Clear Disclosures

Stefan Bucher Andrew Caplin Ryan Oprea Eric Spurlino[1]

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[1] *The views expressed in this presentation are those of the author and do not necessarily reflect those of the Federal Trade Commission of any individual Commissioner.*

The Challenge

- Mandated disclosures are a ubiquitous regulatory tool intended to reduce information asymmetries between firms and consumers
- However, a common critique is that these disclosures are often complex to the point of being unusable
- So, how do we make disclosures simpler?
- First order question is actually, how do we measure the simplicity/complexity of disclosures?

Modeling Disclosures

- We introduce theoretically-motivated experimental "wind tunnel" to measure complexity of a given disclosure format, focus on privacy policy setting
- Begin with simplified model of a consumer's decision problem
- A disclosure *d* conveys some information $\theta = \{\theta_1, \theta_2, \ldots \theta_n\}$
- E.g. θ_i could be a binary variable that is "True" iff the website collects information on your gender
- We'll only examine disclosures that convey the same information
- After "reading" a disclosure *d*, consumer makes binary action $a \in \{0, 1\}$ (e.g. accept or reject the policy)

Modeling Disclosures

- Suppose the consumer gets utility δ for choosing $a = 1$, compared to utility 0 for taking $a = 0$
- Complexity/costs of information can be revealed through the *cognitive economic curve*, $P_d(\delta)$, analogous to psychometric curves (Weber, 1834)

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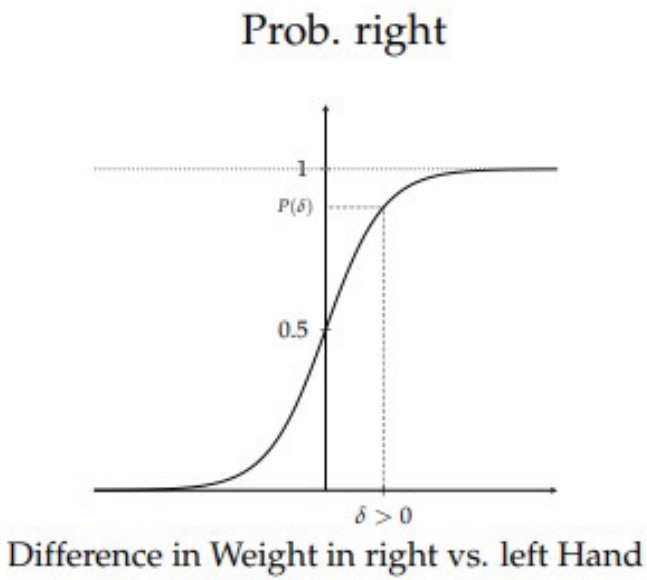
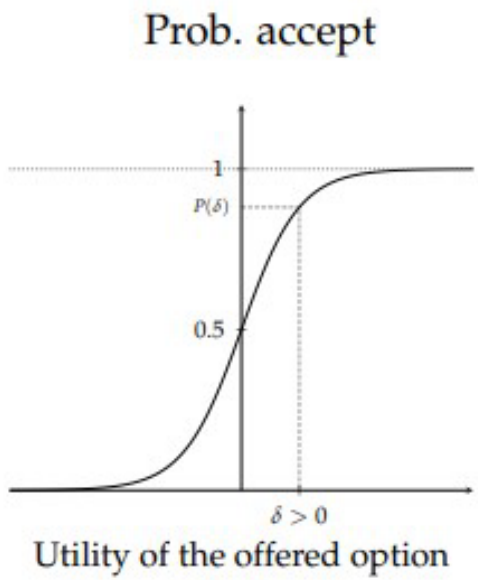


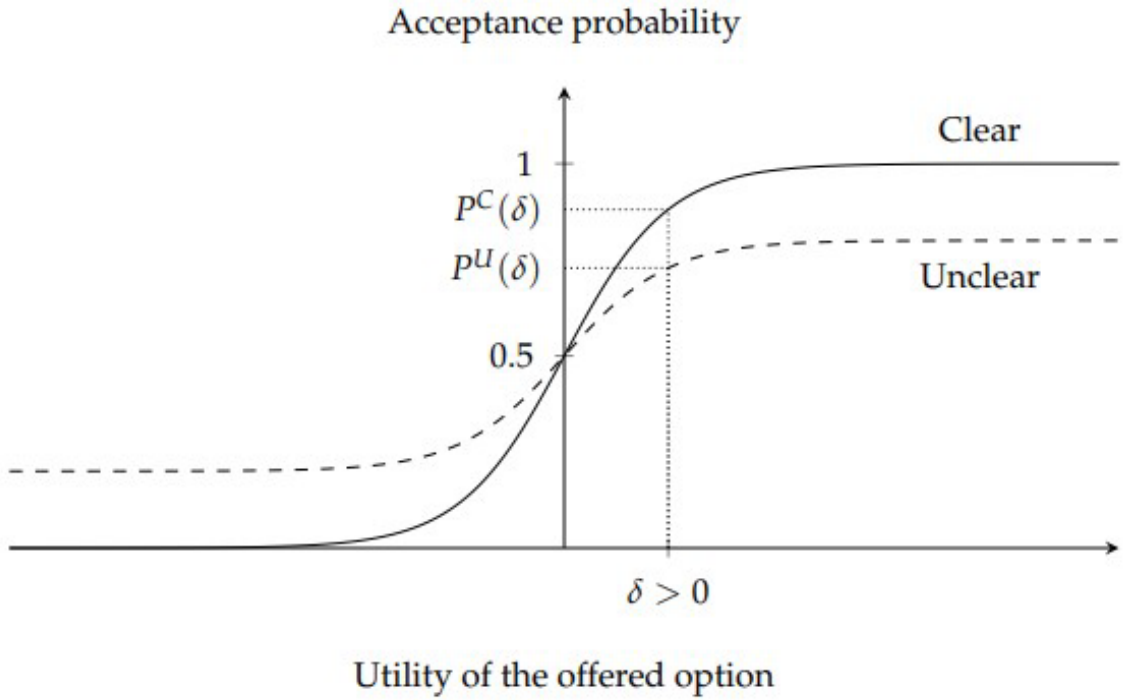


Modeling Disclosures

Interpreting Cognitive Economic Curves

Definition: Disclosure d is revealed more clear than d' if:

$$(P_d(\delta) - P_{d'}(\delta))\delta \geq 0 \qquad \forall \delta$$


Acceptance probability
Clear
1
$P^C(\delta)$
$P^U(\delta)$
Unclear
0.5
$\delta > 0$
Utility of the offered option

Interpreting Cognitive Economic Curves

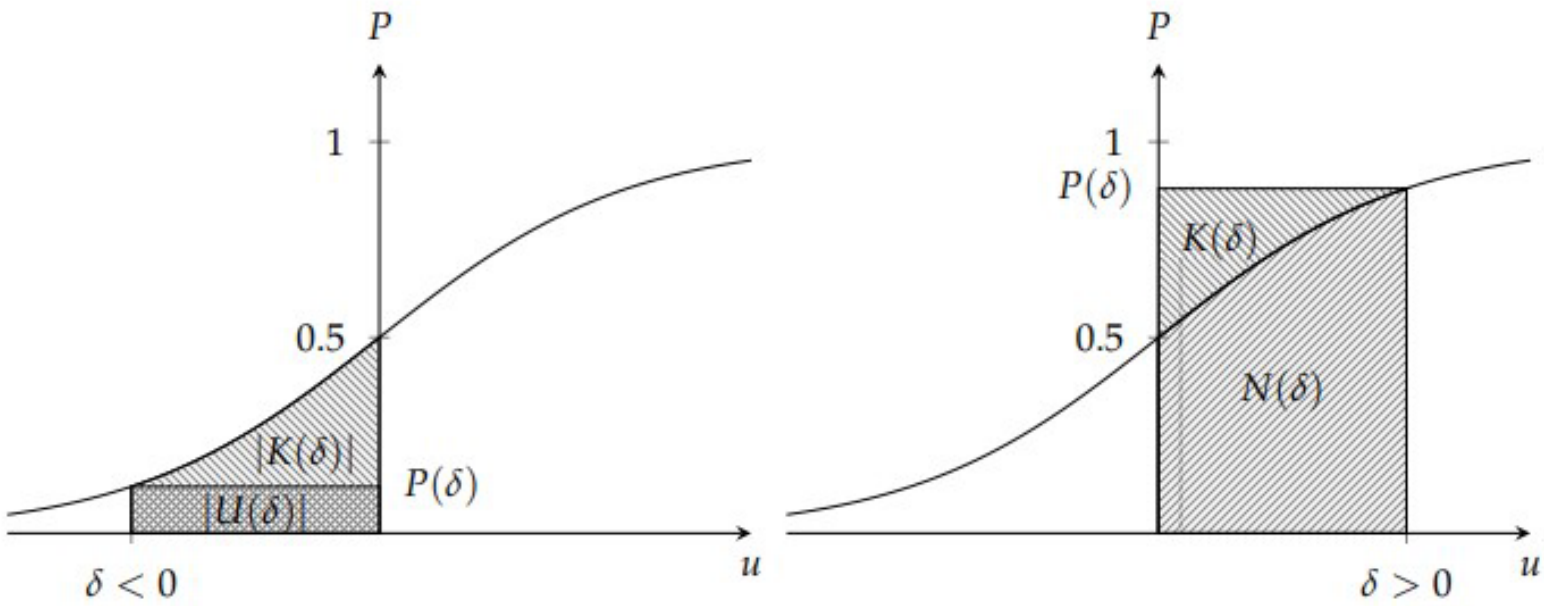


Figure 2: Gross utility $U(\delta) = \delta P(\delta)$ corresponds to the (signed) area of the rectangle touching the curve at $P(\delta)$. Net utility $N(\delta) = U(\delta) - K(\delta)$ corresponds to the (signed) area under the curve $P(\delta)$, and information costs $K(\delta)$ consequently to their difference.

Experimental Wind Tunnel

- CECs give regulators a lot to work with in analyzing the clarity of disclosure formats!
- Simple experiments can be used to elicit them
- Chose 20 relevant binary privacy variables that could be featured in a privacy policy[2]
- Had Claude3.5 (LLM by Anthropic) read actual HTML codes for popular website's privacy policies
- Generate a Python code that took input of 20 binary variables and outputted a privacy policy

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2 The 20 privacy variables: Collects Demographic Information, Collects Sensitive Information, Collects Location Information, Uses

Experimental Wind Tunnel

Cookies, Shares Your Data, Uses Behavioral Advertising, No Option to Delete Data, Collects Data on Minors, Not GDPR Compliant, Not CCPA Compliant, Collects Social Media Information, Profiles User Behavior, Trains AI on Your Data, Sells Your Contact Information, Keeps Your Data Indefinitely, Ignores Do Not Track Settings, Collects Device Information, Collects Biometric Information, Uses Data on You from Third Parties, Lacks Strong Data Security Measures

TechNova Solutions Privacy Policy

Last Updated: October 01, 2024

Our company refrains from collecting or processing personal demographic information. We have designed our services to function without gathering data on age, gender, income, education, or occupation.

We do not use cookies or tracking technologies on our Services. We respect your privacy and design our services to function without the need for cookies or similar tracking mechanisms.

Our platform refrains from gathering or analyzing location information like GPS coordinates, WiFi triangulation, or IP geolocation. We have developed our services to operate effectively without requiring knowledge of your specific whereabouts.

We do not collect or process biometric data under any circumstances. Our security and authentication methods do not involve the use of biometric information.

By using TechNova Solutions's Services, you agree to the practices described in this policy. If you disagree with any part of this policy, please discontinue use of our Services.

We value your preferences regarding communications from TechNova Solutions. You have options to opt-out of certain communications or adjust your notification settings as needed.

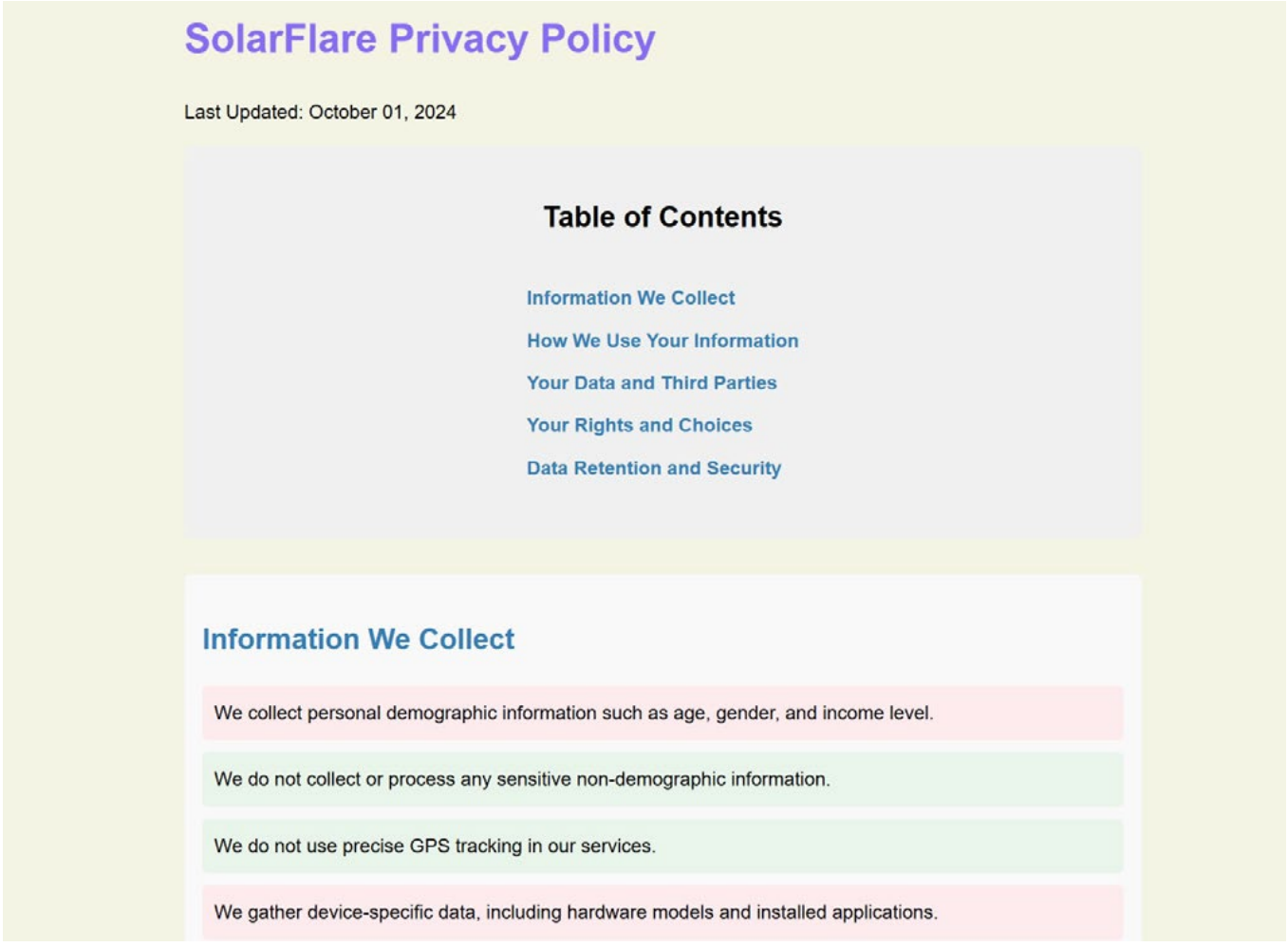
We collect and process data related to your device, including the device type, operating system, unique device identifiers, and network information. This data enables us to tailor our Services for different devices, address technical issues, and improve security measures. We might also use this information to customize your experience and refine our Services. You can manage certain aspects of device data collection via your device settings.

Experimental Wind Tunnel

Control disclosure presents each of the 20 features in random order

(1300 words)

Experimental Wind Tunnel



SolarFlare Privacy Policy

Last Updated: October 01, 2024

Table of Contents

Information We Collect

How We Use Your Information

Your Data and Third Parties

Your Rights and Choices

Data Retention and Security

Information We Collect

We collect personal demographic information such as age, gender, and income level.

We do not collect or process any sensitive non-demographic information.

We do not use precise GPS tracking in our services.

We gather device-specific data, including hardware models and installed applications.

Experimental Wind Tunnel

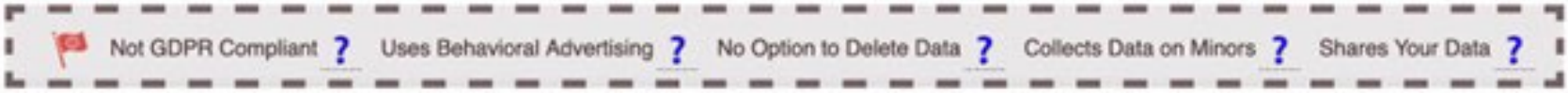
"Simple" disclosure format generated by Claude to be extremely readable and user-friendly (250 words)

- Subjects choose hypothetical "Accept" or "Reject" decisions for each disclosure
- Experimentally endowed incentives
- Told they care about 5 randomly selected "red flags"

$$u(a|\#\text{ of flags}) = \begin{cases} z & \text{if \# of flags} \leq 2 \\ 0 & \text{if \# of flags} > 2 \end{cases}$$

$$u(r) = z$$

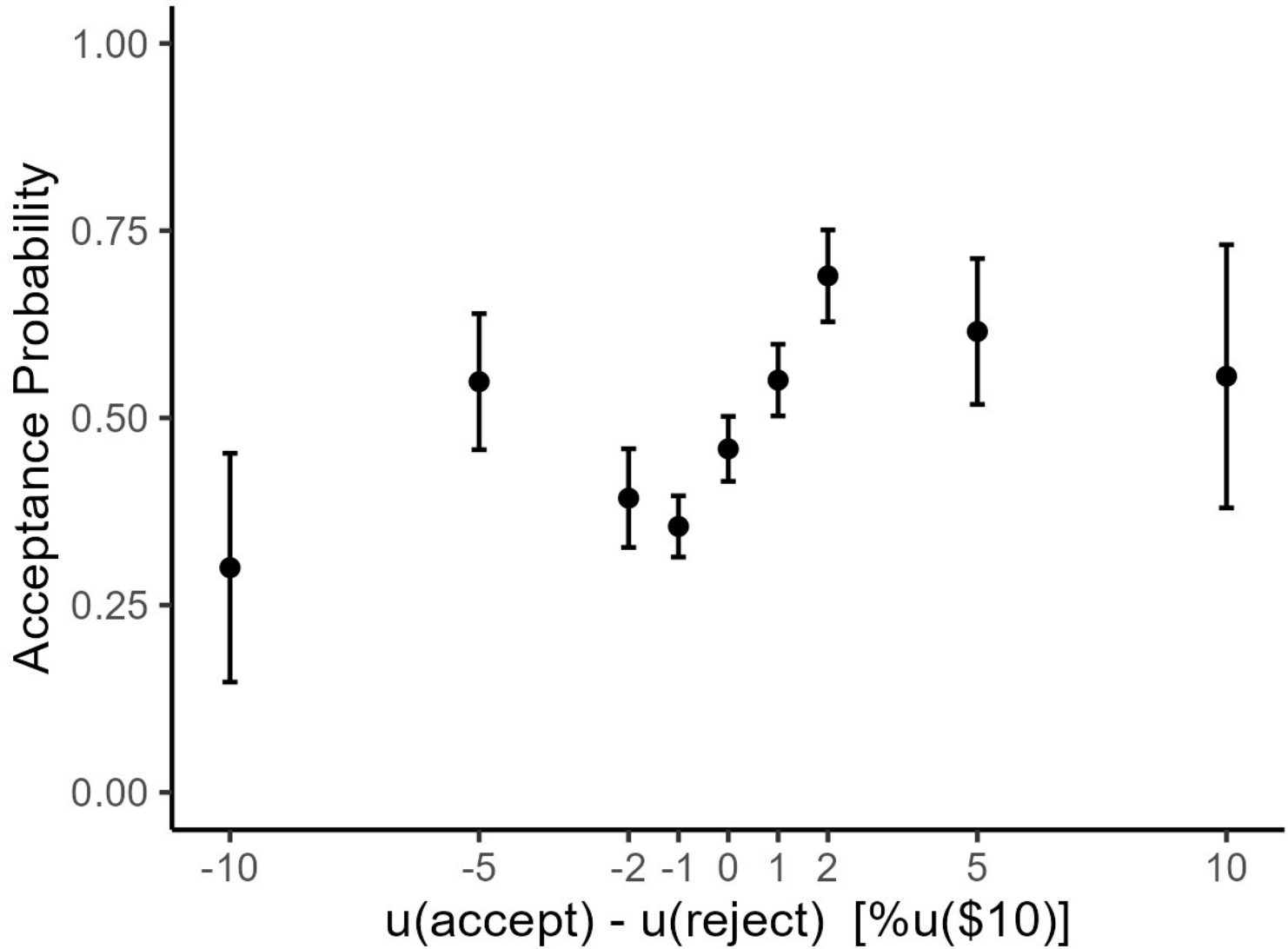
Experimental Wind Tunnel



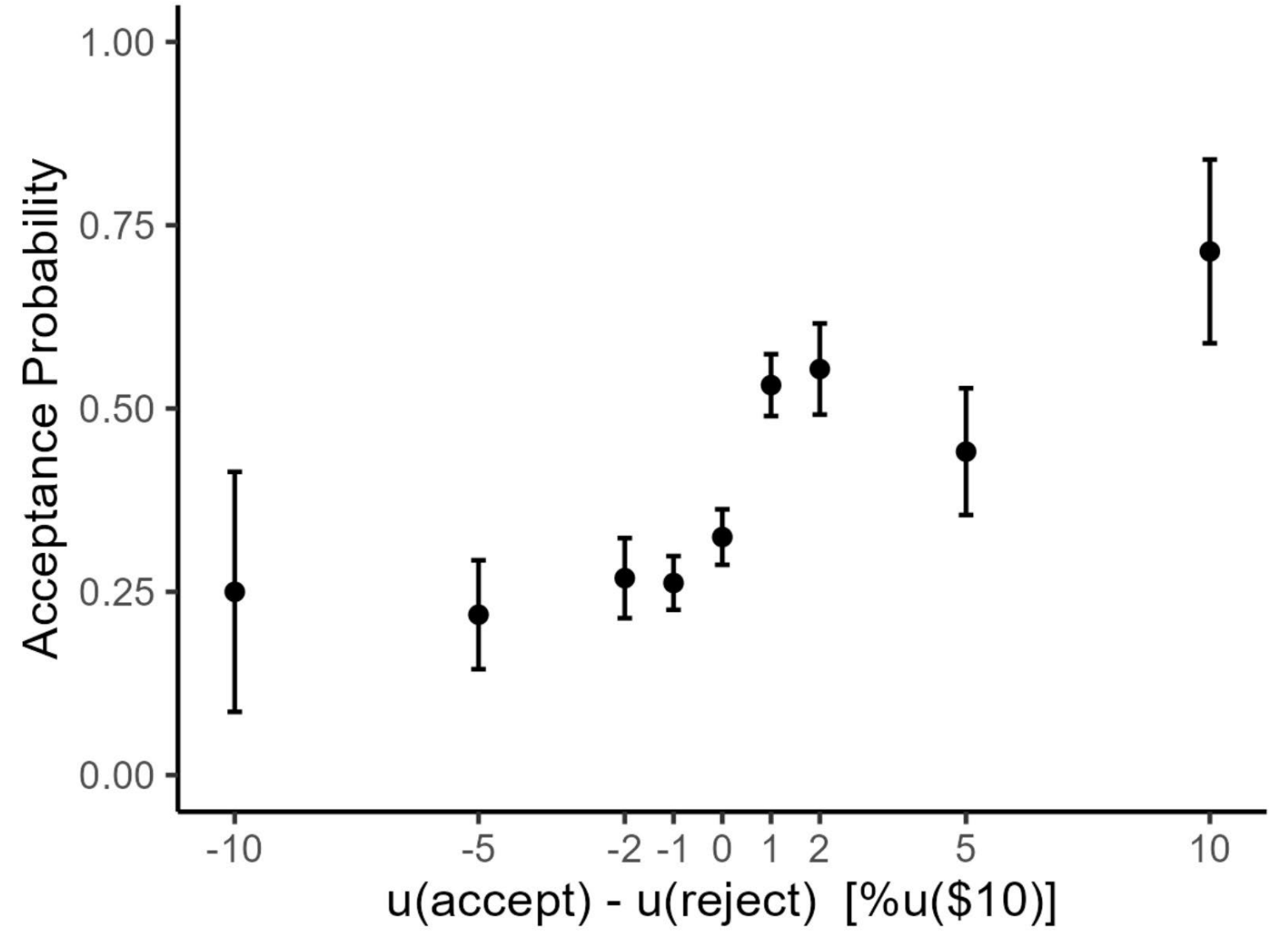
2

- Subjects play 30 rounds, where *z* varies from 0 to 10 probability points for a cash prize
- Type of disclosure (simple or control) stays constant, varied between subjects
- Subjects told each red flag has a 50% chance of being present

Control CEC


1.00
0.75
0.50
0.25
0.00
Acceptance Probability
-10
-5
-2
-1
0
1
2
5
10
u(accept) - u(reject) [%u($10)]

Simple CEC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-1
0
1
2
5
10
u(accept) - u(reject) [%u($10)]

Conclusion and Implications

- Introduced a method to measure disclosure clarity through revealed complexity
- Demonstrated application to privacy policies
- Cognitive economics has given a ton of tools to measure complexity, time is right to put them to use!
- Disclosure formats to test?
- Other settings?