

INCENTIVE DESIGNS WITH UNCERTAINTY: KEEP THE HOPE ALIVE



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Early uncertainty design



Effort → Score: $\text{Score} = \text{Effort} + e(\text{randomness})$
Score → Payoff: $\text{Payoff} = \text{Score}$

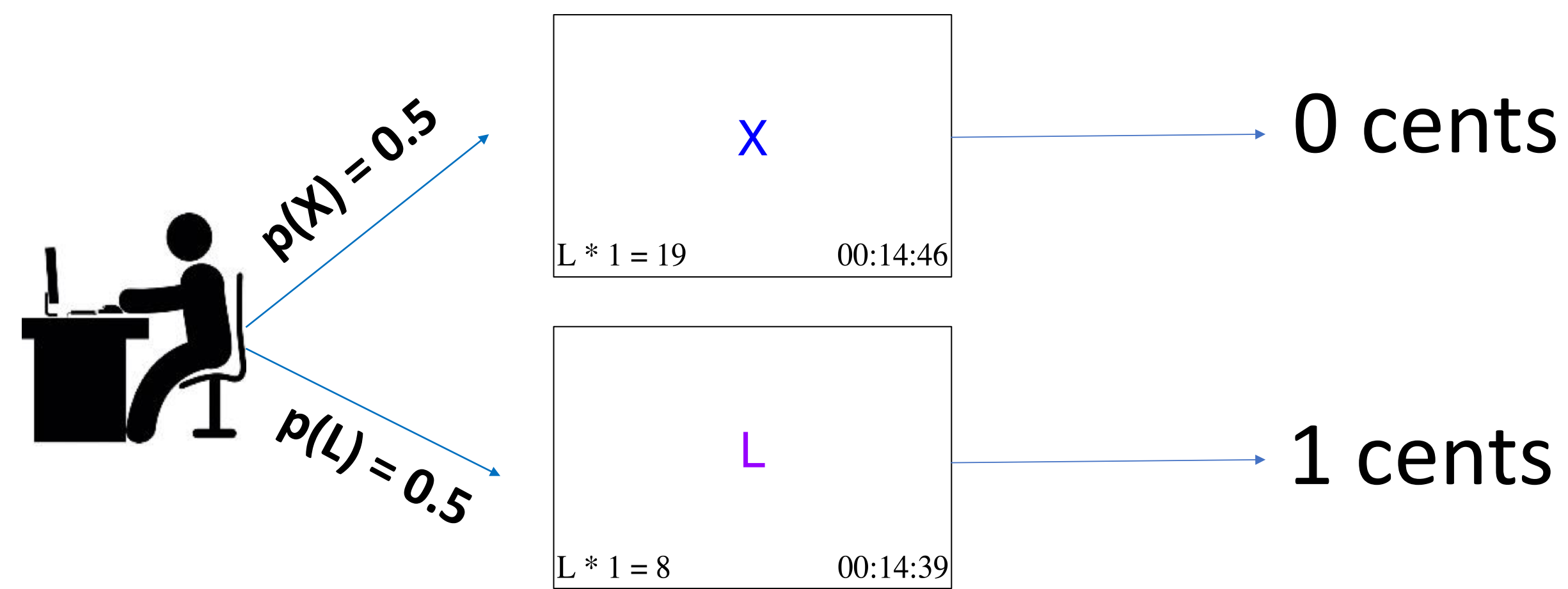
Later uncertainty design



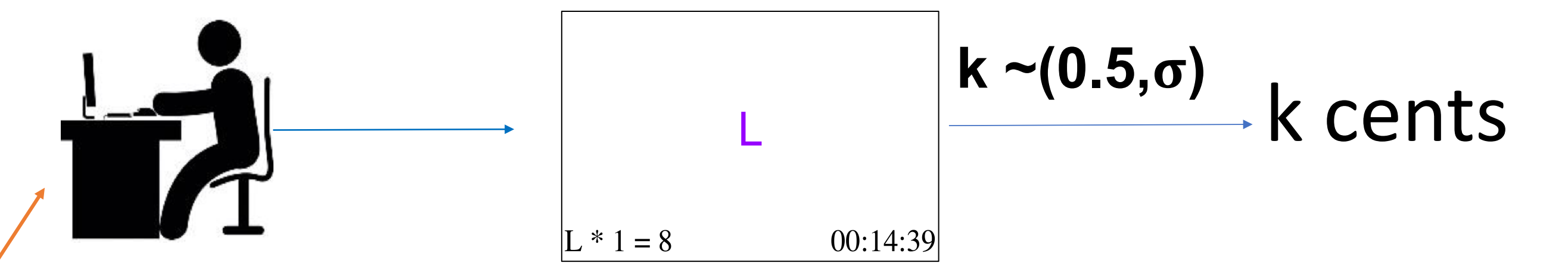
Which design is more motivating?

*controlling for conversion rates

Effort → Score: $\text{Score} = \text{Effort}$
Score → Payoff: $\text{Payoff} = \text{Score} + e(\text{randomness})$



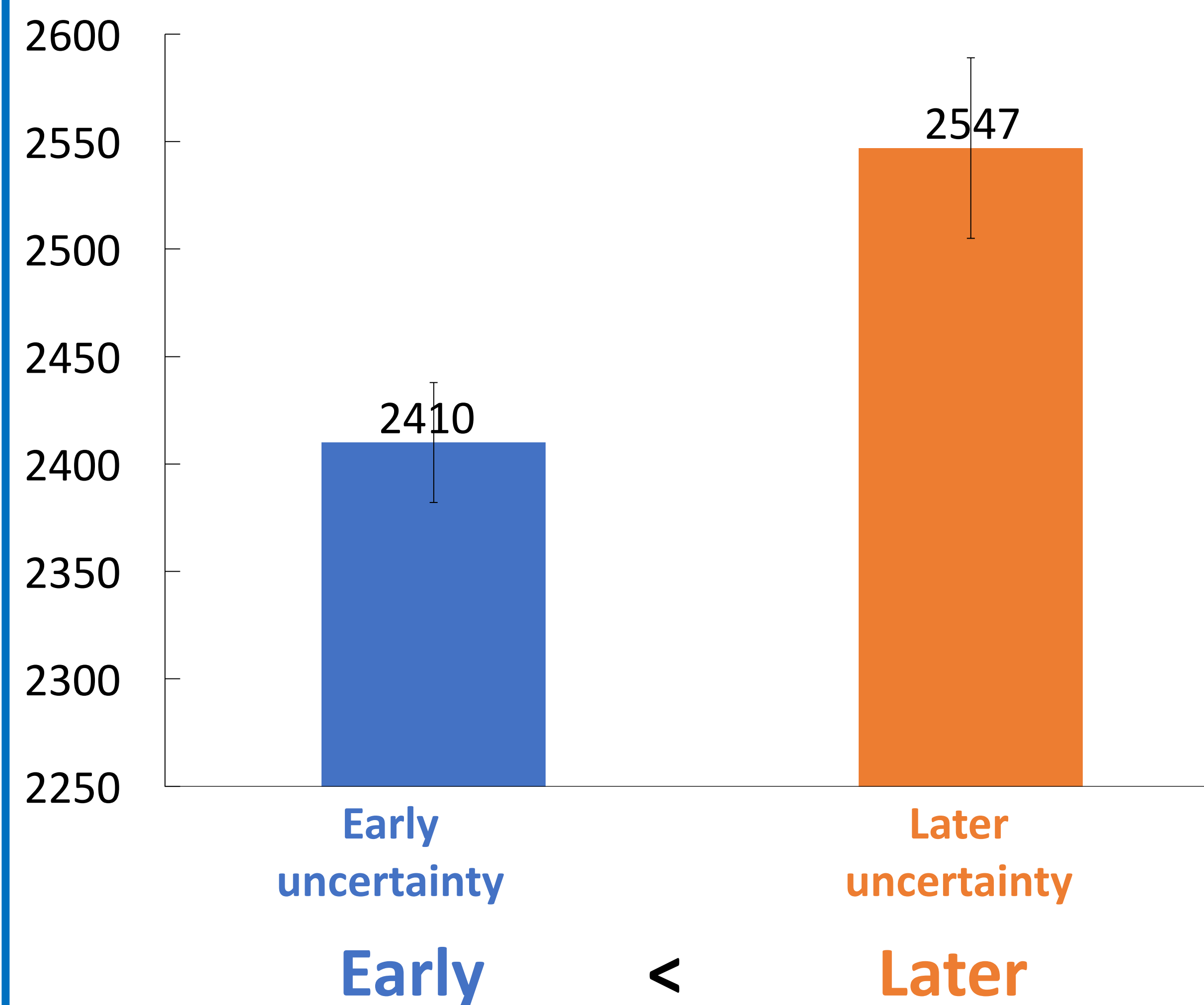
– see the result of L/X after each press



– draw a random number as pay rate after the task

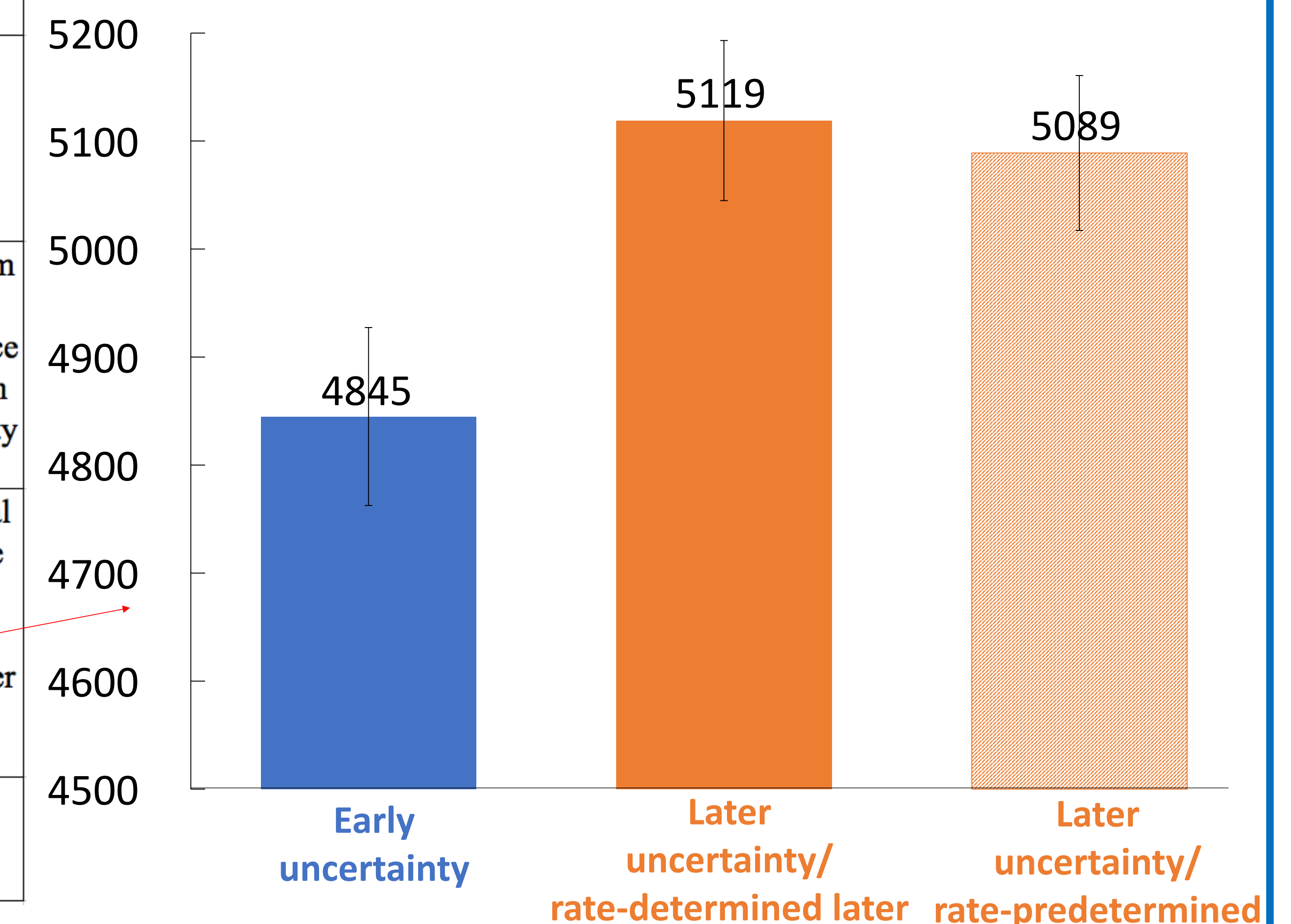
Study 1

Number of times one pressed the key (7 min)



Study 4

Number of times one pressed the key (15 min)



Explanations	Study Design (between-subject designs)	Result pattern	Findings
Zero aversion? (Study 2-4)	Study 2 - 4: people earn at least something.	later uncertainty > early uncertainty	No evidence supports the zero-aversion account.
Occurance timing vs. Resolution timing? (Study 2)	3 (early uncertainty vs. later/payrate uncertainty vs. later/percent uncertainty) conditions	All uncertainty conditions: later/percent = later/payrate > early	Evidence supports that the resolution timing of uncertainty, instead of the occurrence timing of uncertainty matters.
Medium maximization? Distraction effect? (Study 3)	2 (early vs. later) x 2 (uncertainty vs. certain/expected value)	later uncertainty > early uncertainty = early certain/EV = later certain/EV	No evidence supports medium maximization account and distraction effect; the evidence shows that the effect is driven mainly by the later uncertainty condition.
Magical thinking? (Study 4)	3 (early uncertainty vs. later uncertainty/rate-determined later vs. later uncertainty/rate-predetermined) conditions	All uncertainty conditions: later/later = later/predetermined > early	No evidence supports magical thinking (we tested this in the a third condition with a "sealed fate" setting: predetermine the rate) or other superstitious beliefs such as "tempting fate" and "luck".
Hopeful mind?	2 (early uncertainty vs. later uncertainty) x 3 (hopeful vs. hopeless vs. control)	to be examined...	...

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["sealed fate"] (strickland et al. 1966)