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## A Template for Academic Presentations

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**Name of the Inviting Institution/Seminar Series**

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## Outline

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- 1 Introduction
  - 2 Study Design
  - 3 Results
  - 4 Discussion
  - 5 References
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## Introduction

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## Introduction 1

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- Temporal discounting is key concept in economics.
  - Normative model: exponential discounting, but observed decisions are hard to explain (e.g., Dohmen et al., 2012).
  - The composition of latex and of typical rubbers is given below.
  - The trees are regularly tapped and the coagulated latex which exudes is collected and worked up into rubber (Kőszegi and Szeidl, 2013).
  - There is no feasible method at present known of preventing the inclusion of the resin of the latex with the rubber during coagulation.
- ⇒ Although the separation of the resin from the solid caoutchouc by means of solvents is possible, it is not practicable or profitable commercially.

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## **Study Design**

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## Study Design 1: Design of the Study

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*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

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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:

$BAL_{1:1}^I$ ,  $BAL_{1:1}^II$ : Each payment transferred on single day.

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

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

## Study Design 3: Control Experiment

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



## Study Design 4: An Example enumerate List

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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

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- 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

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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

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

$$\int_a^b f(x) dx = F(b) - F(a)$$

## Study Design 8: Additional Example Formulas

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

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

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

$$\mathbb{P}\left(\frac{X_1 + \dots + X_n}{\sqrt{n}} \leq y\right) \rightarrow \mathfrak{N}(y) := \int_{-\infty}^y \frac{e^{-v^2/2}}{\sqrt{2\pi}} dv \quad \text{as } n \rightarrow \infty,$$

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

$$\mathbb{E}f\left(S_n/\sqrt{n}\right) \rightarrow \int_{-\infty}^{\infty} f(v) \frac{e^{-v^2/2}}{\sqrt{2\pi}} dv \quad \text{as } n \rightarrow \infty, \text{ for every } f \in \mathcal{BC}(\mathbb{R}).$$

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## Results

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## Results 1: Overview

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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

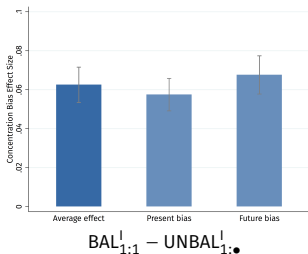
The charts are taken from Dertwinkel-Kalt et al. (2017).

(A) Difference between treatment and control condition.

(B) Heterogeneity.

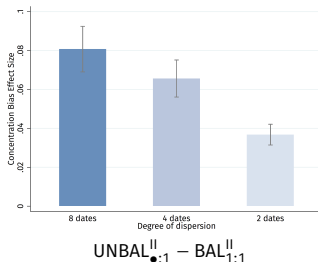
**A**

**Result 1**



**B**

**Result 2**



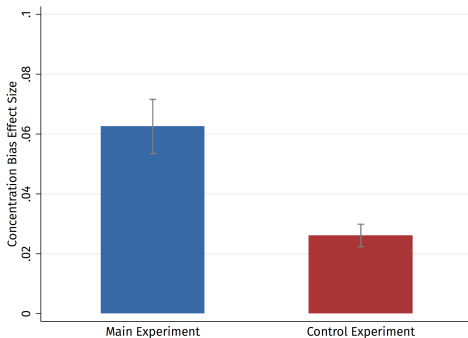


## Results 3: Main vs. Control Experiment

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Rule out some alternative explanations.

### Result 3



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## Discussion

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## Discussion 1

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- 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

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- 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

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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 1, 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°

## Discussion 3: An Automated Animation

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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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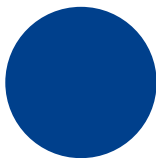
**Figure:** Step 11—Angle: 330.0°

## Discussion 3: An Automated Animation

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**Figure:** Step 12—Angle: 360.0°



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## References

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## References

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## **Appendix**

### Backup Slides

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## Appendix: Modeling Concentration Bias

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

- **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.,  $D(t) \leq 1$ :

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

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

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

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

- 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.