{-0} ordering $\{0\} \succ_1 \{0,1\} \succ_1 \{1\}$ elicited in this experiment. Reassuringly, the vast majority of SSB_{-0} subjects exhibit a clear WTP for $\{0,1\}$ over $\{1\}$, with nearly 50% of them exhibiting maximal WTP and about 80% selecting at least 4 rows in the Multiple Price List (out of 8); see Figure 15.

Table 13: Determinants of WTP for replacing $\{1\}$ with $\{0,1\}$

	Number of rows in the MPL				converted \$ WTP			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Chances of reading	-1.439**	-1.169**			-0.266**	-0.219*		
	(0.574)	(0.558)			(0.122)	(0.115)		
May read			-1.980*	-1.655*			-0.316*	-0.262*
			(0.986)	(0.937)			(0.164)	(0.143)
WTP for {0} against {0,1}		0.350**		0.372**		1.498**		1.577**
		(0.147)		(0.148)		(0.553)		(0.578)
time WTP		0.181		0.332		0.057		0.084
		(0.846)		(0.859)		(0.127)		(0.129)
Session FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	43	43	43	43	43	43	43	43
Mean dependent variable	5.02	5.02	5.02	5.02	0.31	0.31	0.31	0.31

Notes: Columns (1)-(4) are OLS regressions of the number of rows in the Multiple Price List (out of 8) at which the subject was willing to pay the cost for that row in order to replace $\{1\}$ with $\{0,1\}$; columns (5)-(8) are two-limit Tobit regressions of WTP for replacing $\{1\}$ with $\{0,1\}$ (converted in \$ amounts for time WTP). The variable *Chances of reading* is the belief category number for the unincentivized guess (coded as 1 = "very unlikely", 2 = "quite unlikely", 3 = "unsure", 4 = "quite likely", 5 = "very likely" to read the story); *May read* is an indicator variable equal to 1 if the subject did not answer that he was very unlikely to read the story; *WTP for {0} against {0,1}* is the WTP (number of rows or \$ WTP) for the other comparison (top vs. second best). The indicator variable *time WTP* is equal to 1 if the subject was assigned to the time WTP condition. *, ** and *** refer to $p < 0.1$, 0.05 and < 0.01.

Figure 15: Distribution of WTP for replacing $\{1\}$ with $\{0,1\}$ among the SSB_{-0} subjects



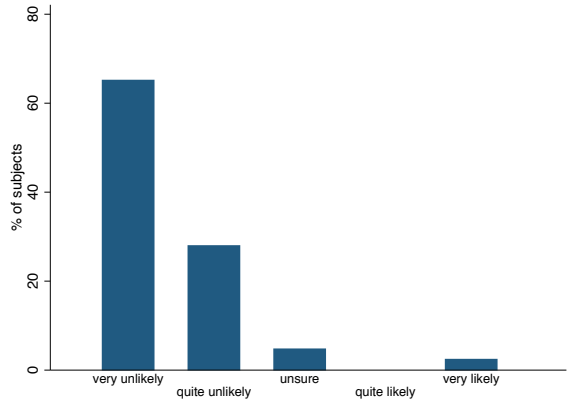
Notes: The figure combines dollar and time WTP conditions; time WTP converted into dollars according to: $\tilde{WTP}$= 0.01 (=0.50) if WTP_t=1 (=10) and $\tilde{WTP}$= 0.01 + $0.5(\frac{t-1}{10-1})$ if $WTP_t \in \{2,3,4,5,6,8\}$.

D.2 *WTP* calibration exercise

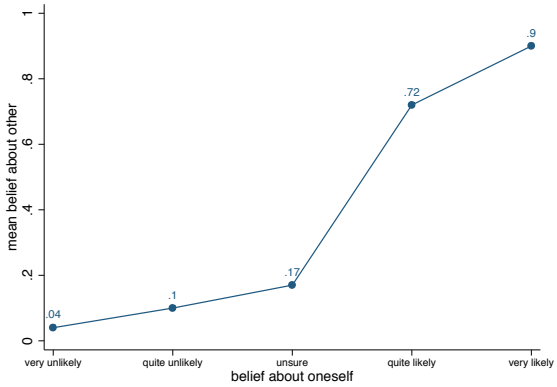
Another way to assess the role of temptation uncertainty in explaining the WTP for commitment of the SSB_{-0} subjects is to test the relationship between their WTP for $\{0\}$ and their expected monetary loss from being exposed to $\{0,1\}$, $E(L)$. For a subject who suffers from random indulgence, the expected loss $E(L)$ corresponds to the foregone opportunity of earning an additional \$2 if he decides to read the story.[12] In other words, $E(L) = 2\lambda_1\pi$ where λ_1 is a subject's belief that he will read the story when facing $\{0,1\}$ and π is his perceived likelihood of correctly answering the prompt excluded from the payment. Under the random indulgence hypothesis, WTP and $E(L)$ should be positively correlated. As an estimate of λ_1, I use for each of the 5 belief categories of the unincentivized measure, the proportion of subjects in that category who guessed that a similar other would read the story (see Panel (b) of Figure 16).

Figure 16: Unincentivized belief measure

(a) Answers of SSB_{-0} types to unincentivized question



(b) Belief about oneself versus similar other



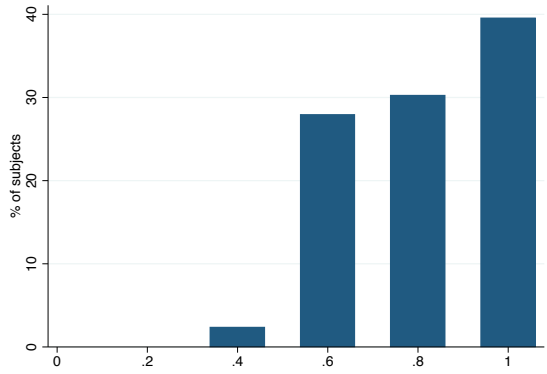
Notes: Panel (a) shows the distribution of answers of the SSB_{-0} types ($N = 43$) to the unincentivized belief question "How likely are you to choose to learn the selected story in Period 2 if given the chance?" (answers: *very unlikely*, *quite unlikely*, *unsure*, *quite likely*, *very likely*). Panel (b) shows the proportion of subjects who guessed that a similar other would read the story as a function of their answer to the unincentivized question ($N = 120$).

For example, $\hat{\lambda}_{1,i} = 0.04$ if subject i answered that he was "very unlikely" to read the story. To get an estimate of π for each subject i, $\hat{\pi}_i$, I use the proportion of prompts that this subject correctly answered during the task. For the SSB_{-0} subjects, the distribution of $\hat{\pi}_i$ is reported in Figure 17(a). Except for one outlier, individual estimates of the expected monetary loss, $\widehat{E(L_i)} = 2\hat{\lambda}_{1,i}\hat{\pi}_i$, are within the bounds of WTP (i.e., $\widehat{E(L_i)} \leq 0.50$); furthermore, the mean of $\widehat{E(L)}$ is very close

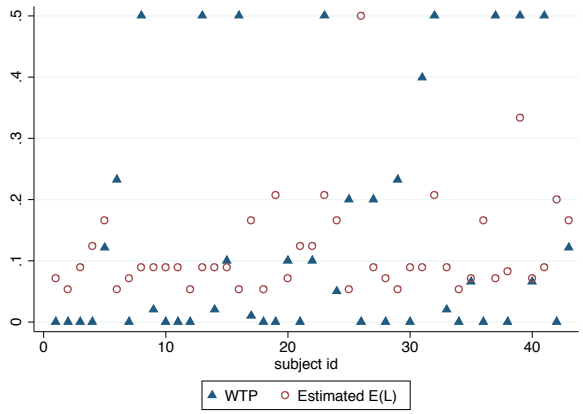
[12] As a reminder, a subject who read the story was paid for only 4 randomly selected prompts out of 5 and received \$2 for each correctly answered prompt.

Figure 17: Calibration of WTP for commitment to $\{0\}$

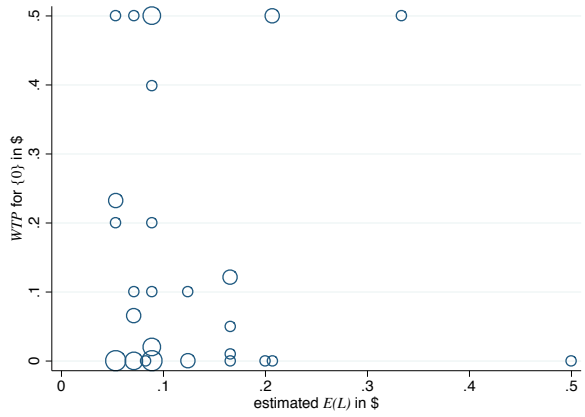
(a) Distribution of $\hat{\pi}_i$ for the SSB_{-0} subjects



(b) WTP_i versus $\widehat{E(L_i)}$



(c) Correlation between WTP and $\widehat{E(L)}$



Notes: Panel (a) shows the proportion of correctly answered prompts $\hat{\pi}_i = (\#\text{ correct answers})/5$ for each subject classified as SSB_{-0} ($N = 43$). For each subject i, Panel (b) plots WTP_i for replacing {0,1} with {0} against an estimate $\widehat{E(L_i)}$ of the expected monetary loss from reading the story, constructed as $\widehat{E(L_i)} = 2\hat{\lambda}_{1,i}\hat{\pi}_i$ (see text for a definition of $\hat{\pi}_i$ and $\hat{\lambda}_{1,i}$); the estimate of the outlier ($\widehat{E(L_{26})} > 0.5$) was replaced by 0.5. Finally, Panel (c) shows the frequency of each pair ($\widehat{E(L)}$,WTP); again, the outlier estimate was replaced by 0.5.

to the mean WTP at around \$0.14 ($t_{42} = -0.05$, $p = 0.96$).[13] Figure 17 Panels (b) & (c) plots the estimates $\widehat{E(L)}$ against WTP for $\{0\}$ among the SSB_{-0} subjects ($N = 43$).[14]

Although $\widehat{E(L)}$ matches WTP on average, there is virtually no relationship between the two quantities, with a Pearson correlation coefficient of -0.05 ($p = 0.74$, 95% CI $= [-0.346, 0.253]$). A non-parametric analysis of rank correlation yields similar results, with a Spearman correlation coefficient of $\rho = 0.05$ ($p = 0.74$, 95% CI $= [-0.253, 0.347]$). Clearly, the 95% confidence intervals are quite wide and a moderate-size correlation of around 0.3 cannot be discarded. The evidence from this calibration exercise is therefore not entirely conclusive.[15] It is worth noting however that a

[13] Excluding the outlier (for whom $\widehat{E(L_i)} = 1.44$), the mean of $\widehat{E(L)}$ drops to about 0.11; this \$0.03 difference with the mean WTP is still not significant ($t_{42} = -1.25$, $p = 0.22$).

[14] To increase readability, the estimate for the outlier (Subject id = 26) was replaced by the cap on WTP (\$0.50).

[15] I performed a few robustness checks to assess the range of possible correlations compatible with the data. First,

positive correlation between WTP and $\widehat{E(L)}$ could be simply due to the positive correlation between WTP and $\hat{\pi}$. Indeed, the SSB_{-0} subjects with a higher WTP for commitment ex ante tend to perform better on the task ex post: the Pearson correlation coefficient between WTP and $\hat{\pi}$ is 0.29 ($p = 0.06$, 95% CI = [−0.012, 0.542]) and Spearman's is 0.275 ($p = 0.07$, 95% CI = [−0.027, 0.532]). This finding appears to be consistent with the negative relationship between WTP and beliefs (see OA-D.1 and Section 4.3.2 in the main text). One possible interpretation is that both commitment and success in the task require self-control. More research needs to be conducted to clarify this relationship.

E Sophistication and commitment demand

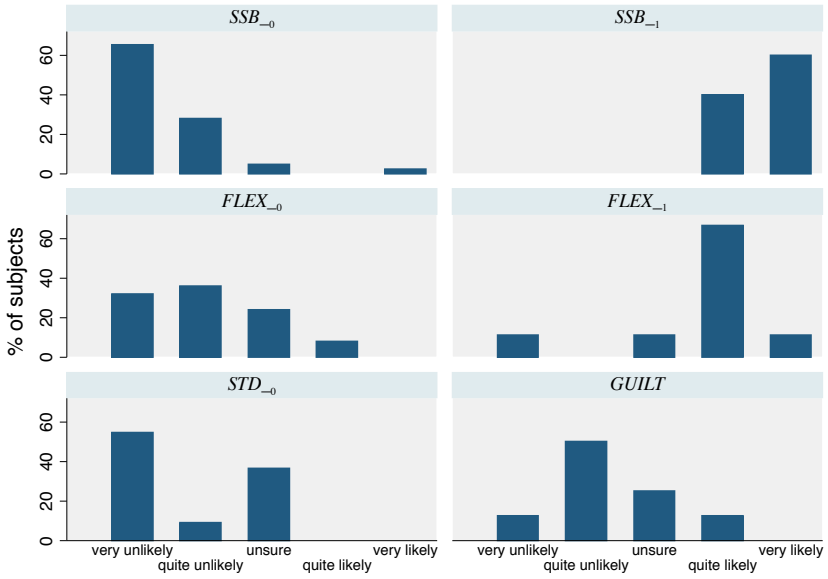
In the first part of this section, I present various pieces of data pertaining to the relationship between menu preferences, beliefs and ex-post choice. First I show the distribution of subjective beliefs (unincentivized measure) for each menu type (Figure 18) and compare those beliefs to ex-post choice (Figures 19 & 20, Table 14) and other measures of interest in the story (Figure 21). I also study the power of menu preferences to predict beliefs (incentivized and unincentivized) and ex-post choice (Table 15). The general message is that a strong connection exists between menu preferences and beliefs, and to a lesser extent, ex-post choice. Most of the discrepancies between behavior and beliefs appear to come from the $GUILT$ and $FLEX$ types, who express more uncertainty. In the second part of this section, I show how menu preferences, beliefs and ex-post choice relate to each other in 4 categories of models (dynamic inconsistency, costly self-control, random indulgence, temptation with guilt). In the last part of this section, I discuss what implications can be drawn from theories of costly self-control and random indulgence for the design of commitment devices.

E.1 Relationship between beliefs, ex-post choice and menu preferences

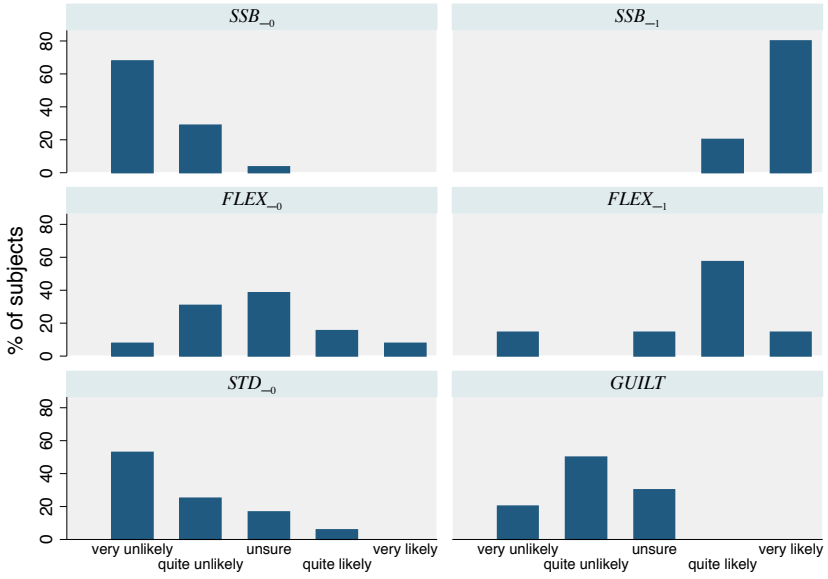
I tested whether findings are robust to excluding the outlier from the data; the correlation coefficients increase but remain fairly small and insignificant ($\rho = 0.21$, $p = 0.18$, 95% CI $= [-0.100, 0.483]$ for Pearson's correlation; $\rho = 0.10$, $p = 0.53$, 95% CI $= [-0.211, 0.391]$ for Spearman's). Second, I compared the 95% CIs based on Fisher's transformation (reported here) to bias-corrected bootstrap CIs, accounting for the fact that the belief measure is itself an estimate; CIs tend to be wider and one cannot discard large correlations of around 0.5. Finally, the estimate of subjective beliefs may be biased downwards (upwards) for low (high) likelihoods, as it is based on taking the mean of a binary guess. I therefore used an alternative calibration method: 15 students in my class assigned a likelihood from 0% to 100% to each of the 5 labels (*very unlikely*, *quite unlikely*, *unsure*, *quite likely*, *very likely*). The mean answers (rounded to the closest multiple of 0.05) were: $(0.10, 0.20, 0.50, 0.70, 0.90)$. Using this estimate of beliefs, I find $\rho = 0.06$, $p = 0.69$, 95% CI $= [-0.241, 0.357]$ for Pearson's correlation and $\rho = 0.05$, $p = 0.76$, 95% CI $= [-0.256, 0.344]$ for Spearman's.

Figure 18: Distribution of subjective beliefs about likelihood of reading the story by menu type

(a) Classification based on rank ordering



(b) Classification based on WTP

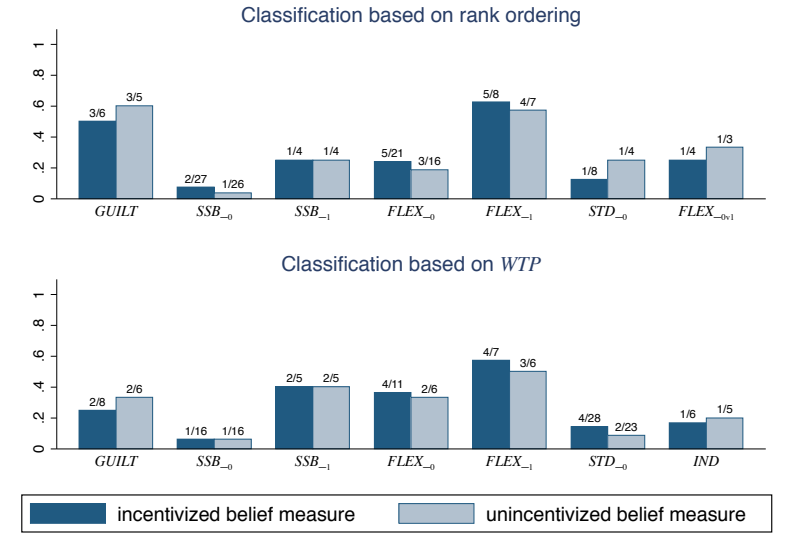


Notes: Subjective belief measured by the response to the question: *How likely are you to choose to learn the selected story in Period 2 if given the chance?* (answers: *very unlikely*, *quite unlikely*, *unsure*, *quite likely*, *very likely*)

Figure 19: Beliefs versus ex-post choice by menu type: unincentivized beliefs

Notes: "expected Option 1 (reading)" refers to the proportion of subjects who reported being quite or very likely to read the story if offered {0,1}; subjects were excluded when they reported being unsure.

Figure 20: Proportion of subjects with behavior inconsistent with beliefs



Notes: Proportion of subjects who chose Option 1 (0) and expected Option 0 (1) according to either the incentivized or the unincentivized belief measure. For the unincentivized belief measure, subjects were excluded when they reported being unsure.

Table 14: Distribution of sophisticated and naive subjects

Panel A: Incentivized Beliefs

	chose not to read	chose to read	Total
expected other not to read	57	7	64
	89.1%	**10.9%**	100.0%
	80.3%	**43.7%**	73.6%
expected other to read	14	9	23
	60.9%	39.1%	100.0%
	19.7%	56.3%	26.4%
Total	71	16	87
	81.6%	18.4%	100.0%
	100.0%	100.0%	100.0%
		$\chi^2 = 8.96$	p-value = 0.003

Panel B: Unincentivized Beliefs

	chose not to read	chose to read	Total
said unlikely to read	47	7	54
	87.0%	**13.0%**	100.0%
	81.0%	**46.7%**	74.0%
said likely to read	11	8	19
	57.9%	42.1%	100.0%
	19.0%	53.3%	26.0%
Total	58	15	73
	79.5%	20.5%	100.0%
	100.0%	100.0%	100.0%
		$\chi^2 = 7.31$	p-value = 0.007

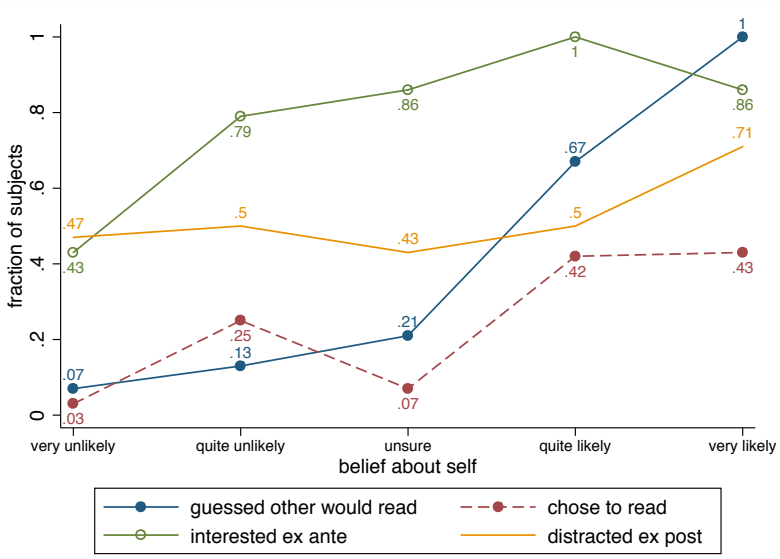
Notes: This table shows the proportion of subjects who behaved in a way consistent with their expectations. Panel A shows consistency of behavior with the incentivized measure of beliefs presented in Table 4 of the main text. Panel B uses the unincentivized belief measure also presented in Table 4 but excludes subjects who reported being unsure; the distribution is almost identical to Panel A when including the unsure subjects and classifying them using their incentivized guess as a tie-breaking rule.

Table 15: Predictive power of menu preferences

Panel A: Incentivized beliefs						
	Classification based on initial ranking			Classification based on WTP		
$\{0,1\} \succ_1 \{1\}$	-0.484***		-0.191***	-0.359***		-0.253***
	(0.080)		(0.069)	(0.071)		(0.087)
$\{0,1\} \succ_1 \{0\}$	0.373***		0.084	0.475***		0.318***
	(0.066)		(0.061)	(0.074)		(0.096)
$\{0\} \succ_1 \{1\}$		-0.778***	-0.696***		-0.306***	-0.127
		(0.085)	(0.089)		(0.105)	(0.117)
$\{1\} \succ_1 \{0\}$		0.0001	-0.046		0.384***	0.205
		(0.103)	(0.103)		(0.133)	(0.146)
adjusted R^2	0.339	0.598	0.618	0.346	0.298	0.370
observations	120	120	120	120	120	120
Panel B: Unincentivized beliefs						
	Classification based on initial ranking			Classification based on WTP		
$\{0,1\} \succ_1 \{1\}$	-0.475***		-0.185**	-0.389***		-0.191**
	(0.080)		(0.072)	(0.069)		(0.081)
$\{0,1\} \succ_1 \{0\}$	0.393***		0.099	0.509***		0.305***
	(0.066)		(0.064)	(0.072)		(0.090)
$\{0\} \succ_1 \{1\}$		-0.683***	-0.599***		-0.471***	-0.336***
		(0.088)	(0.092)		(0.097)	(0.109)
$\{1\} \succ_1 \{0\}$		0.139	0.088		0.304**	0.117
		(0.107)	(0.108)		(0.123)	(0.136)
adjusted R^2	0.342	0.574	0.592	0.395	0.413	0.466
observations	120	120	120	120	120	120
Panel C: Period 2 choice						
	Classification based on initial ranking			Classification based on WTP		
$\{0,1\} \succ_1 \{1\}$	-0.383***		-0.278***	-0.283***		-0.291***
	(0.093)		(0.104)	(0.090)		(0.103)
$\{0,1\} \succ_1 \{0\}$	0.107		0.020	0.111		0.015
	(0.077)		(0.092)	(0.086)		(0.116)
$\{0\} \succ_1 \{1\}$		-0.406***	-0.299**		0.013	0.188
		(0.136)	(0.140)		(0.142)	(0.151)
$\{1\} \succ_1 \{0\}$		-0.100	-0.101		0.304*	0.365**
		(0.159)	(0.160)		(0.168)	(0.182)
adjusted R^2	0.155	0.135	0.189	0.10	0.055	0.121
observations	87	87	87	87	87	87

Notes: Linear probability models with the dependent variable equal to 1 if the subject expected a similar other to read the story (Panel A), said he was quite or very likely to read the story (Panel B), read the story (Panel C). The explanatory variables are all indicators.

Figure 21: Relationship between subjective beliefs and other measures of interest for the story



Notes: The variable *interested ex ante* refers to subjects who said before the task that they were at least somewhat interested in learning what the story was; *distracted ex post* refers to subjects who reported having thought about the story during the task. Averages taken over the sample of subjects who were assigned $\{0, 1\}$ ($N = 87$).

E.2 Comparing temptation models

In Section 4.3 of the main text, I assess the explanatory power of various models of temptation by looking at how well they can explain the menu preferences, beliefs about likelihood of reading the story, and actual behavior of subjects who satisfy the following two criteria:

(*i*) *Ex-ante preference for not reading the story*: $\{0\} \succ_1 \{1\}$

(*ii*) *Temptation to read the story*: $\{0\} \succ_1 \{0, 1\}$

Using the initial rank ordering classification, 54 subjects satisfy these two criteria and 35 of them made a choice from the flexible menu $\{0, 1\}$ (see Table 6 of the main text). The corresponding numbers are 41 and 26 for the classification based on WTP. Table 16 shows observed frequencies for this latter classification. The relative fraction of tempted subjects with self-control preferences ($\{0\} \succ_1 \{0, 1\} \succ_1 \{1\}$) falls by about 11 percentage points relative to the initial classification but remains high (68%). Among subjects with SSB_{-0} preferences, no subject expected (a similar other) to read the story and only one (out of 16) chose to read it; beliefs and actual propensity to read the story are much higher for subjects with other forms of temptation preferences.

Table 16: Explanatory power of existing temptation models

Temptation model	menu preferences	expected propensity to read the story λ_1	actual propensity to read the story ρ_1
Dynamic Inconsistency (Strotz preferences)	$\{0\} \succ_1 \{0,1\} \sim_1 \{1\}$	$\lambda_1 = 1$	$\rho_1 = 1$
Costly Self-Control (GP 2001)	$\{0\} \succ_1 \{0,1\} \succ_1 \{1\}$	$\lambda_1 = 0$	$\rho_1 = 0$
Random Indulgence (Models w/ temptation uncertainty)	$\{0\} \succ_1 \{0,1\} \succ_1 \{1\}$	$\lambda_1 \in (0,1)$	$\rho_1 \in (0,1)$
Temptation with Guilt (Kopylov 2012)	$\{0\} \succ_1 \{1\} \succ_1 \{0,1\}$	$\lambda_1 \in \{0,1\}$	$\rho_1 \in \{0,1\}$
Observed	$\{0\} \succ_1 \{0,1\} \succ_1 \{1\}$ for 68.3% (28/41)	$\lambda_1 = 0$ (0/28)	$\rho_1 = 0.063$ (1/16)
	other temptation ranking for 31.7% (13/41)	$\lambda_1 = 0.23$ (3/13)	$\rho_1 = 0.40$ (4/10)

Notes: Predictions and findings for the 41 subjects for whom $\{0\} \succ_1 \{1\}$ and $\{0\} \succ_1 \{0,1\}$ according to $\succeq_1^{WTP}$. Observed frequency λ_1 corresponds to the proportion of tempted subjects who predicted that someone with the same ranking would read the story and ρ_1 is the fraction of tempted subjects who indeed read the story.

Predictions:

In the following, let $B_v(M) := \{a \in M \mid v(a) \geq v(b),\ \forall b \in M\}$ where $M \in \{\{0\},\{1\},\{0,1\}\}$. The four classes of models referenced in the table admit representations of the following form:

Strotz: $V_S(M) = \max_{a \in B_v(M)} u(a)$

Random Indulgence: $V_{RI}(M) = p \cdot \max_{a \in B_v(M)} u(a) + (1-p) \cdot \max_{a \in M} u(a)$

Gul and Pesendorfer: $V_{GP}(M) = \max_{a \in M} [u(a) + v(a)] - \max_{b \in M} v(b)$

Kopylov: $V_K(M) = \max_{a \in M} [u(a) + v(a)] - \max_{b \in M} v(b) + \kappa \max_{a \in M} u(a)$ where $\kappa \in (-1, \infty)$

Assuming the DM is sophisticated about his preferences and the latter are such that $u(0) > u(1)$, $v(1) > v(0)$ and $u(0) + v(0) > u(1) + v(1)$, one obtains the set of predictions for the first three models. For the Kopylov model, the ordering $\{0\} \succ_1 \{1\} \succ_1 \{0,1\}$ requires the restriction $\kappa < 0$ and is consistent with the DM choosing either 0 or 1 from $\{0,1\}$. In particular, the DM chooses 0 from $\{0,1\}$ if and only if $u(0) + v(0) - v(1) + \kappa u(0) > u(1) + \kappa u(0)$ i.e., $u(0) + v(0) > u(1) + v(1)$.

E.3 Commitment devices and temptation

In the introduction of the paper, I argue that knowing the motives behind commitment demand may be important for the design of policy interventions that seek to constrain individual choices. This knowledge can inform the design of commitment devices more generally. For instance, an agent who suffers from random indulgence may prefer a soft commitment device that only penalizes in states of the world where he would succumb, while leaving options open otherwise. On the other hand, a self-control type who never succumbs to temptation would not benefit from such a device; however, he could benefit from a hard commitment device that simply removes the temptation from his choice set. Below I present a very stylized example that illustrates this point.

Consider a worker who has to choose whether to check his emails ($a = 1$) or stay off ($a = 0$). Checking emails is tempting i.e., $v(1) > v(0)$. In the absence of temptation, the worker would prefer not to check his emails if there is no emergency, so as to stay productive i.e., $u(0) > u(1)$. However, at any point in time, there is some probability π that he will incur a cost $c > 0$ for not opening an important email, such that $u(0) - c < u(1)$; otherwise $c = 0$. Finally, assume that $u(0) + v(0) > u(1) + v(1)$. Consider the demand for commitment of two types:

Random Indulgent type: with probability $\lambda > 0$, the agent behaves like a Strotz agent; with probability $(1 - \lambda)$, he faces no temptation and behaves like a standard DM:

$$V_{RI}(A) := \lambda \max_{a \in B_v(A)} u(a, c) + (1 - \lambda) \max_{a \in A} u(a, c)$$

where $u(a, c) = u(a) + c$ and $B_v(A) := \{a \in A \,|\, v(a) \geq v(b) \ \forall b \in A\}$

Self-control type: the agent has standard Gul and Pesendorfer (2001) preferences:

$$V_{GP}(A) := \max_{a \in A} u(a, c) + v(a) - \max_{b \in A} v(b)$$

Let $X := \{0, 1\}$ and define a commitment device by a pair (A, P) where $A \subseteq X$ and $P \geq 0$ is a monetary penalty that must be paid for opening one's emails. We contrast the hard commitment $(\{0\}, 0)$ that simply removes the option from the table to the soft commitment $(\{0, 1\}, P)$ for some penalty $P > 0$ paid if $a = 1$; the benchmark case of no commitment corresponds to $(\{0, 1\}, 0)$. Given the assumptions on u, v and c, the utility of facing an unconstrained choice for each type is:[16]

[16]This implicitly assumes that an unconstrained worker can observe whether he received an important email in his mailbox (for instance based on the identity of the sender or the title of the email), so his decision resides in whether to open the email or not.

$$\mathbb{E}V_{GP}(\{0,1\},0) = \pi u(1) + (1-\pi)[u(0) + v(0) - v(1)]$$

$$\mathbb{E}V_{RI}(\{0,1\},0) = [\lambda + (1-\lambda)\pi]u(1) + (1-\lambda)(1-\pi)u(0)$$

Furthermore, $\mathbb{E}V_{GP}(\{0\},0) = \mathbb{E}V_{RI}(\{0\},0) = u(0) - \pi c$.

Now consider a penalty P such that (i) $v(0) > v(1) - P$ and (ii) $u(1) - P > u(0) - c$.[17] Then:

$$\mathbb{E}V_{RI}(\{0,1\},P) = \pi[u(1) - P] + (1-\pi)u(0)$$

$$\mathbb{E}V_{GP}(\{0,1\},P) = \pi[u(1) - P] + (1-\pi)[u(0) + v(0) - v(1)]$$

Clearly, $(\{0,1\},0) \succ_{GP} (\{0,1\},P)$ for all $P > 0$. On the other hand, $(\{0\},0) \succ_{GP} (\{0,1\},0)$ provided that

$$u(0) - u(1) - c + \frac{1-\pi}{\pi}[v(1) - v(0)] \geq 0 \tag{1}$$

Given the assumptions on P, it must be that $-[v(1) - v(0)] > u(0) - u(1) - c$, implying that the LHS of (1) is bounded above by $\frac{1-2\pi}{\pi}[v(1) - v(0)]$. Therefore, a necessary condition for (1) to hold is $\pi < \frac{1}{2}$. Assuming $\frac{u(1)-u(0)-c}{v(1)-v(0)} < \infty$, $\exists\ \bar{\pi} < \frac{1}{2}$ such that for all $\pi \in [0, \bar{\pi})$, a self-control type will have the following preference ordering:

$$(\{0\},0) \succ_{GP} (\{0,1\},0) \succ_{GP} (\{0,1\},P)$$

For a type who suffers from random indulgence, $(\{0,1\},P) \succ_{RI} (\{0,1\},0)$ as long as

$$P \leq \frac{\lambda(1-\pi)}{\pi}[u(0) - u(1)]$$

which will hold for small enough π. Furthermore, it can be verified that $(\{0,1\},P) \succ_{RI} (\{0\},0)$ by assumption (ii).[18] Therefore, if commitment is demanded, a random indulgent type will choose soft commitment while a self-control type will choose hard commitment.

[17] Such a penalty $P > 0$ will exist as long as the temptation $v(1) - v(0)$ to check emails is not too high or the cost c is large enough.

[18] It can also be verified that $(\{0\},0) \succ_{RI} (\{0,1\},0)$ iff

$$u(0) - \pi c \geq [\lambda + (1-\lambda)\pi]u(1) + (1-\lambda)(1-\pi)u(0) \ \Leftrightarrow\ c \leq \frac{\lambda + (1-\lambda)\pi}{\pi}[u(0) - u(1)]$$

F Procedures and Instructions

All sessions were conducted at the CESS lab of New York University. Subjects were recruited from the regular database of students who signed up to participate in such experiments. The first 4 sessions were conducted mid December 2014 with respectively 20, 20, 18 and 15 subjects. To reach a target of at least 100 subjects, two additional sessions were conducted during Spring 2015, with 24 and 23 subjects. Before participating, subjects were asked to sign a consent form (NYU IRB #10-8117). Payments were made privately at the end and subjects' decisions during the experiment could not be inferred from their earnings. To minimize differences in procedures across sessions, the same assistant helped with the collection and selection of the stories. The experiment was programmed and conducted with the software z-Tree (Fishbacher 2007). Paper instructions were distributed to subjects for Sections A-C and read collectively; the rest of the instructions appeared on subjects' screen. All the instructions are shown below, together with screenshots of the task.

F.1 Paper instructions for Sections A, B and C

You are about to participate in an experiment on decision-making. Please turn off your phones and similar devices now. For the purpose of this experiment, it is important that your table be cleared. If you have anything on your table, please place it back in your bag.

Most of the experiment will take place through your computer terminals. Please do not talk or try to communicate with other participants during the session. If you have any question during the session, raise your hand and your question will be answered so that everyone can hear.

Today's session will last approximatively two hours and will be divided in two periods:

Period 1 will last about **40 minutes**.
Period 2 will last up to **60 minutes**.

At the end of the session, you will also answer a questionnaire and will receive your payment. You will receive $10 for your participation, irrespective of your decisions. You may also receive additional earnings depending partly on your decisions, partly on the decisions of others, and partly on chance. You will be paid with a cash voucher, privately at the end of the session. Once you receive your payment, **you will be asked to leave the laboratory one by one**.

We will now start with Period 1. The instructions for Period 1 are divided in **5 sections: A, B, C, D and E**. The instructions for each section will be given to you once this section is reached. For the first 3 sections (A, B and C), we will read together paper instructions that will be distributed to you. The rest of the instructions (Sections D and E) will appear on your screen. Please read carefully the instructions and do not hesitate to raise your hand if you have any question.

Section A

Life is often made of unexpected events. In this part, we would like to **know one of the most incredible or weirdest things that has ever happened to you**. For instance:

1. You once made an unbelievable encounter (e.g. you met a superstar in the bathroom of your favorite restaurant)

2. You found yourself in some unexpected place, strange position or uncontrollable state of mind (e.g. you were totally drunk and you woke up in a bikini in the middle of nowhere)

3. You were the spectator of some extraordinary event (e.g. you were the witness of a bomb attack or an earthquake)

You will be asked to **describe this event on a blank form** contained in the envelope that was placed in front of you on your desk. You will be given up to 10 minutes to think about this event and describe it in a few lines. Please write legibly. We ask you not to write down any information that personally identifies you. Also, please do not report any illegal activity or use inappropriate language to describe this event.

After you are done describing this personal event, an assistant will collect the envelopes and bring them to an other room. While the experiment continues, the assistant will go over the various stories and **select the one she considers to be the most incredible story**. Finally, she will come back before the end of Period 1 to give the corresponding envelope to the experimenter and all the other envelopes will be destroyed. Only an electronic record of each story will be kept on a computer file. As a result, whether your story is selected or not, **any information you write down on your form will be kept strictly anonymous**.

In Period 2, a new sealed envelope will be distributed to you. This envelope will contain an **access code, which will allow some of you to learn the story selected in Period 1.** This story will be recorded on your computer during Period 1 and you will need to enter the access code in a box on your screen in order to learn about the story. More details about how one gets to learn the story will be given in Sections B and C.

For now, please take out the form from the envelope you have in front of you and describe your personal story. Your form will be collected in 10 minutes.

Section B

During Period 2, your main task will be to stare attentively at a four-digit number that will appear on your computer screen for a period of up to 60 minutes. This number will be incremented every second. At random times during that period, you will be prompted to **enter the last number you saw on your screen**. The number will be reinitialized after every prompt and you will receive a total of 5 prompts during the period. Below the four digits, some of you will see a box where the code giving access to the selected story can be entered at any time. How you are paid for this attention task and whether you can learn about the selected story will depend on your choices in Section C. However there are two possible options:

Option "No Learning": You perform the attention task without ever learning about the selected story. You are paid for all 5 prompts you receive at a rate of $2 for each correct answer.

Option "Learning": You learn about the selected story at some time during the task. You are paid at random for 4 of the 5 prompts you receive at a rate of $2 for each correct answer.

No matter what the option is, you will receive feedback about whether your answers were correct only at the end of the experiment. Furthermore, **whether you get to learn the selected story or not, you will spend the same amount of time on the attention task.** Besides performing the attention task and learning about the selected story, no other activity will be allowed (including checking your phone, surfing the Internet, studying...). If you are caught doing something else, you will not be paid for your participation in the experiment.

You will now practice with the attention task for about 2 minutes before moving on to Section C. [*The program entitled* **practice_task.ztt** *was run.*]

Section C

At the start of Period 2, you will be assigned one of the following 3 MENUS:

MENU "Decide in Period 2": this menu allows you to decide in Period 2 whether to learn or not the selected story while you are performing the attention task. In other words, you have the choice in Period 2 between the "Learning" or the "No Learning" option.

MENU "Pre-Select Learning": this menu only gives you access to the "Learning" option in Period 2. In other words, you learn the selected story and you are paid for only 4 of the 5 prompts received during the attention task. You can choose to learn the story at any time you want during the task but if you do not enter the access code by the end of Period 2, the story automatically appears on your screen.

MENU "Pre-Select No Learning": this menu only gives you access to the "No Learning" option in Period 2. In other words, you do not get the chance to learn the selected story and you are paid for all 5 prompts received during the attention task. Practically, your access to the selected story is blocked by removing from your screen the box where you would normally enter the access code.

No matter which menu you receive and whether you learn the selected story or not, you will spend the same amount of time (up to 60 minutes) on the attention task.

We now would like to know which of the menus described above you would prefer to receive in Period 2. More precisely, we ask you to **rank all three menus according to your preference**. On your screen, two columns will appear. In the first column called "Menu", you will see a list of all three menus. In the second column called "Ranking", there will be an empty box for each of the menus. We ask you to enter a number between 1 and 3 corresponding to your order of preference.

Example 1:

Suppose that menu "Decide in Period 2" is your preferred option, followed by menu "Pre-Select

No Learning" and finally by menu "Pre-Select Learning". Then you should enter 1 in the box corresponding to "Decide Tomorrow", 2 in the box corresponding to "Pre-Select No Learning" and 3 in the box corresponding to "Pre-Select Learning". This is shown in Table 1 below.

Menu	Ranking
Decide in Period 2	1
Pre-Select Learning	3
Pre-Select No Learning	2

Table 1

What if you are completely indifferent between two (or all three) menus? If receiving one menu or the other would be exactly the same to you, you should **enter the SAME number** for those menus.

Example 2:

Suppose that you are completely indifferent between receiving menu "Pre-Select No Learning" and menu "Pre-Select Learning" but you strictly prefer both menus to menu "Decide in Period 2". In this case you should enter 1 in the box corresponding to "Pre-Select No Learning" **AND** in the box corresponding to "Pre-Select Learning" while you should enter 2 in the box corresponding to "Decide in Period 2". This is shown in Table 2. Alternatively, if you are completely indifferent between all three menus, you should enter 1 in each box. This is shown in Table 3.

Menu	Ranking
Decide in Period 2	2
Pre-Select Learning	1
Pre-Select No Learning	1

Table 2

Menu	Ranking
Decide in Period 2	1
Pre-Select Learning	1
Pre-Select No Learning	1

Table 3

The menu you will face in Period 2 will be selected according to the following procedure. First, a computer will simulate a coin toss:

- If HEADS comes up, you will be offered menu "Decide in Period 2", irrespective of your ranking.

- If TAILS comes up, your ranking will be taken into account. More precisely, a computer will select one of the three menus at random.

However, the chances that each menu is selected will depend on its ranking: the menu you ranked first will get the highest chances, followed by the menu you ranked second and finally, the last menu. If you give the same ranking to two (or all three) menus, they will get the same chance of being selected.

You will be told the menu you received right at the start of Period 2. Notice that **since you get a higher chance to obtain your preferred menu in Period 2 if you give rank 1 to this menu, you should tell us what you truly prefer among all three menus**.

If you want to know the precise chances with which a given menu is selected in case your ranking is taken into account (that is, if TAILS comes up), please take some time to read the table below.

Suppose that TAILS comes up and consider three menus, X, Y and Z. Here is the percentage chance that a menu is selected depending on its ranking:

ranking of (X, Y, Z)	percentage chance of being drawn ($\%_X$, $\%_Y$, $\%_Z$)
$(1, 2, 3)$	$(50, 30, 20)$
$(1, 1, 2)$	$(40, 40, 20)$
$(1, 2, 2)$	$(50, 25, 25)$
$(1, 1, 1)$	$(33.3, 33.3, 33.3)$

How to read the table:

$(1, 2, 3)$ means that X was ranked first, Y second and Z last.
$(50, 30, 20)$ means X has a 50% chance to be selected, Y a 30% and Z a 20% chance.

Any questions?

Screen 1: **This is Section C of Period 1.**

You are now asked to rank the 3 menus that were described to you in the instructions.

Screen 2: *for list order* $l_1 = (\{0, 1\}, \{1\}, \{0\})$

Description of the 3 menus you can receive in Period 2:

Menu "Decide in Period 2"

- You have the choice in Period 2 between the "Learning" and "No-Learning" options.
- If you choose to learn the story, you are paid for 4 of the 5 prompts received during the task.
- If you do not choose to learn the story, you are paid for all 5 prompts received.

Menu "Pre-Select Learning"

- You only get access to the "Learning" option in Period 2.
- You can choose when to learn the story but you are informed of it anyway by the end of the task.
- You are paid for 4 of the 5 prompts received during the attention task.

Menu "Pre-Select No Learning"

- You only get access to the "No-Learning" option in Period 2.
- You are not offered the chance to learn the story.
- You are paid for all 5 prompts received during the attention task.

Please tell us which menu you prefer by entering a number (either 1, 2 or 3) in the box corresponding to each menu.

If you are indifferent between two menus, please enter the same number.

MENU	RANKING
Decide in Period 2	
Pre-Select Learning	
Pre-Select No Learning	

Remember that your ranking affects the chances that are you are assigned a given menu in Period 2.

OK

Screen 2 *list order* $l_2 = (\{1\}, \{0\}, \{0, 1\})$

Description of the 3 menus you can receive in Period 2:

Menu "Pre-Select Learning"

- You only get access to the "Learning" option in Period 2.
- You can choose when to learn the story but you are informed of it anyway by the end of the task.
- You are paid for 4 of the 5 prompts received during the attention task.

Menu "Pre-Select No Learning"

- You only get access to the "No-Learning" option in Period 2.
- You are not offered the chance to learn the story.
- You are paid for all 5 prompts received during the attention task.

Menu "Decide in Period 2"

- You have the choice in Period 2 between the "Learning" and "No-Learning" options.
- If you choose to learn the story, you are paid for 4 of the 5 prompts received during the task.
- If you do not choose to learn the story, you are paid for all 5 prompts received.

Please tell us which menu you prefer by entering a number (either 1, 2 or 3) in the box corresponding to each menu.

If you are indifferent between two menus, please enter the same number.

MENU	RANKING
Pre-Select Learning	
Pre-Select No Learning	
Decide in Period 2	

Remember that your ranking affects the chances that are you are assigned a given menu in Period 2.

OK

F.2 Screen instructions for Sections D and E

Section D

Screens for the Dollar WTP condition:

Screen 1:

This is Section D of Period 1.

You will be asked to make choices under two different scenarios that will appear on the next two screens.

Your choices under a given scenario will only apply if this scenario occurs.

However since each scenario can potentially occur, you are asked to make choices as if this scenario occurred.

In each scenario, you will be asked whether you would replace one menu with some other menu in exchange of a smaller show-up fee.

Screen 2:

Remember that in Section C you provided the following ranking:

Decide in Period 2: 1

Pre-Select Learning: 2

Pre-Select No Learning: 3

SCENARIO 1: Suppose your ranking is taken into account (TAIL comes up) and Pre-Select Learning is assigned to you.

QUESTION: Would you replace Pre-Select Learning with Decide in Period 2 if $X were deducted from your show-up fee?

Please answer this question for all values of X below. You can choose to always select the same option or switch exactly once from left to right.

Choice #	You select option:		
1	Pre-Select Learning	• ○	Decide in Period 2 - $ 0.50
2	Pre-Select Learning	• ○	Decide in Period 2 - $ 0.40
3	Pre-Select Learning	• ○	Decide in Period 2 - $ 0.30
4	Pre-Select Learning	• ○	Decide in Period 2 - $ 0.20
5	Pre-Select Learning	○ •	Decide in Period 2 - $ 0.10
6	Pre-Select Learning	○ •	Decide in Period 2 - $ 0.05
7	Pre-Select Learning	○ •	Decide in Period 2 - $ 0.02
8	Pre-Select Learning	○ •	Decide in Period 2 - $ 0.01

Your answer for one randomly selected value of X will be used to determine whether you keep Pre-Select Learning or receive Decide in Period 2 at a cost of $X.

Screen 3:

Remember that in Section C you provided the following ranking:

Decide in Period 2: 1

Pre-Select Learning: 2

Pre-Select No Learning: 3

SCENARIO 2: Suppose your ranking is taken into account (TAIL comes up) and Pre-Select No Learning is assigned to you.

QUESTION: Would you replace Pre-Select No Learning with Pre-Select Learning if $X were deducted from your show-up

Please answer this question for all values of X below. You can choose to always select the same option or switch exactly once from left to right.

Choice #	You select option:		
1	Pre-Select No Learning	• ○	Pre-Select Learning - $ 0.50
2	Pre-Select No Learning	• ○	Pre-Select Learning - $ 0.40
3	Pre-Select No Learning	• ○	Pre-Select Learning - $ 0.30
4	Pre-Select No Learning	• ○	Pre-Select Learning - $ 0.20
5	Pre-Select No Learning	○ •	Pre-Select Learning - $ 0.10
6	Pre-Select No Learning	○ •	Pre-Select Learning - $ 0.05
7	Pre-Select No Learning	○ •	Pre-Select Learning - $ 0.02
8	Pre-Select No Learning	○ •	Pre-Select Learning - $ 0.01

Your answer for one randomly selected value of X will be used to determine whether you keep Pre-Select No Learning or receive Pre-Select Learning at a cost of $X.

Screens for the Time WTP condition

Screen 1:

This is Section D of Period 1.

You will be asked to make choices under two different scenarios that will appear on the next two screens.

Your choices under a given scenario will only apply if this scenario occurs.

However since each scenario can potentially occur, you are asked to make choices as if this scenario occurred.

In each scenario, you will be asked whether you would replace one menu with some other menu in exchange of spending some extra time on the attention task.

This extra time would NOT allow you to earn additional money.

You would simply receive one last prompt and be required to enter the last number you saw in order to proceed.

Screen 2:

Remember that in Section C you provided the following ranking:

Decide in Period 2: 1

Pre-Select Learning: 2

Pre-Select No Learning: 3

SCENARIO 1: Suppose your ranking is taken into account (TAIL comes up) and Pre-Select Learning is assigned to you.

QUESTION: Would you replace Pre-Select Learning with Decide in Period 2 at a cost of spending N extra minutes on the attention task?

Please answer this question for all values of N below. You can choose to always select the same option or switch exactly once from left to right.

Choice #	You select option:			
1	Pre-Select Learning	•	○	Decide in Period 2 + 10 minutes on the attention task
2	Pre-Select Learning	•	○	Decide in Period 2 + 8 minutes on the attention task
3	Pre-Select Learning	•	○	Decide in Period 2 + 6 minutes on the attention task
4	Pre-Select Learning	•	○	Decide in Period 2 + 5 minutes on the attention task
5	Pre-Select Learning	○	•	Decide in Period 2 + 4 minutes on the attention task
6	Pre-Select Learning	○	•	Decide in Period 2 + 3 minutes on the attention task
7	Pre-Select Learning	○	•	Decide in Period 2 + 2 minutes on the attention task
8	Pre-Select Learning	○	•	Decide in Period 2 + 1 minute on the attention task

Your answer for one randomly selected value of N will determine whether you keep Pre-Select Learning or receive Decide in Period 2 and spend N extra minutes on the task.

Screen 3:

Remember that in Section C you provided the following ranking:

Decide in Period 2: 1

Pre-Select Learning: 2

Pre-Select No Learning: 3

SCENARIO 2: Suppose your ranking is taken into account (TAIL comes up) and Pre-Select No Learning is assigned to you.

QUESTION: Would you replace Pre-Select No Learning with Pre-Select Learning at a cost of spending N extra minutes on the attention task?

Please answer this question for all values of N below. You can choose to always select the same option or switch exactly once from left to right.

Choice #	You select option:			
1	Pre-Select No Learning	•	○	Pre-Select Learning + 10 minutes on the attention task
2	Pre-Select No Learning	•	○	Pre-Select Learning + 8 minutes on the attention task
3	Pre-Select No Learning	•	○	Pre-Select Learning + 6 minutes on the attention task
4	Pre-Select No Learning	•	○	Pre-Select Learning + 5 minutes on the attention task
5	Pre-Select No Learning	○	•	Pre-Select Learning + 4 minutes on the attention task
6	Pre-Select No Learning	○	•	Pre-Select Learning + 3 minutes on the attention task
7	Pre-Select No Learning	○	•	Pre-Select Learning + 2 minutes on the attention task
8	Pre-Select No Learning	○	•	Pre-Select Learning + 1 minute on the attention task

Your answer for one randomly selected value of N will determine whether you keep Pre-Select No Learning or receive Pre-Select Learning and spend N extra minutes on the task.

Section E

Screen 1: **This is Section E of Period 1.**

You will be asked questions about the selected story and the potential interest around it.

Screen 2:

Provided we could find such a participant, you were matched with another participant in this room who ranked the 3 menus in exactly the same way as you did:

Decide in Period 2: 1

Pre-Select Learning: 2

Pre-Select No Learning: 3

We now would like to know whether you think this participant will choose to learn the selected story if offered the chance in Period 2.

Please click on the box "Learning" if you think he will choose to learn the story and on the box "No Learning" if you think he will choose not to learn.

Learning	No Learning

If there was such a participant and he could make a choice in Period 2, you will receive $2 if you correctly guessed his decision and $0 otherwise.

Screen 3:

QUESTION 1: How likely are you to choose to learn the selected story in Period 2 if given the chance?

Answers: very unlikely, quite unlikely, unsure, quite likely, very likely

QUESTION 2: How likely do you think your story was selected?

Answers: very unlikely, quite unlikely, unsure, quite likely, very likely

Screen 4:

QUESTION 3: How interested are you in learning whether the selected story was yours?

Answers: completely indifferent, somewhat indifferent, somewhat interested, very interested, dying to learn)

QUESTION 4: How interested are you in learning the most incredible story among the other participants in this room?

Answers: completely indifferent, somewhat indifferent, somewhat interested, very interested, dying to learn)

[*Answers to Questions 1, 2, 3, and 4 were presented as buttons on a horizontal line*]

F.3 Period 2 screens

Screen 1:

This is the end of Period 1. We will start Period 2 in a moment.

On your next screen, you will learn about the menu that was assigned to you.

You will then move to the attention task for a period of up to 60 minutes.

Please wait for the experimenter to give you a code to enter below in order to proceed.

Screen 2:

[*If assigned menu* $\{0, 1\}$]

Following the procedure described to you in Period 1, you were assigned menu:

"Decide in Period 2"

- You will have the choice to learn or not the selected story while doing the task.
- You will be paid for 4 of the 5 prompts received if you choose to learn, and for all 5 otherwise.

[*If assigned menu* $\{0\}$]

Following the procedure described to you in Period 1, you were assigned menu:

"Pre-Select No Learning"

- You will not have the possibility to learn the selected story.
- You will be paid for for all 5 prompts you receive during the task.

[*If assigned menu* $\{1\}$]

Following the procedure described to you in Period 1, you were assigned menu:

"Pre-Select Learning"

- You will learn the selected story during or at the end of the task
- You will be paid for 4 of the 5 prompts you receive during the task.

Screen 3:

This is the start of the attention task. The task will last up to 60 minutes.

At random times you will be prompted to enter the number you just saw.

Remember that you can receive $2 if you provide a correct answer.

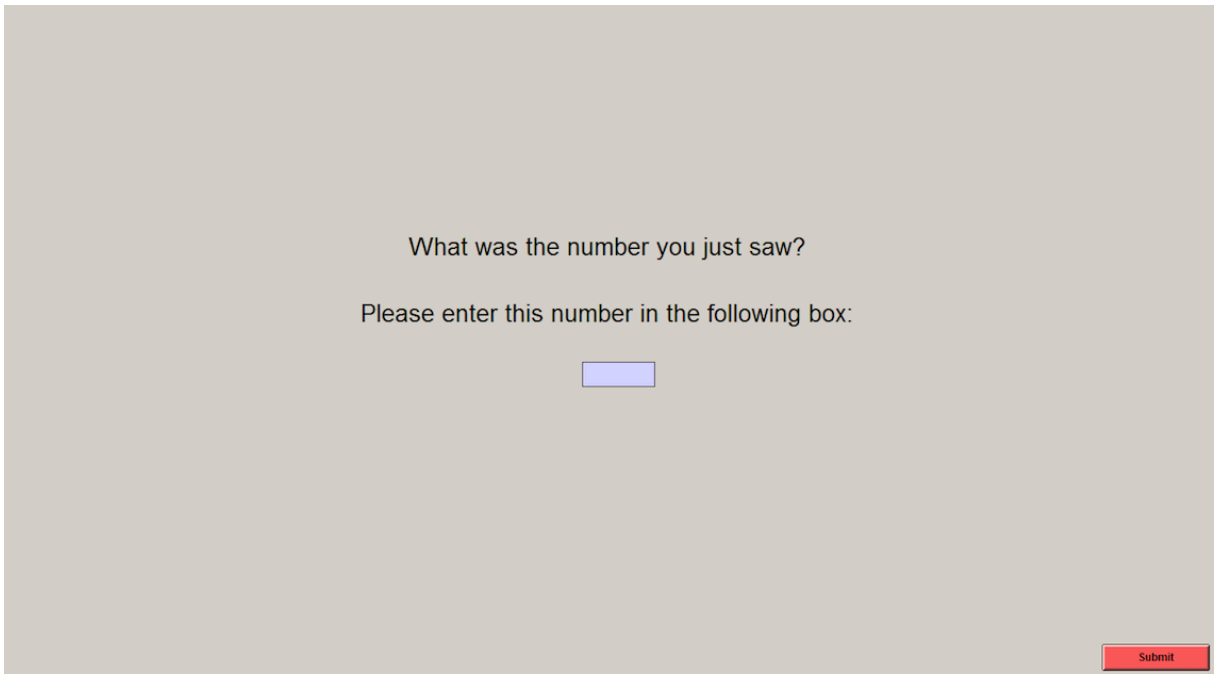
[*If assigned menu* $\{0, 1\}$] You can choose to learn the selected story at any time by simply entering the secret code in the envelope.

[*If assigned menu* $\{1\}$] You can choose to learn the selected story at any time you want but you will be informed of the story for sure.

Screenshots:

Figure 22: Attention task screen

Figure 23: Prompt and story screens



End of Period 2

This is the end of the attention task. Out of the 5 prompts [4 prompts selected for payment], you gave 3 correct answers. Therefore you will receive 6 dollars for your answers in this task. You will learn about your total payoffs after completing a short questionnaire.

F.4 Exit questionnaire

Screen 1:

- What is your gender? (answers: male, female)

- What is your major? (answers: math, computer science, physics/chemistry, economics, humanities, foreign language, other)

- Please enter your GPA in the box below. If you do not have a GPA yet or you do not know your GPA, please enter -1.

Screen 2:

Question 1: Can you explain how you ranked the 3 menus? More precisely, we are interested in understanding why you ranked one menu strictly above another and/or why you were indifferent between two menus. Please explain in the box below. After you are finished typing, press OK.

Question 2: Which of the following statements best applies to you? *During the attention task:*

1. *I did not think about the selected story at all because I did not care about it.*
2. *I did not think about the selected story at all because I was very concentrated on staring at the number.*
3. *At first I was not thinking about the selected story, but as time passed, I got bored and thought more about it.*
4. *I kept wondering what the story was about and felt really tempted to learn about it but I managed to stay focused on the task.*
5. *I kept wondering about the story and this prevented me from staying focused on the task.*

Screen 3:

QUESTION 3: Did you find any of the instructions confusing? Please explain in the box below and press OK.

QUESTION 4: Consider the following two options: A) Receive a $10 show-up fee and not learn the story, and B) Receive a $ 10 - X show-up fee and learn the story.

For what value of X would you have been indifferent between options A) and B)? Please enter a number between 0.00 and 10.00 in the box below.

Example 1: If you enter 0, this means that you would not have been willing to receive a lower show-up fee to learn the story.

Example 2: If you enter 4, this means you would have been willing to only receive a $6 (= 10 - 4) show-up fee to learn the story.

Screens 4-6

Note: *Items from the following three scales appeared in a different order and were mixed across the three different measures. See z-Tree code for more details.*

On a scale from 1 to 5, please rate the extent to which you agree with the following statements: (1 = strongly disagree; 5 = strongly agree)

Big Five Conscientiousness (Subscale "Industriousness" of DeYoung et al. 2007, p.887):

1. I usually carry out my plans.
2. I often waste my time.
3. I often can't put my mind on the task at hand.
4. I like to get things done quickly.
5. I tend to mess things up.
6. I always finish what I start.
7. I find it difficult to get down to work.
8. I often postpone decisions.
9. I always know what I am doing.
10. I am easily distracted.

Epistemic Curiosity (subsample of 10 EC items from Litman and Spielberger 2003, p.79-80):

1. I am interested in discovering how things work.
2. When I have a theory, I like to test it out.
3. I find it fascinating to learn new information.
4. I enjoy exploring new ideas.
5. If someone says something ambiguous to me, I want an explanation.
6. I am interested in how different people would react during a crisis.
7. If something unexpected happens, I like to figure out what caused it.
8. When there is a riddle, I am interested in trying to solve it.
9. When there is a word I don't know, I look up the meaning.
10. I like to imagine what people are thinking from their faces.

Curiosity as Deprivation (subsample of 10 CFD items from Litman and Jimerson 2004, Table 1 p.150):

1. When I meet someone I like, it bothers me not to know how she/he feels about me.
2. When there is a problem, I can't rest without knowing the answer.
3. I often can't put my mind on the task at hand.
4. It aggravates me if I can't remember a fact and will think about it until it comes to me.
5. It is important to me to feel knowledgeable.
6. I have hard time accepting mysteries that can't be solved.
7. Conceptual problems keep me awake thinking about solutions.
8. When I read something that does not make sense, I ignore it and keep reading.
9. It drives me crazy when a television program ends with a cliffhanger.
10. When a word is on the tip of my tongue, it bothers me until I find it.

Summary screen - total earnings (example)

Your payment at the end of this session:

$10.00 show-up fee

+ $8.00 for the attention task of Period 2

+ $2.00 for your guess in Section E of Period 1

- $0.05 payment for replacing the selected menu

= $19.95 total earnings

Please write down the amount you earned on your receipt.

Final screen

This is the end of the experiment! Thanks for participating.

The experimenter will come in a moment to give you a $19.95 voucher.

G Selected stories and explanation of menu rankings

Below are the stories that were selected by the assistant in each of the 6 sessions (Section G.1). To preserve anonymity, subjects reported their story on a blank form, which they placed in an unnumbered envelope and were asked not to report any information that could personally identify them. Furthermore, the forms were destroyed after the sessions and only typed versions were kept. In Section G.2, I also present a list of comments made by subjects in the exit survey to explain how they ranked the different menus.

G.1 Selected stories (all sessions S1-S6)

S1: "*I always thought that drinking too much would harm one's health. It was one day when we were partying at a friend's farmhouse. As usual most of us were having drinks out of our capacities. There was this friend of [ours] we invited who was having trouble at home. We knew he wouldn't drink since he wasn't in a good mood and that was evident. All the others including me were drunk and dozed off. In the morning to our utter shock our friend had committed suicide by hanging himself. No one still knows the reason behind this and I can't take that image out of my mind even now.*"

S2: "*One summer, I was working at a gynecologist's assistant in Germany. I saw lots of cool and gross things. That summer, I was living with family members, and one weekend, my cousin and I drove to her old high school, a boarding school in a Bavarian castle for a reunion of sorts. We drank a lot, ended up being driven to a nightclub in some city I remember. I met a guy, we got friendly, I ditched him, and returned to the dance floor with my cousin. We left the nightclub, ended up at McDonald's at 3AM, and my cousin told me we'd be sleeping at her friend's house that night. The friend met us in McDonald's. It was the guy I'd hooked up with and ditched at the club. He turned out to be a German aristocrat. The rest of the night was awkward, to say the least, though we did end up swimming in a freezing river in the middle of the night.*"

S3: "*Just a week ago, I was meeting up for a date with someone I met on the dating app Hinge. When I arrive at the restaurant, the person is sitting there with Jonah Hill, the famous actor. We talk and drink and he pays for us to go bowling, as I learn that he and my date are long-time best friends. A few days later we meet up for another date, and Jonah is there again and he guests me by name and asks questions about my life that he totally remembers from the last "date". The date was a dud, but now I have Jonah Hill's phone number.*"

S4: "*One of the weirdest things that ever happened to me: I got into a cab here in New York. The cab driver looks at me through the review mirror and says, "you've been in my cab before". He then proceeded to describe to me exactly what I had worn the last time I was in his cab, which was 8 months prior. He was right, it was definitely me. I got out of the cab immediately!*"

S5: "*I was very lucky and unlucky also being part of one of the most disastrous explosions in my country. I was with my college group in a market. We were there as a part of our project event. There was a bomb explosion and around 600 plus people died and 300 plus were injured badly. I lost one of my friends in this incident. Everything just happened right in front of my eyes. Blood was all around me. Nothing happened to me and I really thank God for that but I lost my friend. She was the only child of her parents. We could not find her and her whole body and her parents had to recognize her by her ring on her finger. I could not sleep for nights. She just went to some other shop for a moment. I wished I could have stopped her and saved her life.*"

S6: "*I was in the subway in London and the train stopped for several minutes at one stop. When we finally moved and I could leave the train, I learnt that, in the train right after mine, there had been a bomb explosion. It was the 2005 Al Qaeda bomb attack in London, and I had been one train way from dying.*"

G.2 Sample of subjects' explanations of their menu rankings

Below is a selection of comments made by subjects in order to explain how they ranked the three menus (i.e. why they ranked one menu strictly above another and/or why they were indifferent between two menus - see Instructions in Section E).[19] To illustrate the different rationales behind a given preference ordering, comments are grouped by menu type, based on the initial rank ordering classification. In brackets, I report the Session #, the subject's ID and the subject's menu type based on 1) the initial rank ordering classification and 2) the WTP classification; orderings that do not belong to one of the menu types presented in Table 1 or 3 of the main text are grouped in the category "Other".

G.2.1 Explanations for SSB_{-0}

- "I chose the no learning option first, then the decide in part 2 option, then the learning option because I thought that learning during the task would distract me from paying attention to the numbers. Particularly, if I knew I could enter the code whenever I wanted and see the story, then I might be thinking about whether or not to enter the code during the task and subsequently miss the incrementing numbers. I wanted to focus and receive the maximum payment. That was why I chose no learning first." (S1, ID 6, SSB_{-0}, STD_{-0})

- "I chose the no learning menu as my first choice because i did not care about the story. I wanted the option that gave me more money, and that was the no learning menu option. I ranked the decision menu as my second choice because in that case, I could still choose no

[19] The full list of comments is available from the author upon request.

learning. I preferred to just have the no learning menu over the choice just because I didn't want extra clutter on my screen, but really I was more or less indifferent. I chose the learning menu as my last choice because I did not want that one. I wanted to make the most money possible, so I made sure not to rank that option highly." (S2, ID 23, SSB_{-0}, STD_{-0})

- "I ranked "Pre Select Learning" the last because I wanted to have every opportunity to earn money (although it was surprisingly difficult...). I knew that in the long-run, the story would not be as important." (S2, ID 39, SSB_{-0}, STD_{-0})

- "I wasn't interested in knowing the story. So i decided to choose the choices that didn't reveal the stories as my upper priorities. I wanted to stay focused on the task, so I was okay with not seeing the story." (S4, ID 68, SSB_{-0}, STD_{-0})

- "There was no earnings if I learnt the story, so I chose to not learn it. Though I was curious, I understood that curiosity can cost me 2$." (S5, ID 92, SSB_{-0}, SSB_{-0})

- "Firstly, I preferred the No Learning option because I am more interested in the monetary gain than knowning an interesting story. So I ranked the No Learning option first and the Learning option last. I ranked Decision during task as 2nd because it allowed me to decide No Learning if I were not granted my first choice. However, I did not want to think about having to make a decision during the task and that is why I ultimately preferred the No Learning option over the Decision option." (S5, ID 93, SSB_{-0}, SSB_{-0})

- "I want to take care of the number more precisely so i do not want to know the story." (S6, ID 119, SSB_{-0}, SSB_{-0})

G.2.2 Explanations for $FLEX$ (all flexible types)

- "Not interested in learning stories, so as well increase the payoff, but still keeping the option to read in case i get bored." (S1, ID 14, $FLEX_{-0}$, STD_{-0})

- "My sole aim for this experiment was to make the most amount of money possible. Therefore, I ranked the choices that would allow me to choose "no learning" the highest. Though I was interested in learning the story, I felt that one story was not worth $2, and I would rather have $2 than a story in my mind. I did rank the "decide in period 2" first in case I was having second thoughts and realized I wanted to know the story afterall." (S2, ID 29, $FLEX_{-0}$, STD_{-0})

- "I ranked "Decide in Period 2" highest because at that point I was not entirely sure if I would want to view the story in the task, because I knew I may become very bored and want to hear the entertaining story, but I also knew I would prefer to not learn it and get more money. I ranked "Pre-select no learning" second because for the most part I believed I would not care for the story and would prefer the option to get more money, though I did not prefer this option as much as having the option to change my mind later. I ranked "pre-select learning" last because I preferred having the chance to make more money." (S2, ID 37, $FLEX_{-0}$, STD_{-0})

- "I was not particularly interested in reading the story but I did not know how bored I would get during the task. I like keeping my options open, generally, so I wanted to allow myself to decide on whether to see the story and ranked that 1st." (S2, ID 26, $FLEX_{-0}$, $FLEX_{-0}$)

- "I was inclined towards "not learning" because I would rather have two extra dollars than learn about some 'incredible story' of someone that I don't know and don't care about. However I put down "decide in part 2" because choice is always better than no choice." (S3, ID 45, $FLEX_{-0}$, STD_{-0})

- "I ranked the decide menu as the highest because I wanted to have the most options and the most flexibility when choosing the final decision." (S4, ID 65, $FLEX_{-0}$, STD_{-0})

- "I ranked to decide in Part 2 as I knew I could change my decision as waiting requires more patience and I was anxious to know the story" (S4, ID 72, $FLEX_{-0}$, $FLEX_{-0}$)

- "I ranked 1st the menu that allowed me to choose. Although I never intended to learn the story, I believe in maintaining my freedom of choice as a principle." (S6, ID 118, $FLEX_{-0}$, STD_{-0})

- "Because I want to have the control of choice and I do not want to read anything else after the final, even if it is super super interesting!." (S2, ID 32, $FLEX_{-1}$, $FLEX_{-1}$)

- "I knew that I was really interested in finding out what the story was, but I thought that it would be a wiser decision to see if I was good at the attention task before essentially paying two dollars to see it." (S3, ID 43, $FLEX_{-1}$, $FLEX_{-1}$)

- "I had put decide in period 2 first so that I could have some choice and effect on which menu I would receive. I ranked the other two options both as 2 because I was unsure at the time of which menu I wanted" (S2, ID 40, $FLEX_{-0 \vee 1}$, $FLEX_{-0}$)

- "My ranking in order was 1,2,2. I chose decide in period 2 first because I wanted a choice. 60 min is a long time to wait and just look at numbers. At the same time, I knew I could get a higher payoff if I stuck with the no learning. I really just wanted the option to choose and not be locked into one." (S3, ID 47, $FLEX_{-0\vee1}$, $FLEX_{-0}$)

- "I was undecided so I ranked to make my decision later." (S2, ID 31, $FLEX_{-0\vee1}$, IND)

G.2.3 Explanations for other types

Strict preference for $\{1\}$ (i.e., $\{1\} \succ_1 \{0\}, \{0,1\}$)

- "I was interested in the "amazing" story and wanted to hear what it was. Giving up only $2 was worth hear the story, but I ended up not being able to anyway." (S1, ID 2, type in category Other)

- "I ranked the menu option to be able to pre learn the envelope story because I was really dying to see it and I have a curious nature which made me want to see it even more. I ranked the option to be able decide as 2 because I knew I was going to select to see it anyways." (S2, ID 28, SSB_{-1}, SSB_{-1})

- "I ranked "Pre-select learning" as number one because I knew that I wanted to learn about the story for sure. I ranked "Decide in Period 2" because I would still have the option of learning about the story. Then I ranked "Pre-Select No Learning" because that just did not interest me." (S3, ID 54, SSB_{-1}, IND)

- "I ranked the learning menu higher because I was really excited about learning and reading the story. I ranked the decided in period 2 just in case I changed my mind I would still be able to choose which ever one I wanted. I ranked no learning last because I wanted to read the story and this category would not allow me too" (S3, ID 57, SSB_{-1}, SSB_{-1})

Strict preference for singletons (i.e., $\{0\}, \{1\} \succ_1 \{0,1\}$)

- "I ranked the no learning menu highest because I thought it would award the most amount of payment if I answered correctly, compared to the pre-learning menu. I ranked decide in Period 2 last because I thought it would be distracting trying to decide whether to learn the story while I was focusing on the attention task." (S2, ID 30, $GUILT$, $GUILT$)

- "I was indifferent between pre-select learning and pre-select no learning because I actively did not want to make a choice during the focus activity. (However, I am glad that I learned the story!)" (S3, ID56, Other, Other)

- "I ranked the automatic decision for learning and the automatic decision for not learning first because I did not want to have the responsibilty of making the decision on my own. I tried to leave it up to the chance of the computer rather than my own desire. I was indifferent between learning the story and not learning the story. I did care a little about losing $2 for one of the rounds but I felt that learning the story was an even tradeoff, had I been given my second option of deciding in round 2 to hear the story." (S4, S71, Other, IND)

H Power calculations

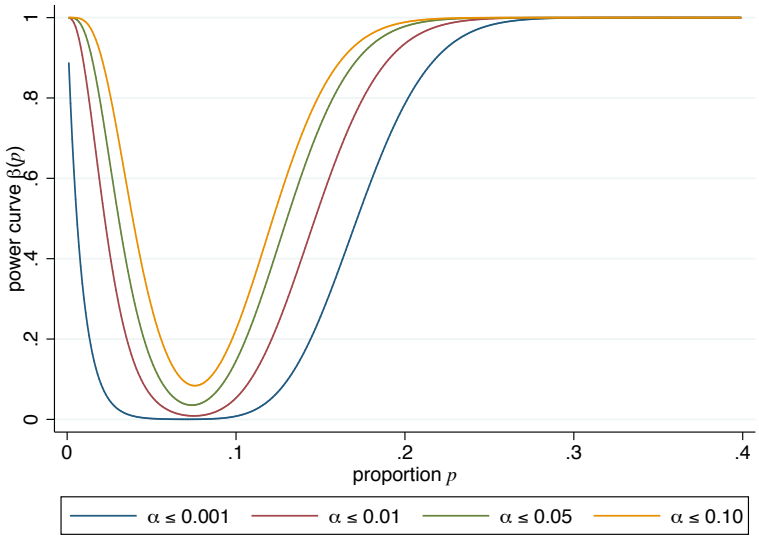
In order to evaluate the credibility of a statistically significant finding, one important factor is whether the study was statistically well-powered. In this section, I address this question, focusing on the analysis of (i) the primary data on menu preferences (H.1); (ii) the auxiliary data on beliefs about choice from $\{0,1\}$ (H.2.1), actual choices from $\{0,1\}$ (H.2.2) and productivity differences based on menu assignment (H.2.3). For each outcome, I report estimates of my study's statistical power under a wide range of assumptions about the effect size. The main purpose of these analyses is to help readers with different priors to evaluate the strength of the evidence. Additionally, the analyses may also be helpful for determining what sort of sample sizes are needed for well-powered replication analyses of my key results. At the end of this section (H.3), I explain and justify the choices that were made for the statistical analysis in order to maximize transparency.

H.1 Menu preferences

The main statistical analysis presented in the paper concerns the prevalence of SSB_{-0} subjects, interpreted as "self-control types". The objective of this analysis is to show that the relatively high proportions of SSB_{-0} subjects observed in this sample (0.36 for the classification based on $\succeq_1^{rank}$ and 0.23 for the classification based on $\succeq_1^{WTP}$) are very unlikely to be due to chance. Obviously, comparing these proportions to 0 is of very limited interest. Therefore, in the main text, I propose to compare the observed proportions to the limit proportion (i.e., for an infinitely large sample) that would be observed if a subject had picked one of the 13 possible rank orderings at random. Assuming a uniform draw of the 13 orderings, this theoretical proportion is 0.077 (1/13). Tables 1 & 3 report results from two-sided binomial tests of the null hypothesis $H_0 : p_T = \frac{1}{13}$, where p_T is the proportion of individuals of type T in the population. Figure 24 shows the power curve $\beta(p)$ for a two-sided binomial test of the null hypothesis $H_0 : p_T = \frac{1}{13}$, assuming $N = 120$ and for four different α-levels $\in \{0.001, 0.01, 0.05, 0.10\}$.

Even at the lowest α-level considered ($\alpha = 0.001$), power calculations show that this study had 80% power to reject the null assuming that the true population proportion is $p_T = 0.20$. At the conventional level $\alpha = 0.05$, there is 80% power to rule out a proportion of $\frac{1}{13}$ assuming $p_T = 0.158$, and 99% power to reject the null if $p_T = 0.212$. On the other hand, for values of p_T lower than 0.15, the study was not well-powered to statistically reject a proportion of $\frac{1}{13}$ at a significance threshold of $\alpha = 0.05$. Therefore, the study was very well powered to reject the null $H_0 : p_T = \frac{1}{13}$ assuming

Figure 24: Power curve for a two-sided binomial test assuming $H_0 : p = 0.077$ and $N = 120$



Notes: Power calculations performed using G*Power 3.1.

true values for p_T in the order of the ones observed for the SSB_{-0} ordering.[20]

H.2 Auxiliary Data

The purpose of the rest of the analysis presented in the paper is to help interpret the elicited rank orderings, and understand whether the SSB_{-0} ordering indeed reflects costly self-control, rather than random indulgence. This analysis focused on 3 elements: (i) beliefs about choice in Period 2; (ii) actual choices in Period 2; (iii) productivity differences based on menu assignment. I study each element in the next 3 paragraphs.

H.2.1 Beliefs about Period 2 behavior

In the paper, I study beliefs by looking at the proportion of subjects who expected Option 1 (i.e., reading the story) based on the incentivized guess about a similar other and based on the unincentivized guess about themselves. For the SSB_{-0} subjects, this proportion should be virtually zero if commitment decisions are due to costly self-control and not random indulgence. For the classification based on $\succeq_1^{rank}$ (based on $\succeq_1^{WTP}$), I find that 1 out of 43 (0 out of 28) SSB_{-0} subjects guessed that a similar other would read the story; the unincentivized measure (dichotomized) gives

[20] Even ruling out subjects with inconsistencies ($\succ_1, WTP = 0$) or ($\sim_1, WTP > 0$), the observed proportion of SSB_{-0} subjects is still 20.8 (25/120), which can be detected with over 90% power at the conventional level $\alpha = 0.05$.

the exact same numbers. The question is whether the observed proportions are due to chance. As Table 4 in the main text shows, there is a lot of variation in beliefs across types and the observed variation can be inferred directly from the preference orderings under reasonable conditions (i.e., *No Preference Reversals* and *Sophistication*).[21] Therefore it is unlikely that the expressed beliefs are simply noise. The next question is how to interpret 1 out of 43 relative to 0 out of 43 or say 10 out of 43. To address this point, it is useful to look at the range of values for p under the null that are not statistically distinguishable from the observed proportion. Two observations can be made. First, the null hypothesis $H_0 : p = p_0$ cannot be rejected at the conventional level $\alpha = 0.05$ against the alternative $H_1 : p > p_0$ for p_0 as small as 0.002 (one-sided binomial test, $N = 43$). Second, the null hypothesis $H_0 : p = p_0$ can be rejected against the alternative $H_1 : p < p_0$ for all values of $p_0 \geq 0.11$ (p-value = 0.042 for a one-sided binomial test with $p_0 = 0.11$, $N = 43$). In other words, the observed proportion of 1 out of 43 is statistically distinguishable from an hypothesized proportion of 5 out of 43. The 95% (binomial) confidence interval is [0.0006, 0.1229].[22] Thus, one can conclude that the amount of uncertainty expressed by SSB_{-0} subjects through their beliefs is relatively small, if not negligible.

H.2.2 Actual behavior in Period 2

In the next part of the analysis, I contrast menu preferences and beliefs about Period 2 behavior with actual behavior when facing the flexible menu: if SSB_{-0} subjects are self-control types then they should refrain from choosing Option 1 (i.e., reading the story) when facing $\{0, 1\}$. For the classification based on $\succeq_1^{rank}$ (based on $\succeq_1^{WTP}$), I find that 3.7% or 1 out of 27 (6.3% or 1 out of 16) SSB_{-0} subjects chose to read the story. Again, the question is whether these numbers are due to chance. As Figure 2 in the main text shows, there is a lot of variation in the propensity to read the story across types. While all but one SSB_{-0} subject (according to the initial ranking) chose not to read the story, 25% (15/60) of the other subjects did so ($t_{85} = 2.42$, p-value = 0.018).[23] The observed variation can be partially inferred from the preference orderings (i.e., using *No Preference*

[21] The adjusted R^2 of a regression of the incentivized guess on indicators $1_{(\{0\}\succ_1\{1\})}$, $1_{(\{1\}\succ_1\{0\})}$, $1_{(\{0,1\}\succ_1\{1\})}$ and $1_{(\{0,1\}\succ_1\{0\})}$ (the first two for *No Preference Reversals* and the last two for *Sophistication*) is 0.62. In other words, menu preferences encode a lot of information about beliefs (see Section E.1, Table 15, Panels A & B).

[22] A similar exercise can be performed for the classification based on $\succeq_1^{WTP}$. In this case, a one-sided binomial test of the null hypothesis $H_0 : p = p_0$ can be rejected against the alternative $H_1 : p < p_0$ for all values of $p_0 \geq 0.11$ (p-value = 0.038 for a one-sided binomial test with $p_0 = 0.11$, $N = 28$). In other words, the observed proportion of 0 out of 28 is statistically distinguishable from an hypothesized proportion of 3 out of 28. The 97.5% (binomial) confidence interval is [0, 0.1234].

[23] Using the WTP ranking, 21% (15/71) of the other subjects read the story; this proportion is however not significantly different from the 6% (1/16) of SSB_{-0} types who read the story (p-value = 0.085, one-sided t-test).

Reversals and *Sophistication*), although the predictive power is much lower than for beliefs.[24] Based on this evidence, it is unlikely that the near zero proportion of SSB_{-0} subjects who read the story is simply due to chance, even though the link between menu preferences and ex post choice is less tight than the link between menu preferences and beliefs.

To interpret the proportions of 1 out 27 (16) for the SSB_{-0} subjects based on $\succeq_1^{rank}$ ($\succeq_1^{WTP}$), I again look at the range of values for p under the null that are not statistically distinguishable from these observed proportions based on one-sided binomial tests. First, the null hypothesis $H_0 : p = p_0$ cannot be rejected at the conventional level $\alpha = 0.05$ against the alternative $H_1 : p > p_0$ for p_0 as small as 0.002 for $\succeq_1^{rank}$ (0.004 for $\succeq_1^{WTP}$). Second, the null hypothesis $H_0 : p = p_0$ can be rejected against the alternative $H_1 : p < p_0$ for all values of $p_0 \geq 0.17$ for $\succeq_1^{rank}$ (0.27 for $\succeq_1^{WTP}$). In other words, the observed proportion of 1 out of 27 (1 out of 16) is statistically distinguishable from an hypothesized proportion of 5 out of 27 (5 out of 16). For the classification based on $\succeq_1^{rank}$ (resp. $\succeq_1^{WTP}$), the 95% (binomial) confidence interval for the proportion of SSB_{-0} subjects who read the story is [0.0009, 0.1897] (resp. [0.0016, 0.3023]); for the other types, the respective 95% (binomial) confidence intervals are [0.1472 0.3786] and [0.1233 0.3244]. Therefore confidence intervals are clearly wider than for beliefs.

Although uncertainty cannot be ruled out, an alternative interpretation for this SSB_{-0} subject who read the story is simply noise. An examination of WTP behavior indeed shows that this subject had the lowest WTP among all SSB_{-0} subjects who exhibited a strictly positive WTP for replacing $\{1\}$ with $\{0,1\}$ (and similarly $\{0,1\}$ with $\{0\}$): while this subject only selected one row of the Multiple Price List (out of 8) in both comparisons ($\{0\}$ vs. $\{0,1\}$ and $\{0,1\}$ vs. $\{1\}$), all the other SSB_{-0} subjects with $WTP > 0$ selected at least two rows in both comparisons and nearly 90% selected at least 4 rows when comparing $\{0,1\}$ vs. $\{1\}$. Therefore, this subject could have been classified as $\{0\} \sim_1 \{0,1\} \sim_1 \{1\}$ according to the WTP classification. Furthermore, subjects who express uncertainty as to whether they will read the story tend to have a lower WTP for replacing $\{1\}$ with $\{0,1\}$ (analysis at the end of section D.1). Otherwise stated, subjects with a low WTP for avoiding $\{1\}$ tend to feel less strongly about not reading the story. Therefore, it is less surprising to see that the SSB_{-0} subject with the smallest positive WTP for replacing $\{1\}$ with $\{0,1\}$ chose to read the story during the task.

[24]The adjusted R^2 of a regression of an indicator for whether the subject read the story on indicators $1_{(\{0\}\succ_1\{1\})}$, $1_{(\{1\}\succ_1\{0\})}$, $1_{(\{0,1\}\succ_1\{1\})}$ and $1_{(\{0,1\}\succ_1\{0\})}$ (the first two for *No Preference Reversals* and the last two for *Sophistication*) is 0.19 (see Section E.1, Table 15, Panel C).

H.2.3 Productivity differences based on menu assignment

In one of the last sections of the paper, I study whether productivity differences exist depending on whether subjects were assigned the flexible menu $\{0,1\}$ or the commitment menu $\{0\}$. I consider two productivity measures: (a) likelihood of obtaining a perfect score and (b) total number of correct answers (out of 5). Since menu assignment is random only conditional on subjects' ranking of the menus and WTP, I run OLS regressions that look at the effect of being assigned $\{0,1\}$ after controlling for the probability $\mathbb{P}_m$ of receiving menu $m \in \{\{0\},\{1\},\{0,1\}\}$. The regressions also include a set γ_s of 5 sessions dummies, in order to control for any variation across sessions.[25] The table below reports regression results (also in the main text). Comparing column (3) to (2) (column (6) to (5)), one can test whether the proportion of variance explained by the predictor set $A = \{\mathbb{P}_{\{0\}}, \mathbb{P}_{\{1\}}, \gamma_s\}$, R^2_A, increases significantly when the predictor *Assigned* $\{0,1\}$ is added to the set. Letting $B = A \cup \{Assigned\,\{0,1\}\}$, I therefore study the power of the F-test of the null hypothesis $H_0 : R^2_B - R^2_A = 0$ against the alternative $H_1 : R^2_B - R^2_A > 0$.

Table 17: Effect of flexible menu on productivity

	Obtained perfect score			Number of correct answers		
	(1)	(2)	(3)	(4)	(5)	(6)
Assigned {0,1}	-0.225**		-0.194*	-0.429*		-0.392*
	(0.105)		(0.107)	(0.228)		(0.235)
$\mathbb{P}_{\{0\}}$		1.419**	1.260**		2.140*	1.818
		(0.551)	(0.553)		(1.212)	(1.218)
$\mathbb{P}_{\{0,1\}}$		0.975	1.049*		1.539	1.689
		(0.629)	(0.624)		(1.383)	(1.375)
Session FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	116	116	116	116	116	116
R-squared	0.0785	0.0949	0.1221	0.1290	0.1258	0.1479
Mean dependent variable	0.37	0.37	0.37	3.93	3.93	3.93

Notes: Columns (1)-(3) are linear probability models where the dependent variable *Obtained perfect score* is equal to 1 if the subject correctly answered all 5 prompts; probit models give almost identical results. The variable $\mathbb{P}_m$ is the subject's probability of receiving menu $m \in \{\{0\},\{0,1\},\{1\}\}$ given his/her rank ordering and WTP. * and ** refer to $p < 0.1$ and < 0.05.

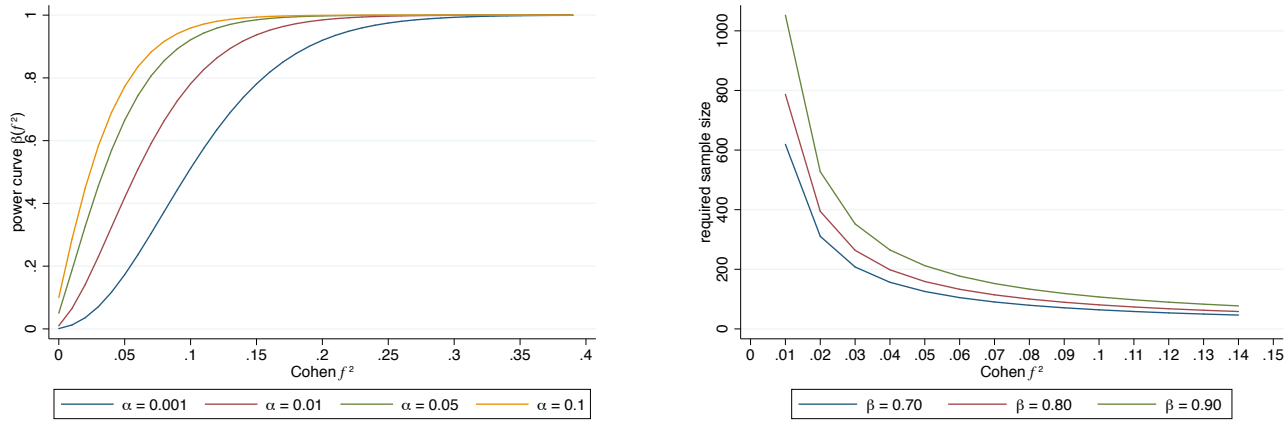
[25] See H.3 for a justification of the econometric model. Without controlling for session FE, the coefficient on *Assigned* $\{0,1\}$ fails marginal significance for both productivity measures: for *Obtained perfect score*, $\beta = -0.169$, sd $= 0.103$, $p = 0.104$; for *Number of correct answers*, $\beta = -0.336$, sd $= 0.236$, $p = 0.157$).

To obtain a measure of effect size, I look at Cohen's $f^2 = \frac{R^2_B - R^2_A}{1-R^2_B}$. Conventional values for the effect size are *small* for $f^2 = 0.02$, *medium* for $f^2 = 0.15$ and *large* for $f^2 = 0.35$. As can be seen by comparing the R^2 of (3) vs. (2) and (6) vs. (5), the observed effect sizes are small (i.e., about 0.03 for *Obtained perfect score* and 0.025 for *Number of correct answers*). Figure 25 Panel (a) shows the power curve $\beta(f^2)$ for an F-test of the null hypothesis $H_0 : R^2_B - R^2_A = 0$ assuming $N = 116$ and $k = 8$ (number of predictors), and for four different α-levels $\in \{0.001, 0.01, 0.05, 0.10\}$. At the conventional significance threshold $\alpha = 0.05$, the effect size would have to be $f^2 \geq 0.07$ in order to achieve 80% power; for smaller effect sizes in the order of $0.02 - 0.03$, power is quite low (around 40%). Another way to look at the problem is to ask how large the sample size would have to be in order to be able to detect a small effect size, assuming $\alpha = 0.05$. Panel (b) shows the required sample size at various effect sizes and levels of power. The sample size would have to be between 250 and 300 in order to have 80% power to detect an effect size in the range $0.02 - 0.03$ (for instance $N = 263$ for $f^2 = 0.03$). Therefore, if the prior is that differences in productivity based on menu assignment should be very small, then the present study was not well powered to detect such small differences; on the other hand, it was well-powered to detect small to medium differences.

Figure 25: Power and required sample size for the regression framework of Table 2

(a) Power as a function of effect size

(b) Required sample size as a function of effect size



Notes: Power calculations based on an F-test from a multiple linear regression (fixed model, R^2 increase) with $k = 8$ regressors; calculations performed with G*Power 3.1. Panel (a) shows the power of the test as a function of the effect size f^2 assuming $N = 116$ and for different values of α; Panel (b) shows the minimum sample required as a function of the effect size assming $\alpha = 0.05$ and for different values of β.

H.3 Final remarks on the statistical analysis

In an effort to ensure maximal transparency, below I explain and justify various decisions regarding the data analysis. Because the binomial test gives exact p-values and is particularly suitable for small samples, I use this test whenever I compare an observed proportion to some theoretical value. In the comparison of two proportions, I use t-tests, one-sided when there is a directional hypothesis, and two-sided otherwise; the two-proportion z-test (which uses large-sample statistics) and the non-parametric Wilcoxon rank-sum test give nearly identical p-values. To test the relationship between two nominal variables in 2×2 contingency tables, I perform χ^2-tests when each cell contains over 5 observations; otherwise, I use Fisher's exact test. Section 4.3 of the main text reports the 95% confidence intervals of several correlation coefficients; calculations are based on Fisher's transformation. Using bootstrap standard errors to compute the confidence intervals yields very similar results. For the regression analysis of dichotomic variables, I present the results from linear probability models due to their ease of interpretation; however, probit models give almost identical results. All regressions include session fixed effects in order to control for any differences in the progress of the session (e.g., subjects asking questions during the instructions), the number of subjects per session (which affected the probability of having one's story selected), and the slight difference in Session 1 regarding what subjects knew about the task duration (exactly 60 minutes versus up to 60 minutes). Although the inclusion of session fixed effects improves precision of the estimates in some of the analyses (e.g., see discussion in C.3.1 and H.2.3), this is not always the case (e.g., see C.3.3). Except for Table 11 in OA-D1, regressions without the session FE are not presented in this appendix in order to save space, but are available upon request.

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