A Template for Academic Presentations

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Name of the Inviting Institution/Seminar Series

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Outline

Introduction

Introduction 1

Background

- Temporal discounting is key concept in economics.
- Normative model: exponential discounting. However, observed decisions are hard to explain (e.g., Dohmen et al., 2012).
- One alternative: the “focusing model” by Kőszegi and Szeidl (2013).

Research Question

- The composition of latex and of typical rubbers is given below.
- Is it true that trees are regularly tapped and the coagulated latex which exudes is collected and worked up into rubber?

Introduction 2

Preview of the Results

- There is no feasible method at present known of preventing the inclusion of the resin of the latex with the rubber during coagulation.

$\Rightarrow$ Although the separation of the resin from the solid caoutchouc by means of solvents is possible, it is not practicable or profitable commercially.

Study Design

Study Design 1: Design of the Study

Great Minds Discuss Ideas.
Average Minds Discuss Events.
Small Minds Discuss People.
—https://quoteinvestigator.com/2014/11/18/great-minds/

- The latex of the best rubber plants furnishes from 20% to 50% of rubber.
- As the removal of the impurities of the latex is one of the essential points to be aimed at, it was thought that the use of a centrifugal machine to separate the caoutchouc as a cream from the watery part of the latex would prove to be a satisfactory process.

Study Design 2: Design of the Study

The watery portion of the latex soaks into the trunk, and the soft spongy rubber which remains is kneaded and pressed into lumps or balls:

$\mathrm{BAL}^{\mathrm{I}}_{1:1}$, $\mathrm{BAL}^{\mathrm{II}}_{1:1}$: Each payment transferred on single day.

$\mathrm{UNBAL}^{\mathrm{I}}_{1:n}$: Earlier payoff concentrated, while later payoff dispersed over $n = 2$, 4, or 8 dates.

$\mathrm{UNBAL}^{\mathrm{II}}_{n:1}$: Earlier payoff dispersed over $n = 2$, 4, or 8 dates, while later payoff concentrated.

Study Design 3: Control Experiment

- Control for alternative explanations.
- Many of the example sentences were taken from http://sentence.yourdictionary.com/latex.

Study Design 4: An Example `enumerate` List

1. First item in a list
    a. First item in a list
        i. First item in a list
        ii. Second item in a list
        iii. Third item in a list
        iv. Fourth item in a list
    b. Second item in a list
    c. Third item in a list
    d. Fourth item in a list
2. Second item in a list
3. Third item in a list
4. Fourth item in a list

Study Design 5: An Example `itemize` List

- First item in a list
  - First item in a list
    - First item in a list
    - Second item in a list
    - Third item in a list
    - Fourth item in a list
  - Second item in a list
  - Third item in a list
  - Fourth item in a list
- Second item in a list
- Third item in a list
- Fourth item in a list

Study Design 6: Some Example Text

Let's include some Greek letters: α, β

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. $\sin^2(\alpha) + \cos^2(\beta) = 1$. If you read this text, you will get no information $E = mc^2$. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. $\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{ab}$. This text should contain all letters of the alphabet and it should be written in of the original language. $\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$. There is no need for special content, but the length of words should match the language. $a\sqrt[n]{b} = \sqrt[n]{a^n b}$.

Study Design 7: Some Example Formulas

Let's include some additional Greek letters: γ, ϕ

$$p(R,\phi) \sim \int_{-\infty}^{\infty} \frac{\tilde{W}_n(\gamma)\exp\left[\imath R/a\left(\sqrt{k^2a^2-\gamma^2}\cos\phi\right)\right]}{(k^2a^2-\gamma^2)^{3/4} H'^{(1)}_n\left(\sqrt{k^2a^2-\gamma^2}\right)} \mathrm{d}\gamma$$

Let's also include some upright Latin letters: d, e

$$\int_a^b f(x)\,\mathrm{d}x = F(b) - F(a)$$

Study Design 8: Additional Example Formulas (with upright π)

Only variables are set in italics according to ISO style—hence, we use upright "d," "e," and "π" (`\mathup{d}`, `\mathup{e}`, and `\mathup{\pi}`, respectively).

Theorem (Simplest form of the *Central Limit Theorem*)

Let $X_1, X_2, \cdots$ be a sequence of i.i.d. random variables with mean 0 and variance 1 on a probability space $(\Omega, \mathscr{F}, \mathbb{P})$. Then

$$\mathbb{P}\left(\frac{X_1 + \cdots + X_n}{\sqrt{n}} \le y\right) \to \mathfrak{N}(y) := \int_{-\infty}^{y} \frac{\mathrm{e}^{-v^2/2}}{\sqrt{2\mathrm{\pi}}}\,\mathrm{d}v \quad \text{as} \quad n \to \infty,$$

or, equivalently, letting $S_n := \sum_1^n X_k$,

$$\mathbb{E}f\left(S_n/\sqrt{n}\right) \to \int_{-\infty}^{\infty} f(v)\,\frac{\mathrm{e}^{-v^2/2}}{\sqrt{2\mathrm{\pi}}}\,\mathrm{d}v \quad \text{as } n \to \infty, \text{ for every } f \in \mathrm{b}\mathscr{C}(\mathbb{R}).$$

Results

Results 1: Overview

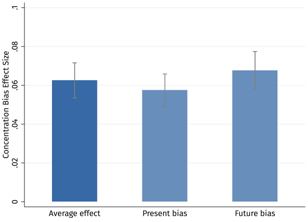
1. As a secondary function we may recognize the power of closing wounds, which results from the rapid coagulation of exuded latex in contact with the air:
   a. In some cases (Allium, Convolvulaceae, etc.) rows of cells with latex-like contents occur.
   b. However, the walls separating the individual cells do not break down.
2. The rows of cells from which the laticiferous vessels are formed can be distinguished (6.3 p.p. vs. 2.6 p.p.; $p < 0.01$).

Results 2: Our Main Results

The charts are taken from Dertwinkel-Kalt et al. (2017).

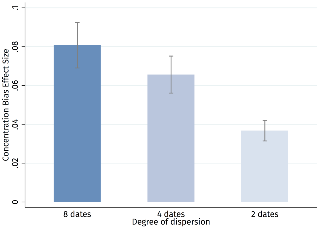
(A) Difference between treatment and control condition.
(B) Heterogeneity.

A **Result 1**



$\mathrm{BAL}^{\mathrm{I}}_{1:1} - \mathrm{UNBAL}^{\mathrm{I}}_{1:\bullet}$

B **Result 2**

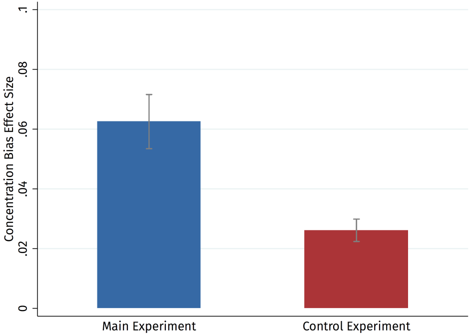


$\mathrm{UNBAL}^{\mathrm{II}}_{\bullet:1} - \mathrm{BAL}^{\mathrm{II}}_{1:1}$

Results 3: Main vs. Control Experiment

Rule out some alternative explanations.

Result 3



Discussion

Discussion 1

- The latex exhibits a neutral, acid, or alkaline reaction, depending on the plant from which it was obtained.
- The latex is therefore usually allowed to coagulate on the tree (Kőszegi and Szeidl, 2013).
  - ⇒ The latex, which is usually coagulated by standing or by heating, is obtained from incisions.
- See also Bordalo, Gennaioli, and Shleifer (2013).

Discussion 2: Conclusion

- When exposed to air, the latex gradually undergoes putrefactive changes accompanied by coagulation.
- The addition of a small quantity of ammonia or of formalin to some latices has the effect of preserving them.
- There is, however, reason to believe the following.
- The coagulation of latex into rubber is not mainly of this character.

Discussion 3: An Automated Animation

The automated transition to the next slide (= page in the PDF document) only works in full-screen mode.

- The feature is available in Adobe Acrobat and Acrobat Reader.
- Unfortunately, it is (currently, January 6, 2019) not available in macOS Preview, Skim, and SumatraPDF.

Figure: Step 1—Angle: 30.0°

Discussion 3: An Automated Animation

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Figure: Step 2—Angle: 60.0°

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Figure: Step 3—Angle: 90.0°

Discussion 3: An Automated Animation

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Figure: Step 4—Angle: 120.0°

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Figure: Step 5—Angle: 150.0°

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Figure: Step 6—Angle: 180.0°

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Figure: Step 7—Angle: 210.0°

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Figure: Step 8—Angle: 240.0°

Discussion 3: An Automated Animation

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Figure: Step 9—Angle: 270.0°

Discussion 3: An Automated Animation

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Figure: Step 10—Angle: 300.0°

Discussion 3: An Automated Animation

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Figure: Step 11—Angle: 330.0°

Discussion 3: An Automated Animation

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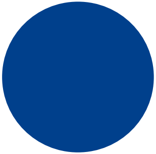

Figure: Step 12—Angle: 360.0°

◂ Back to the start

References

References

Bordalo, Pedro, Nicola Gennaioli, and Andrei Shleifer. 2013. “Salience and Consumer Choice.” *Journal of Political Economy*, 121(5): 803–843. DOI: 10.1086/673885.

Dertwinkel-Kalt, Markus, Holger Gerhardt, Gerhard Riener, Frederik Schwerter, and Louis Strang. 2017. “Concentration Bias in Intertemporal Choice.” University of Bonn et al., working paper, Bonn, Germany, et al. URL: https://www.dropbox.com/s/dv20mcu0qkygmjz/Concentration_Bias_in_Intertemporal_Choice.pdf.

Dohmen, Thomas, Armin Falk, David Huffman, and Uwe Sunde. 2012. “Interpreting Time Horizon Effects in Inter-Temporal Choice.” Maastricht University et al., IZA Discussion Paper 6385. URL: http://ftp.iza.org/dp6385.pdf.

Kőszegi, Botond, and Adam Szeidl. 2013. “A Model of Focusing in Economic Choice.” *Quarterly Journal of Economics*, 128(1): 53–104. DOI: 10.1093/qje/qjs049.

Appendix

Backup Slides

Appendix: Modeling Concentration Bias

Subjects consider a sequences of consequences $\boldsymbol{c}$ from choice set $\boldsymbol{C}$.

- **Standard discounted utility:** Suppose that the instantaneous utility function u satisfies $u' > 0$ and $u'' \leq 0$, and that earlier consequences are preferred over later consequences of the same magnitude, i.e., $D(t) \leq 1$:

  $U(\boldsymbol{c}) := \sum_{t=1}^{T} D(t)\, u(c_t)$, where, e.g., $D(t) = \delta^t$ or $D(t) = \frac{1}{1+kt}$.

- **Focusing model (Kőszegi and Szeidl, 2013):**

  $\tilde{U}(\boldsymbol{c}, \boldsymbol{C}) := \sum_{t=1}^{T} g_t\, D(t)\, u(c_t)$, where

  $g_t \equiv g[\max_{\boldsymbol{c}' \in \boldsymbol{C}} u(c_t') - \min_{\boldsymbol{c}' \in \boldsymbol{C}} u(c_t')]$

  - Weighting function $g[\cdot]$ increases in difference of maximum and minimum possible utility at a point in time.
  - Subjects overweight intertemporal consequences with a greater range.