

Replication: Do We Snooze If We Can't Lose? Modelling Risk with Incentives in Habituation User Studies



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Research Goals

We **replicate** a previous study by Bravo-Lillo et al. on warning dialogs and **extend the design by adding risk modeling with monetary incentives**. We

partly confirm previous results,

show that the **amount of money** gained per correct decision **influences compliance rates,**

show that **a bad experience** (i.e. losing accumulated money) **shapes subsequent behavior** for a short time.

Thus, we contribute to improving study methodology for risk modeling where simulating actual data loss would not be ethical.

Study Design

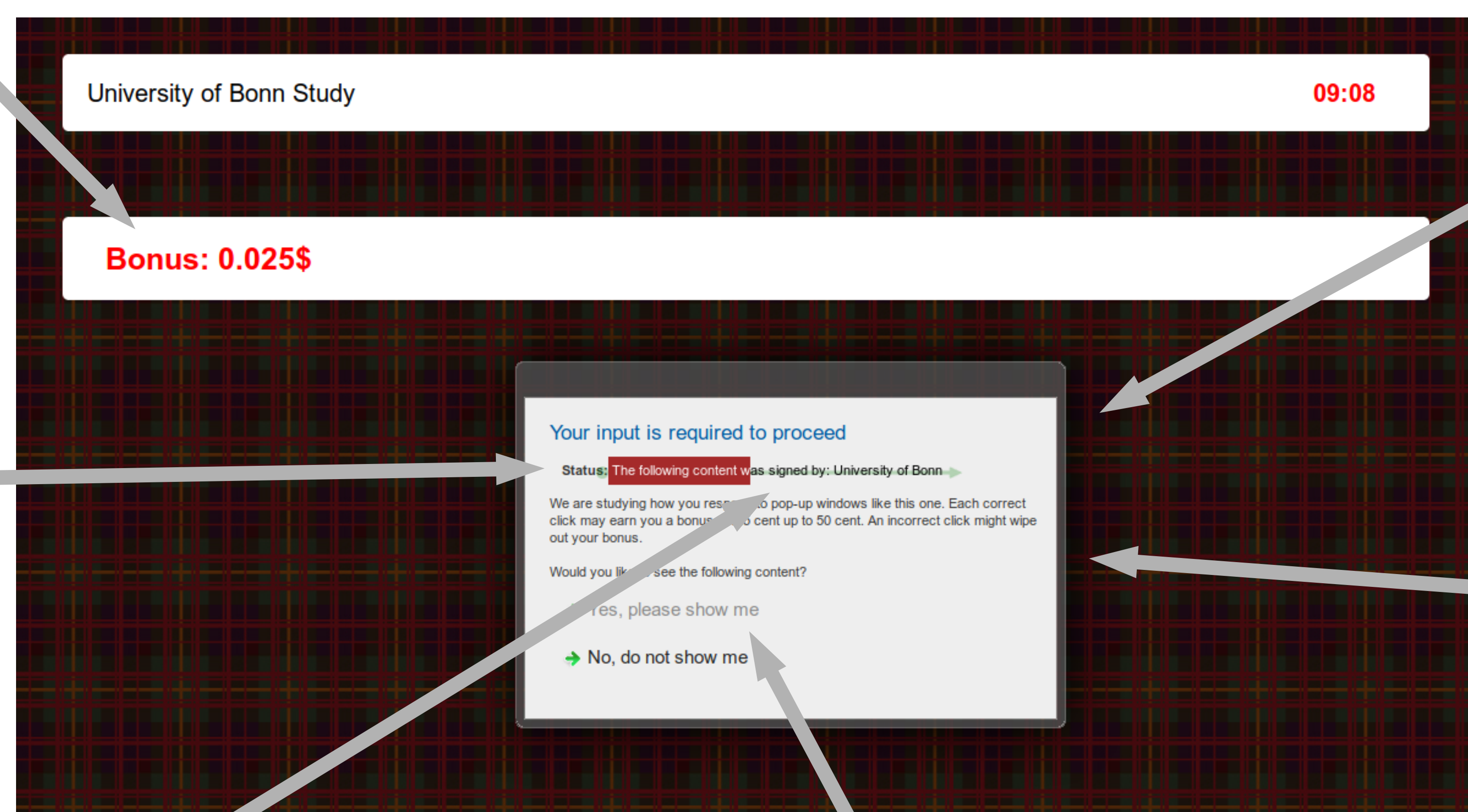
Between-subjects Mturk study with n=1236.

Regardless of performance, all participants had access to the subsequent bonus collection task. Total pay: **\$0.50 for the study and \$0.50 bonus**. Payment of the original study was \$1.

Bonus increase per dialog (none, 2.5 Cents or 10 Cents per correct decision), up to 50 Cents. Control group received no bonus.

Attractor, the interaction gateway (none, swipe movement with cursor). Yes-option is activated after completing attractor interaction.

Task: accept content signed by "University of Bonn", reject all others



After a decision, either an inspirational quote or a message saying "you chose not to view the message" appeared.

Habituation Period, the number of same-decision dialogs to answer before the task changes (1, 3, 20)

A **click on "Yes"** led to either bonus gain or loss of total bonus. The **No-option is always safe** and does not alter the bonus.

Results

Habituation of 3, and 20 dialogs **significantly increase ratio of compliant clicks.**

Offering a **bonus** per correct click **increases compliance significantly.**

Swipe attractor significantly increases compliance, this confirms previous results by Bravo-Lillo et al.

Amount of collected **bonus at first loss** significantly correlates with **increased compliance** in subsequent decisions.

Conclusion and Future Work

Monetary incentives look like an effective and promising approach for modeling risk in warning studies.

Future work regarding the exact modeling of monetary incentives for security risks is still needed. Furthermore, **field studies will be required** to compare results by Bravo-Lillo et al. and us with habituation effects in the wild.