

PENNSSTATE



Designing the Default Privacy Settings for Facebook Applications

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***Law:* Privacy = “Right to be left alone”** (Warren and Brandeis 1890).



Computer Science

- **Privacy: identity management solutions to address**
 - anonymity, unlinkability, unobservability, or pseudonymity



Social Psychology, Marketing, and MIS

- Frequent linkage of ***privacy*** and ***control***



What is Privacy?

- ▶ Privacy scholars “do not agree...on what privacy is or on whether privacy is a behavior, attitude, process, goal, phenomenal state, or what” (Margulis 1977, p.17)
- ▶ “The notion of privacy is fraught with multiple meanings, interpretations, and value judgments” (NAC 2007).

Privacy "is in disarray and nobody can articulate what it means" (Solove 2006, p. 477)

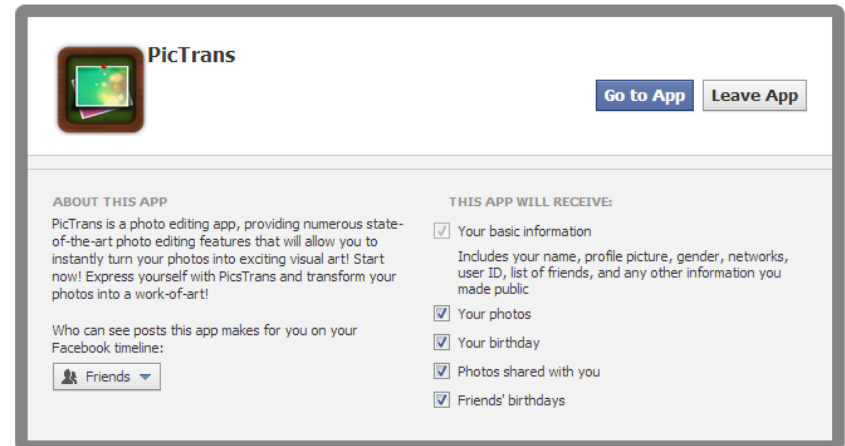
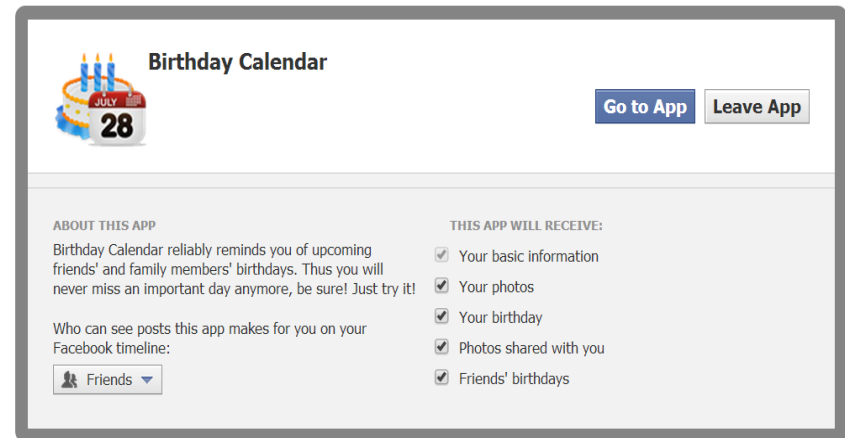
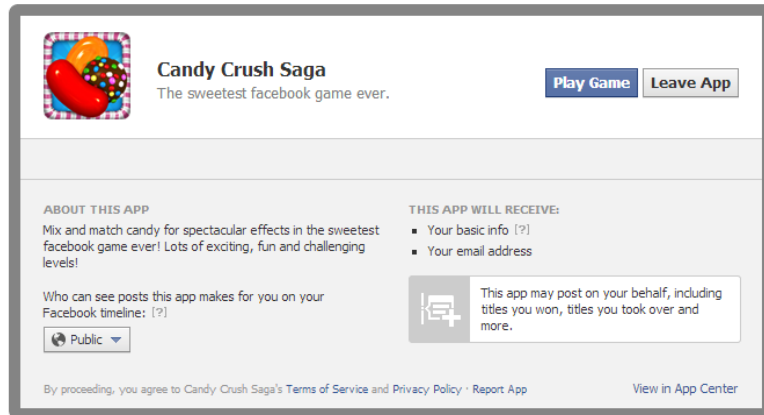


Privacy: Transparency and Control?

- ▶ Notice-and-Choice or Transparency-and-Control is at the heart of privacy regulatory schemes.
- ▶ Proposed U.S. Consumer Privacy Bill of Rights (White House 2012):
 - ▶ “companies should provide clear descriptions of [...] why they need the data, how they will use it”
 - ▶ “companies should offer consumers clear and simple choices [...] about personal data collection, use and disclosure”



Our Redesigns



Privacy: Transparency and Control?

- ▶ Is **Transparency-and-Control** working?
 - ▶ “Transparency-and-choice has failed” (Nissenbaum 2011)
 - ▶ Does not “provide people with meaningful control over their data” (Solove 2012)
 - ▶ Regard it as misdirected (Barocas & Nissenbaum 2009)
 - ▶ Illusion of Control
 - ▶ ...



Defaults

- ▶ Partially relieve users from the burden of making information disclosure decisions
- ▶ Endowment effect:
 - ▶ People are usually less willing to give up something they already have than they are willing to pay for acquiring something they do not have (Thaler 1980; Kahneman et al. 1990)



Experimental Design

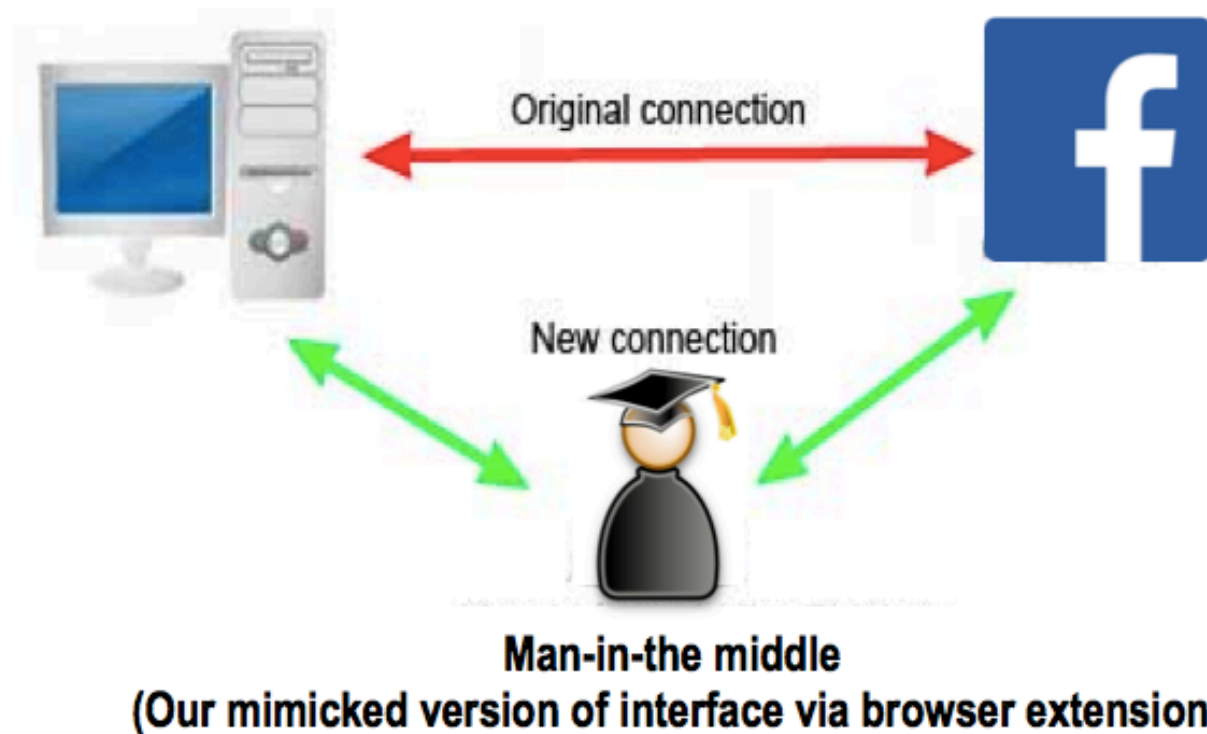
2x3 between-subject

- ▶ App context: Photo App and Birthday App
- ▶ Three levels of privacy default settings: IN, MIN, and OUT.

	Photo App (P)	Birthday App (B)
Opt-In (IN)	<div>THIS APP WILL RECEIVE:</div> <div><input checked="" type="checkbox"/> Your basic information</div> <div><input type="checkbox"/> Your photos</div> <div><input type="checkbox"/> Your birthday</div> <div><input type="checkbox"/> Photos shared with you</div> <div><input type="checkbox"/> Friends' birthdays</div>	<div>THIS APP WILL RECEIVE:</div> <div><input checked="" type="checkbox"/> Your basic information</div> <div><input type="checkbox"/> Your photos</div> <div><input type="checkbox"/> Your birthday</div> <div><input type="checkbox"/> Photos shared with you</div> <div><input type="checkbox"/> Friends' birthdays</div>
Minimally Necessary (MIN)	<div>THIS APP WILL RECEIVE:</div> <div><input checked="" type="checkbox"/> Your basic information</div> <div><input checked="" type="checkbox"/> Your photos</div> <div><input type="checkbox"/> Your birthday</div> <div><input checked="" type="checkbox"/> Photos shared with you</div> <div><input type="checkbox"/> Friends' birthdays</div>	<div>THIS APP WILL RECEIVE:</div> <div><input checked="" type="checkbox"/> Your basic information</div> <div><input type="checkbox"/> Your photos</div> <div><input checked="" type="checkbox"/> Your birthday</div> <div><input type="checkbox"/> Photos shared with you</div> <div><input checked="" type="checkbox"/> Friends' birthdays</div>
Opt-Out (OUT)	<div>THIS APP WILL RECEIVE:</div> <div><input checked="" type="checkbox"/> Your basic information</div> <div><input checked="" type="checkbox"/> Your photos</div> <div><input checked="" type="checkbox"/> Your birthday</div> <div><input checked="" type="checkbox"/> Photos shared with you</div> <div><input checked="" type="checkbox"/> Friends' birthdays</div>	<div>THIS APP WILL RECEIVE:</div> <div><input checked="" type="checkbox"/> Your basic information</div> <div><input checked="" type="checkbox"/> Your photos</div> <div><input checked="" type="checkbox"/> Your birthday</div> <div><input checked="" type="checkbox"/> Photos shared with you</div> <div><input checked="" type="checkbox"/> Friends' birthdays</div>

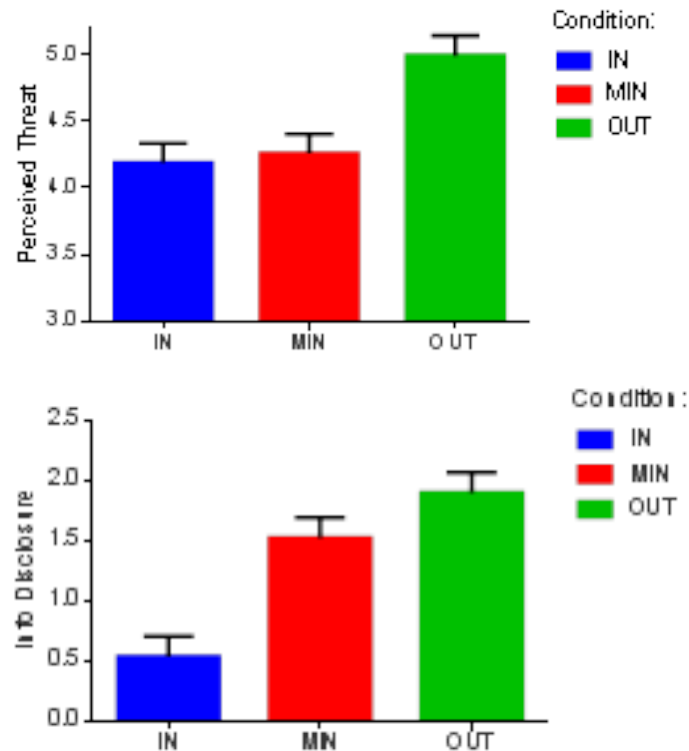
Experimental Implementation

- ▶ Mimicked Facebook's privacy notice dialogue to emulate the process of authorizing a third-party app.
- ▶ A Chrome browser extension was developed to override Facebook's default privacy notice for adding our Facebook app. (Wang et al. 2013).



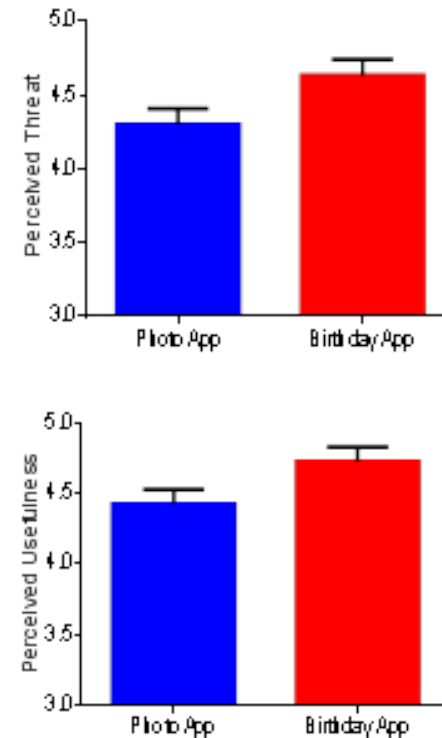
Preliminary Results

Effects of Default Settings



Participants in OUT condition perceived higher levels of privacy risk and disclosed more information

Effects of App Contexts



Default setting in Birthday App triggered higher levels of risk and higher levels of perceived usefulness than that of Photo App