BEHAVIORAL ECONOMICS · LECTURE 16

Temptation and self-control

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Master Economics – Winter 2026/27

Before we start: a show of hands

Raise your hand if, in the last month, you have...

1. . . . planned to study (or run, or go to bed early) and then **did not**?
2. . . . done something to **limit your own options**: an app blocker, the alarm clock on the other side of the room, no chocolate at home, a deadline you asked someone to set?
3. . . . **paid** for one of these restrictions (a gym membership, a pre-paid class)?

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Remember the snack in Lecture 1

The **left** half of the room chose for **next week**, the **right** half for **right now**.

Which half chose more chocolate?

Learning objectives

By the end of this lecture you should be able to:

- Give examples of **temptation and self-control** problems and their scale.
- Discuss the evidence linking self-control to **socioeconomic outcomes**, and its limits (marshmallow test, causality).
- Explain why the **standard model** has no room for temptation.
- Compare three ways of **detecting** a self-control problem in data.
- Name the two approaches studied in the next lectures: **preference for commitment** and **time inconsistency**.

Roadmap

A ubiquitous problem

Socioeconomics of temptation

Why the standard model cannot capture it

Where we are in the course

The assumptions of the Robinson model

0. **Consistent preferences:** Robinson's choices can be described by a utility function u
1. **Costless optimization:** he always finds the option that maximizes u
2. **Correct beliefs & expected utility:** he knows p and maximizes expected utility
3. **Absolute, self-regarding consumption:** only his own (b, y) enters u
4. **Stable tastes:** the same u in both periods

Part 5 relaxes **Assumption 4**. Robinson's tastes need not change, but period-1 Robinson can **disagree** with what period-2 Robinson will choose. Today: why this matters, and why the standard model cannot capture it.

1

A ubiquitous problem

Overeating, smoking, drugs, debt, undersaving: self-control problems seem to be everywhere.

Problems seem to be everywhere

Facts

- Western people are overweight, and getting more so.

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- 76% of Americans say they wish they saved more.

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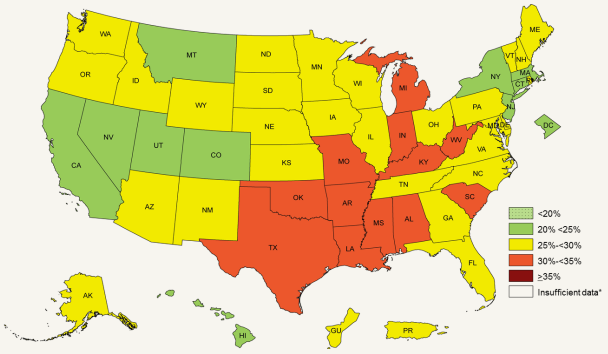
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Common pattern: a small pleasure now, a larger cost later.

Obesity in the United States, 2011–2018

Prevalence¶ of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2011

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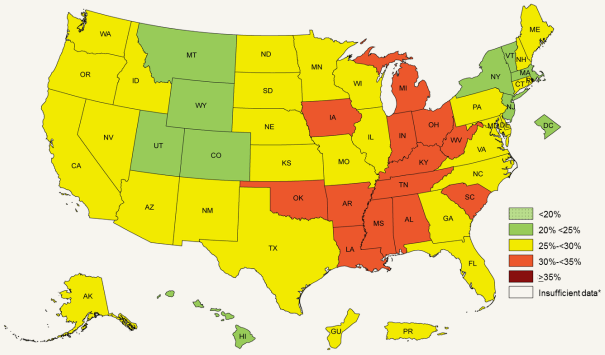


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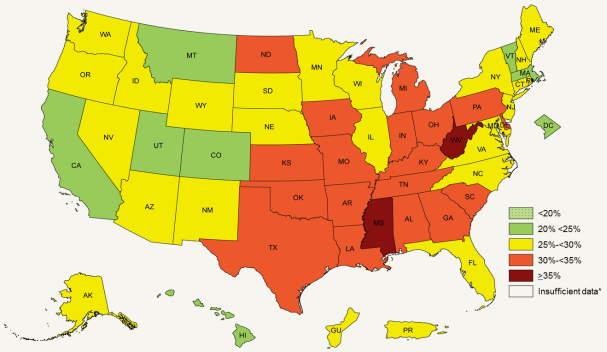


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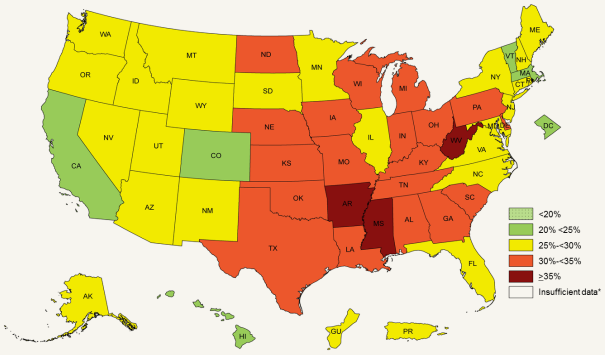


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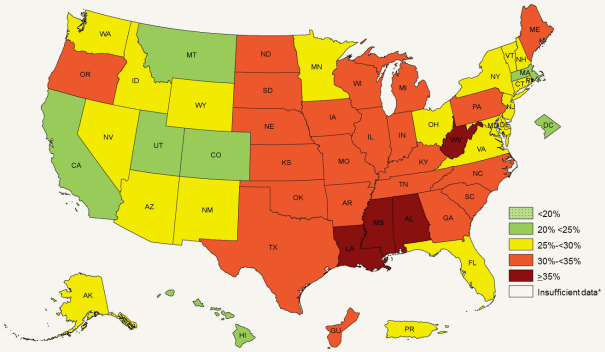


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Obesity in the United States, 2011–2018

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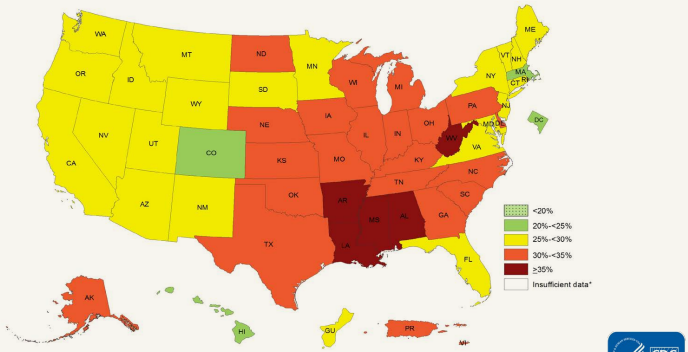


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Obesity in the United States, 2011–2018

Prevalence¶ of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2016

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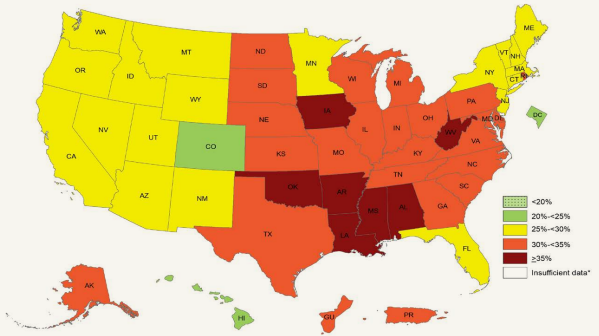


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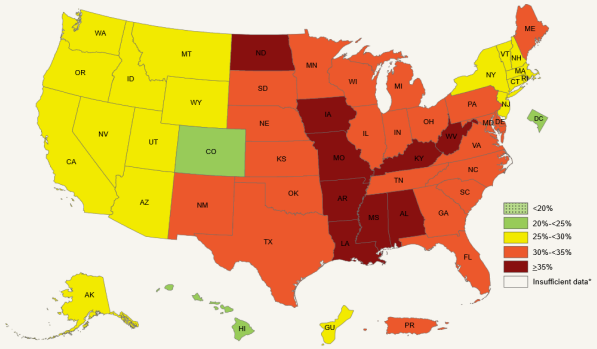


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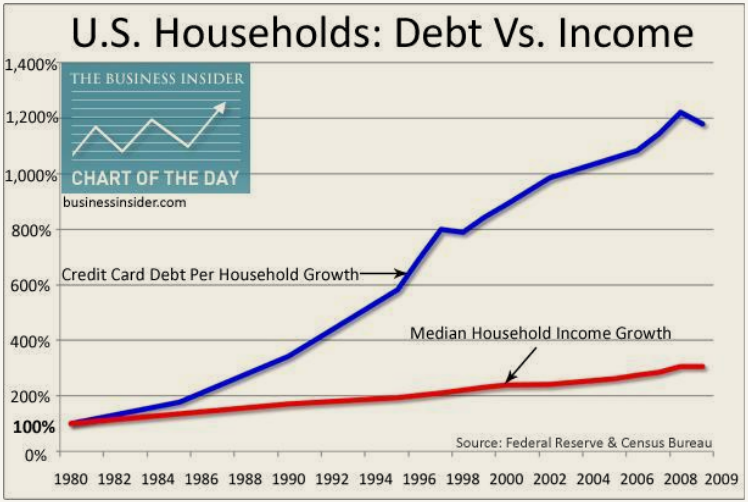
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Household debt vs. income

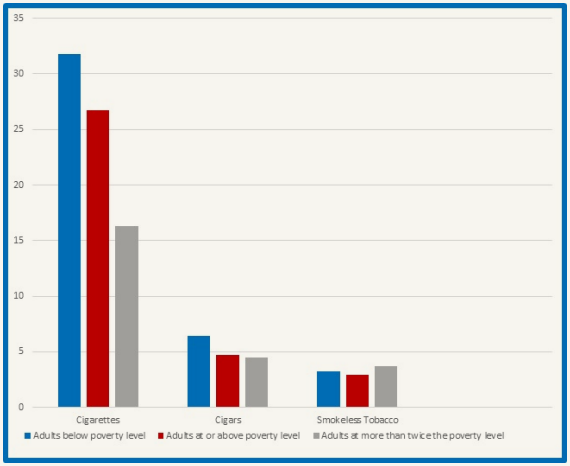


2

Socioeconomics of temptation

Self-control is correlated with income, health and crime; but which way does causality run?

Smoking and income



Reading the chart

Share of adults using each product (%), by income:

- blue: below the poverty line,
- red: at or above it,
- grey: above twice the poverty line.

Cigarette use is about **twice as high** among the poor.

Delay of gratification: the marshmallow test

Classic experiment

Mischel et al. (1972):

- A child is given **one** marshmallow and a choice: **eat it now**, or **wait** and get **two** later.
- The child is left alone for several minutes, and observed.
- Measures the ability to **delay gratification** (wait for a bigger reward).

What we see

- Children use strategies to resist: looking away, distracting themselves...
- Early follow-ups: children who waited longer did better later in life.

Video

`https://www.youtube.com/watch?v=4L-n8Z7G0ic`

Childhood self-control and adult outcomes

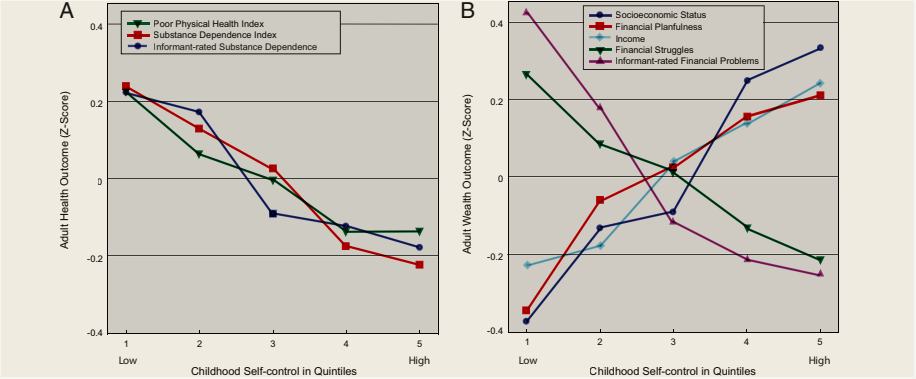
The study

"A gradient of childhood self-control predicts health, wealth, and public safety" (Moffitt et al., 2011)

Design

- 1,037 children born in Dunedin, New Zealand, followed until age 32.
- Self-control measured in childhood by
  - self-reports,
  - observations by researchers,
  - reports by teachers and parents,
- combined into a **single factor**; outcomes compared across its quintiles.

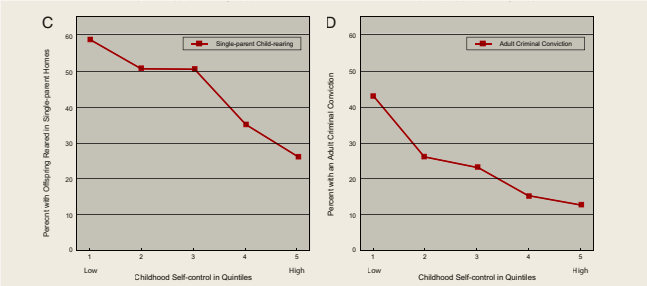
Childhood self-control and adult outcomes (2)



Reading the figure

Adult outcomes by quintile of childhood self-control (low $\rightarrow$ high). Left: health (physical health, substance dependence). Right: wealth (socioeconomic status, income, financial problems).

Childhood self-control and adult outcomes (3)



ɟ. 2. Self-control gradient. Children with low self-control had poorer health (*A*), more wealth problems (*B*), more single-parent child rearing (*C*), and more minal convictions (*D*) than those with high self-control.

Reading the figure

Left: share raising a child as a single parent. Right: share with a criminal conviction.

A clear **gradient**: low childhood self-control goes with worse health, wealth and crime. But this is a **correlation**.

The marshmallow test today

Its conclusions are now seriously questioned

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- **Strategy, not trait:** it may measure coping tactics rather than a fixed ability.
- **External validity:** cultural norms and the artificial task limit generalization.

Self-control and poverty: which way does causality run?

What is the causal link between **socioeconomic status** and **self-control**?

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Channel 1

Do self-control problems lead to worse outcomes?

Proverbs 21:17

“Whoever loves pleasure will become poor; whoever loves wine and olive oil will never be rich.”

Self-control and poverty: which way does causality run?

What is the causal link between **socioeconomic status** and **self-control**?

Channel 1

Do self-control problems lead to worse outcomes?

Channel 2

Or do worse outcomes make self-control harder?

Proverbs 21:17

"Whoever loves pleasure will become poor; whoever loves wine and olive oil will never be rich."

Proverbs 31:7

"Let them drink to forget their poverty and remember their troubles no more."

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A recent literature studies the second channel

- poverty $\rightarrow$ fewer cognitive resources;
- fewer cognitive resources $\rightarrow$ less self-control.

Poverty consumes cognitive resources (Mani et al., 2013)

Hypothesis

Managing life in poverty takes cognitive effort (monitoring every expense, stress), leaving fewer resources for other tasks.

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Results

- Farmers perform **worse before** payment, when money is tight.
- The effect is not explained by time constraints, work effort or nutrition.

Within-person design: same farmer, poorer vs. richer. Poverty itself seems to tax the mind.

Cognitive load and self-control (Shiv and Fedorikhin, 1999)

Procedure

Room 1: memorize a number and report it in Room 2. **On the way:** choose a snack, **chocolate cake** (tempting) or **fruit salad** (healthy).

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2×2 design:

Cognitive load

- Low: a **2-digit** number
- High: a **7-digit** number

Presentation of the snacks

- **Real** snacks on a cart
- **Symbolic**: photos only

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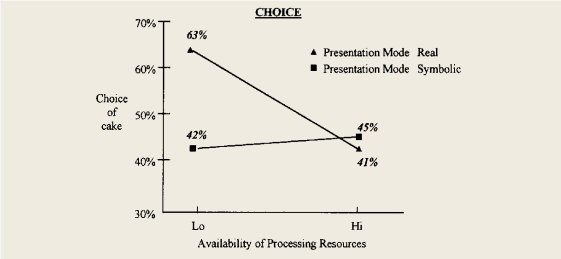
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Question: does the share choosing cake depend on load and presentation?

Cognitive load and self-control: results



Share choosing cake

	High load (7 digits)	Low load (2 digits)
Real snacks	63%	41%
Photos	42%	45%

Load matters **only when the temptation is real**: with less cognitive capacity, the “hot” option wins more often.

Recap: the evidence so far

What we have seen

- Self-control problems seem **widespread**: food, tobacco, drugs, debt, saving.
- They are **correlated** with socioeconomic outcomes (smoking by income; Dunedin cohort).
- The **direction** of causality is unclear; poverty and cognitive load may *reduce* self-control.
- The flagship evidence (marshmallow test) is more fragile than once thought.

Plenty of suggestive evidence. What we lack is a **model**: what exactly *is* a self-control problem?

3

Why the standard model cannot capture it

One utility function and exponential discounting leave no room for conflict; and judgments or words are poor evidence of it.

The standard model has no room for temptation

One utility function

- In the standard model, the decision maker maximizes **one** utility function.
- So there is no sense in which she...
  - ...chooses a **burger** but wishes she had chosen a **salad**;
  - ...exerts **self-control** when choosing a salad over a tempting burger.

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Time consistency

She is **time-consistent**: her date-t self agrees with her date-$(t+1)$ self. Robinson in period 1 approves of what Robinson does in period 2.

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Temptation needs a *conflict*: between two utility functions, or between two dates.

Worked example: why the snack choice is a puzzle

Read & van Leeuwen

A snack consumed at date T, chosen either **at** T or **one week before**.

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Standard model

Tastes u are stable, utility T periods ahead is discounted by δ^T, $0 < \delta \leq 1$.

- Chosen **today** for today: chocolate iff $u(c) > u(f)$.
- Chosen **a week ahead**: chocolate iff $\delta^7 u(c) > \delta^7 u(f) \iff u(c) > u(f)$.

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The **same** person makes the **same** choice at both dates. But:

The data

	chosen a week ahead	chosen today
Fruit	74%	30%
Chocolate	26%	70%

How do we spot a self-control problem? (1)

1. We see people doing something “naughty”

We identify self-control problems with activities: smoking, drugs, undersaving, poor performance in a Stroop task, letting go of a hand grip. . .

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Problem

"There is no rational reason to take drugs, so drug users must lack self-control".

- This goes against standard economic methodology: *de gustibus non est disputandum*.
- Very **paternalistic**: perhaps for some smokers the benefit exceeds the long-run cost.
- Should someone with a week to live really not take heroin?

How do we spot a self-control problem? (2)

2. People tell us they want one thing, then do another

E.g. they say they want to quit smoking, and then carry on smoking.

How do we spot a self-control problem? (2)

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Hard to interpret

Why should we trust what people **say** over what they **do**?

- Economists know how to use choice data; self-reports are harder to discipline.
- If someone says she prefers a but chooses b, **revealed preference** says: she prefers b.

Talk is cheap.

How do we spot a self-control problem? (3)

3. People change their mind

- They repeatedly quit smoking, then restart.
- They take drugs when young but not when older.
- They smoke when drunk, but not when sober.

How do we spot a self-control problem? (3)

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Problem

- Hard to distinguish **temptation** from **changing tastes** (Assumption 4 in its strong form).
- Maybe drinking and smoking are simply **complements**.

None of the three is fully convincing: we need evidence based on **choices**, not judgments or words.

Two choice-based approaches

1. Preference for commitment

- People **pay** to remove options from their future choice set.
- Robinson pre-pays the yoga class, avoids Friday.
- Lecture 17: menus, Gul and Pesendorfer (2001).

2. Time inconsistency

- Choices **reverse** as the date of consumption gets closer.
- Read & van Leeuwen: fruit a week ahead, chocolate today.
- Lecture 18: discounting, β–δ model.

Both use **choices only**, so talk is no longer cheap. Lecture 19: how they fit the data, and how they are linked.

Recap

The evidence

- Temptation and self-control problems seem **ubiquitous** and are **correlated** with poverty and poor outcomes.
- Causality may run both ways; the marshmallow evidence is **fragile**.

The theory

- The standard model (one u, exponential discounting) is **time-consistent**: it has no room for temptation.
- Judgments (“naughty” acts), words, and changes of mind are poor evidence.

Two **choice-based** signatures: **commitment** and **preference reversals**.

Exercises

Exercises 1–2

1. **(Easy)** Using the Shiv and Fedorikhin (1999) numbers, compute the effect of high load on the share choosing cake, separately for real snacks and photos. Compute the difference in differences and interpret it.
2. **(Intermediate)** Robinson consumes a snack at date T and chooses it at date $t \leq T$. His utility at t is $D(T-t)\,u(x)$ for a discount function $D > 0$. Show that the choice cannot depend on t. Which assumption must be dropped to explain Read & van Leeuwen?

Exercises 3–4

3. **(Intermediate)** Design a study that could tell apart "self-control problems cause poverty" from "poverty causes self-control problems". What source of exogenous variation would you use?
4. **(Discussion)** Is smoking evidence of a self-control problem? Which of the three detection methods would you use, and what data would convince you?

Final take-aways

1. Temptation problems are **widespread** and **correlated** with economic outcomes, but causality is unclear.
2. The standard model is **time-consistent**: one utility function, no conflict, no temptation.
3. Detecting self-control problems from behavior requires care: words and “bad” choices are not enough.
4. Two **choice-based** approaches: **preference for commitment** (Lecture 17) and **time inconsistency** (Lecture 18).

References I

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