Comparing Hypothetical and Realistic Privacy Valuations

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Why measure privacy preferences?

- Privacy preferences = willingness/comfort sharing personal info
- Who benefits from understanding privacy preferences?
    - System designers
        - What data are users okay sharing?
        - How much value should users receive for sharing?
    - Policy makers
        - How much "loss" do consumers incur through data breaches?
        - What kind of data sharing (if any) should be disincentivized?

This talk: Can we predict privacy valuations?

- Privacy valuation = willingness to sell and selling price for personal info
- How do privacy valuations depend on combinations of factors?
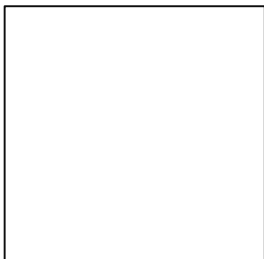
Attribute type   *Receiving party*   *Scenario realism*

- Does hypothetical bias explain the privacy paradox?

Methodology

- Online study with 434 Prolific participants
- Participants asked to assign selling prices to personal attributes
    - Could also choose to not sell
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Prices assigned to 7 attributes and 6 parties

For how much do you agree to sell your [attribute] to each one of the following parties?
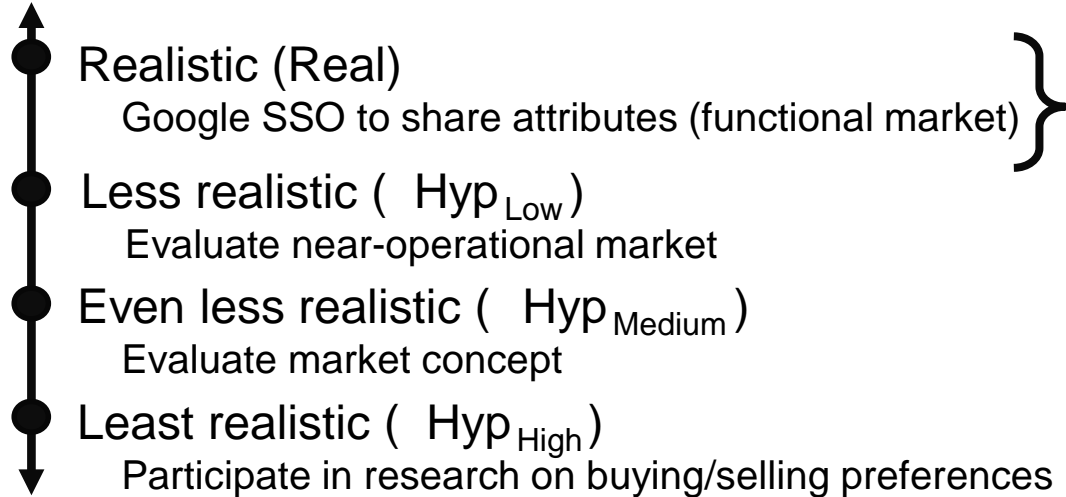
Choice

Sell   Do not sell | $ amount

○   ○

- Age
- Email address
- Gender
- Relationship status
- Home address
- Occupation
- Phone number

- Ad networks
- Federal agencies
- Insurance companies
- Market research companies
- Political parties
- Research pools

We varied the realism of the scenario

More realistic

Realistic (Real)
   Google SSO to share attributes (functional market) }

Less realistic (Hyp_{Low})
   Evaluate near-operational market

Even less realistic (Hyp_{Medium})
   Evaluate market concept

Least realistic (Hyp_{High})
   Participate in research on buying/selling preferences

Less realistic

Contact info sold for more $

Real ▪ Hyp_{Low} □ Hyp_{Medium} ▪ Hyp_{High} ■

$
sold
for

Selling price depends on who is buying

$$

Research pools

Federal agencies

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$$$$$$

Ad networks

Market research companies

Political parties

Insurance companies

Privacy paradox doesn't always hold

- *Hypothetical* values not generally different than *Realistic* values
  - Exceptions:
    - Phone number (~$9 vs. ~$14)
    - Home address (~$8 vs. ~$11)

- Calibration factor = Hypothetical / Real
  - Largest calibration factor in our study was 1.61
  - List and Gallet (2001): 4.44 for public goods, 8.41 for private goods

- No significant differences in likelihood of selling by scenario realism

Can we predict valuations?

- From scenario realism, attribute type, and receiving party

  Dollar values?

  - Not yet, individual users have
    very different baselines
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