

Should I Agree? Delegating Consent Decisions Beyond the Individual

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My name is Bettina Nissen from Design Informatics at the University of Edinburgh and I am presenting this paper “Should I Agree? Delegating Consent Decisions Beyond the Individual” on behalf of my co-authors from the University of Edinburgh, Lancaster University and the University of Manchester.

In this paper we are exploring aspects of consent in increasingly complex systems and situations - aiming to reconsider consent as more collective decision making processes beyond the current status quo of individual one-click agreements.

ISSUE WITH CONSENT

- ❖ Meaningful user consent is increasingly problematic
- ❖ Rooted in the idea of individual control in informed ways
- ❖ Exploring alternative approaches where delegating consent decisions to an ecosystem of third-parties

Obtaining meaningful user consent is increasingly problematic and current approaches are rooted in the idea of individual control despite growing evidence that users do not (or cannot) exercise such control in informed ways.

In this paper and study, we are exploring alternative approaches where users can opt to delegate consent decisions to an ecosystem of third parties (and I'll talk a little bit more about these choices shortly).

PRIVACY AND CONSENT

- ❖ Complex, contextual issue (Nissenbaum 2010/2011, Solove 2013)
- ❖ Temporal, social, cognitive or material factors
- ❖ Control remains dominant narrative
- ❖ "individual privacy is downplayed as a result of the click-wrap agreement culture on the internet" (Bechmann 2014)
- ❖ Discourse moving from individualised, user-centric towards more collective approaches of managing consent

Privacy has been a long studied issue in many disciplines, including HCI. With the expanding forms of digital devices and interactions many studies have come to frame privacy issues not just as complex but as contextual. Due to the complexity of a number of factors, such as temporal, social, cognitive or material ones, an individual's (ideally informed) decision making is not always provided. However, a dominant narrative has been focusing on the individual's control of information. As Anja Bechman (2014) framed it: "individual privacy is downplayed as a result of the click-wrap agreement culture on the internet".

How can we re-think it? Discourse on privacy intermediaries and recommendation-based systems for consent are moving from individualised, user-centric towards more collective approaches of delegation and recommendation.

IDENTIFIED INTERMEDIARIES



community or
crowd-based
systems

e.g. Li et al 2011, Lin
et al 2012, ToS;DR



machine
learning
systems and
automated
agents

e.g. Baarslag et al
2017, Bilogrevic et
al 2016



expert-
based
systems

e.g. Rashidi
et al 2015,
personaldata.io



nominated
individuals

e.g. Bélanger et
al 2013

To explore how users may make choices in more collective models, we identified 4 categories for previously investigated privacy intermediaries. These are ... (see slides).

To contextualise these different intermediaries as options for delegating consent, we imagined a series of scenarios to investigate...

SCENARIOS

Roessler's Framework	Layers of Privacy	Scenario	Description
Informational Privacy	Mental Privacy	S1: Entertainment History	A game asks you to share music playlists and listening habits to develop an algorithm to change in-game-music according to your taste and mood.
Local Privacy	Spatial Privacy	S2: Location Data	Your weather app request access to your location and audio data to investigate noise pollution in your city. This data will be shared with the local council to review speed limits.
Local Privacy	Interactional Privacy	S3: Browsing History	Your sibling shares a survey with you to plan a joint holiday. They use an online service that asks for access to your entire browser history.
Informational Privacy	Informational Privacy	S4: Contact Lists	Your boss requires you to download a new chat service to communicate with your colleagues. You download the service and it asks for access to all your contacts in your address book, not only work-related ones. If you don't agree, you can't use the service for work.
Decisional Privacy	Decisional Privacy	S5: Social Media Activity	To provide personalised food boxes, local producers ask you to share social media likes of food pictures.
Decisional Privacy	Bodily Privacy	S6: Health Data	Public health services ask you share anonymised medical records with third parties to improve services.

Beate Roessler. 2006. New Ways of Thinking About Privacy. In Oxford Handbook of Political Theory, Anne Philips Bonnie Honig and John Dryzek (Eds.). Oxford University Press, Oxford, 694–713.

To create a set of clear and contextually different scenarios to study we based our imagined scenarios on established frameworks of privacy dimensions by Beate Roessler. For time reasons, I won't go into further detail here and will refer to the paper.

PHYSICAL QUESTIONNAIRE



Golsteijn et al. 2015.
VoxBox: A Tangible
Machine That Gathers
Opinions from the
Public at Events.



Gallacher et al 2016.
SmallTalk: Using Tangible
Interactions to Gather
Feedback from Children.



Gourlet & Dassé. 2017. Cairn:
A Tangible Apparatus for
Situating Data Collection,
Visualization and Analysis.



Taylor et al. 2012.
Viewpoint:
Empowering
Communities with
Situating Voting
Devices.

To move our engagement away from further one click approaches to reach a wider general public audience, we were inspired by more physical research approaches beyond traditional surveys that take public forms. Our design development was based on previous researchers work in this area and we adopted some features identified by this previous work.

TRUSTBALL

- ❖ Allow for more socially rich engagement with the subject matter
- ❖ Offer opportunities for observation and mutual exchange
- ❖ Not solely to gather data but to create a condensed consent experience
- ❖ Incorporate contextual nature of being 'put on the spot' in this experiential survey



Based on previous research, we developed an engaging physical questionnaire in the form of a arcade-style game we called Trustball...

- the aim of our probe and this research study was not solely to

gather data about user's attitudes towards privacy and consent but to create a condensed consent experience that exemplifies signing up to a new app or service beyond acting only as questionnaire

- We aimed to incorporate this contextual nature of being 'put on the spot' in our experiential survey



Before I go into details of our study, here a short video to explain the interactions...

[VIDEO]

- Arcade style game with screen, buttons and a stock of balls that would be dropped into the machine
- Initial interaction we asked visitors to read t&c of this study
- Confronted them with how long/short they spend reading
- Ball drops into the apparatus
- Demographics and to disregard children's interactions
- 3 randomly selected scenarios and answers to release the ball, no matter which choice was selected, the ball would always continue to drop into the next section
- Taking ball as reward, initially with sweets but left with information and a data provocation

DATA COLLECTION & ANALYSIS

3 weeks at Edinburgh International Festival 2018 in a centrally located public exhibition as part of other cultural events

Collected interaction data from Trustball (1,749 unique interactions), follow-up questionnaires and field observations

- Installed 3 weeks at Edinburgh International Festival 2018 in a centrally located public exhibition as part of other cultural events to attract large numbers of local as well as international visitors
- Area including numerous free public engagement activities, performances and entertainment events



In situ as Trustball was installed at the Edinburgh Festival.

DATA COLLECTION & ANALYSIS

Noise filtering and pre-processing through average reading speed

565 unique Trustball interactions
44 valid follow up questionnaires
7 days of field observations

Extensive noise filtering based on click and reading times to focus analysis on valid and meaningful interactions, there is a detailed description of how we filtered and processed the data in the paper.

PARTICIPANT OBSERVATIONS

Mix of individual players, pairs/couples and groups of more than two people

- ❖ T&C provocation elicited strong reaction and promoted discussion
- ❖ Reading aloud, discussion and debating options in pairs/groups
- ❖ Debate leading to changed opinions (e.g. healthcare)

"What? No, in those things I only trust myself." (P1)

"Really, don't you trust what your doctor says?" (P2)

"Yeah, I wouldn't know if I always know best, I'd ask someone." (P3)

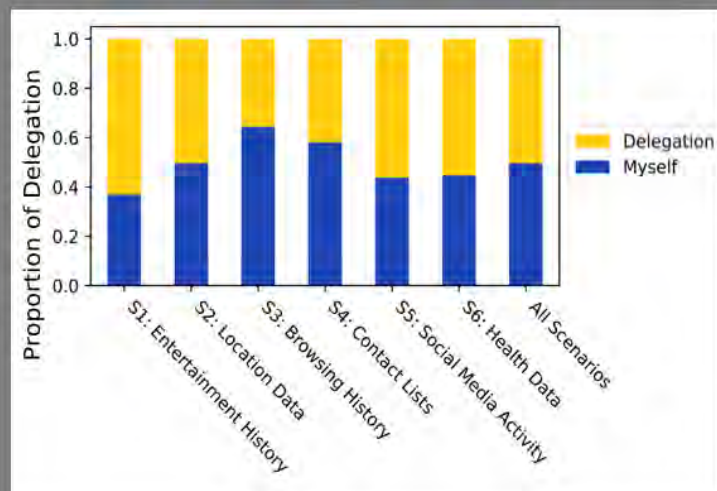
"I guess you are right. Maybe an expert then." (P1)

individual players (interacting with Trustball alone or without interference from others); pairs/couples (with both people standing in front of Trustball, but with varying degrees of interaction) groups of more than two people

T&C often provoked laughter, surprise and "feeling busted" and "I told you so"

ANALYSING INTERACTIONS

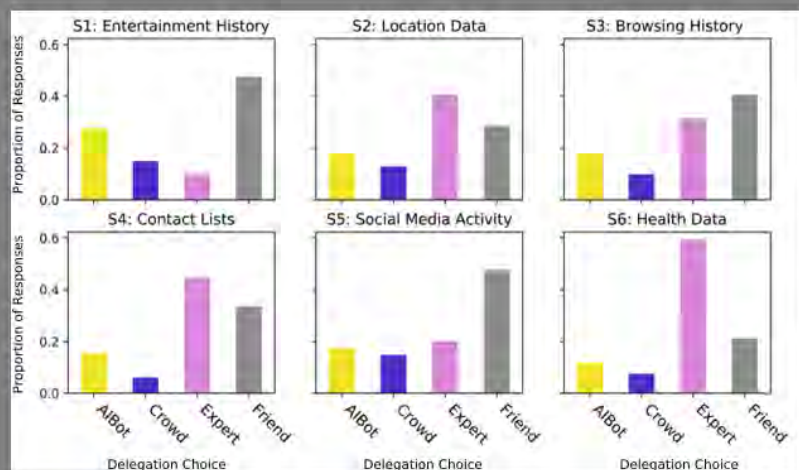
Were Participants Prepared to Delegate Decision Making?



- Overall delegation (50.4% of responses) approximately equal to the desire to retain control (49.6%)
- Differences across scenarios min. 37% for S3: Browsing History and max. 61% for S1: Entertainment History

ANALYSING INTERACTIONS

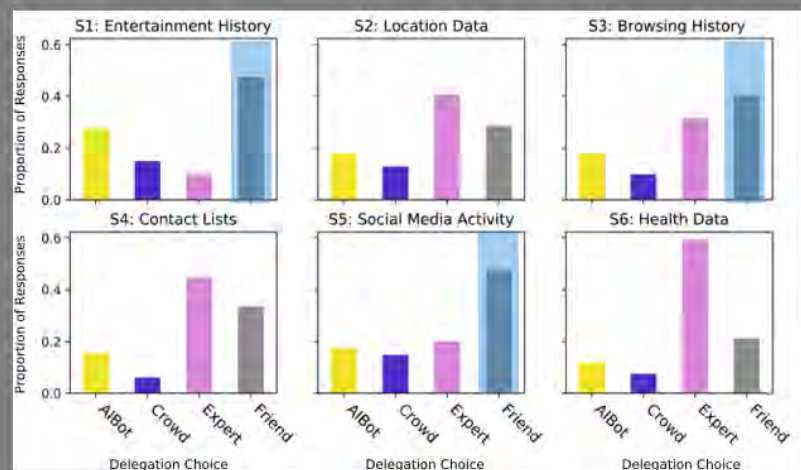
*Does the
Choice of
Delegation
Vary by
Scenario?*



- **When looking at delegation options per scenario**
- (excluding Myself) - Friend is the most popular delegation option for S1: Entertainment History, S3: Browsing History, and S5: Social Media Activity
- Expert for S2: Location Data, S4: Contact Lists and S6: Health Data
- Both AI/Bot and Crowd consistently least popular

ANALYSING INTERACTIONS

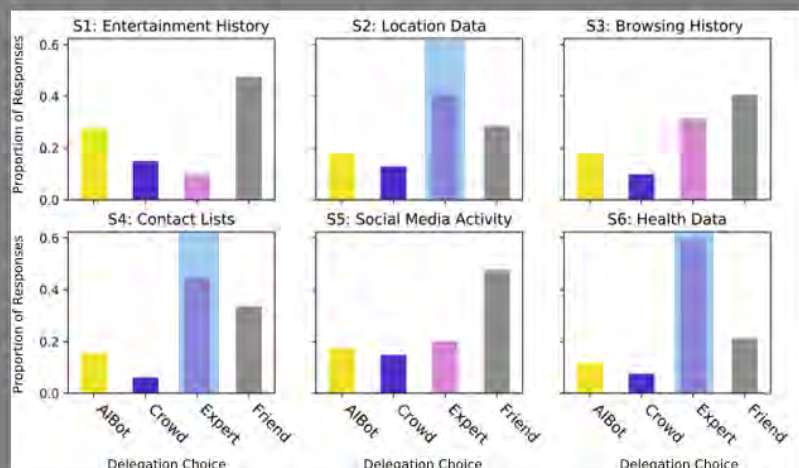
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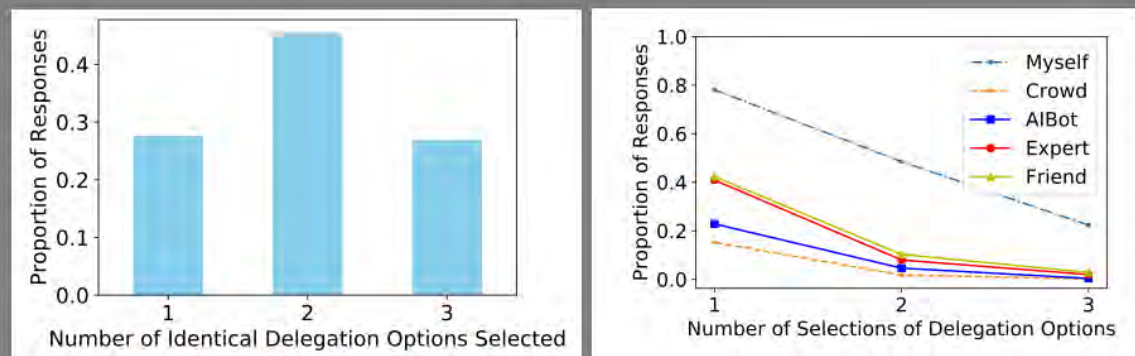
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- Both AI/Bot and Crowd consistently least popular

ANALYSING INTERACTIONS

Do Participants Make Consistent Delegation Choices?



- **Tendency for participants to include two delegation options**
- Over 70% of participants selected Myself at least once ($\approx 50\%$ at least twice and over 20% three times – confirming)
- Similar popularity patterns: (1) Friend and Expert, and (2) Al/Bot and Crowd
- Al/Bot and Crowd delegation options were not selected three times by any participant

FOLLOW UP QUESTIONNAIRES

Do you read terms or services or privacy policies? (please tick one)

<input type="checkbox"/> yes, all the time	<input type="checkbox"/> yes, frequently	<input type="checkbox"/> yes, sometimes	<input type="checkbox"/> no, never
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How do you choose whether or not to read Terms of Services or Privacy Policies? And why?

Have you been asked to give recommendations to use/not use a service before (e.g. family members, friends, colleagues, etc)? (please tick one)

<input type="checkbox"/> yes, all the time	<input type="checkbox"/> yes, frequently	<input type="checkbox"/> yes, sometimes	<input type="checkbox"/> no, never
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Would you like to get advice or help to manage your privacy and data?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I already use (name of service):
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Considering a tool to support your privacy decision making, please rate the following options for their usefulness on a scale from 1-9 ('1' not useful at all, '9' being very useful)

Friends: _____	AI/Bot: _____
Crowd: _____	Expert: _____

Please rank which data you are most happy to share the decision making on a scale from 1-9 ('1' not happy at all, '9' being very happy):

Health data: _____	Social media data: _____
Location data: _____	Economic data: _____
Behavioural data: _____	Other (name + ranking): _____

☐ 15 or younger ☐ 16-25

☐ 26-40 ☐ 41-60

How did you choose whom to trust with your data decision? And why?

What did you think about when deciding who to trust?

In your daily life, who would you trust to make decisions fully on your behalf and why?

May we include your answers in our research? ☐ Yes / ☐ No

This research is being conducted by researchers from Design Informatics at the University of Edinburgh in collaboration with the Data Science Institute at Lancaster University. If you have any questions or comments, please email Betina.Nijssen@ed.ac.uk or visit our project website at www.oactman.uk.

The follow up questionnaires were mostly open ended with a series of ranking and checkbox questions covering two main areas.

FOLLOW UP QUESTIONNAIRES

Participant Practices when Agreeing to ToS

❖ Reading T&Cs: never: 40.9% , sometimes: 40.9% , frequently: 13.6% , all the time: 4.5%

❖ Considering factors for decision making: data importance, data recipients and data usage

❖ Naming “reputation”, “recognisability” and “established companies” as factors of trust for legitimacy and plausibility of a service requiring specific data

May we include your answers in our research? ☐ yes / ☐ No

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Firstly, to further follow up with participants on their current practices and perceptions of consent behavior, most people (80%) never or only sometimes read T&C and what factors play a role in this decision making practices (data importance, data recipients and data usage) while naming reputation, recognizability and established companies for trusting and consenting to a service

FOLLOW UP QUESTIONNAIRES

Do you read terms or services or privacy policies?

☐ yes, all the time ☐ yes, frequently ☐ sometimes ☐ no

How do you choose whether to not to read them? Is it a day job or a hobby? Please? And why?

How did you choose whom to trust with your data decision? And why?

☐ 15 or younger ☐ 16-25 ☐ 26-35 ☐ 36-45 ☐ 46-60

Delegation Preferences and Practices

Have you been asked to give recommendations to use/not use a service before?

☐ yes, all the time ☐ yes, frequently ☐ sometimes ☐ no

What did you think about when deciding who to trust?

☐ yes, all the time ☐ yes, frequently ☐ sometimes ☐ no

Would you like to get advice or help to manage your privacy and data?

☐ yes, all the time ☐ yes, frequently ☐ sometimes ☐ no

Considering a tool to support your privacy decision making, please rate the following options for their usefulness on a scale from 1-9

☐ Expert ☐ Friend ☐ AI/Bot ☐ Crowd

Rating of usefulness of delegation options, similar to interaction results: Expert (54%), Friend (30%), AI/Bot (10%) and Crowd (6%)

Acting as delegatee or recommender for others: 'all the time': 7.0% , 'frequently': 32.6% , 'sometimes': 53.5% , 'never': 7.0%)

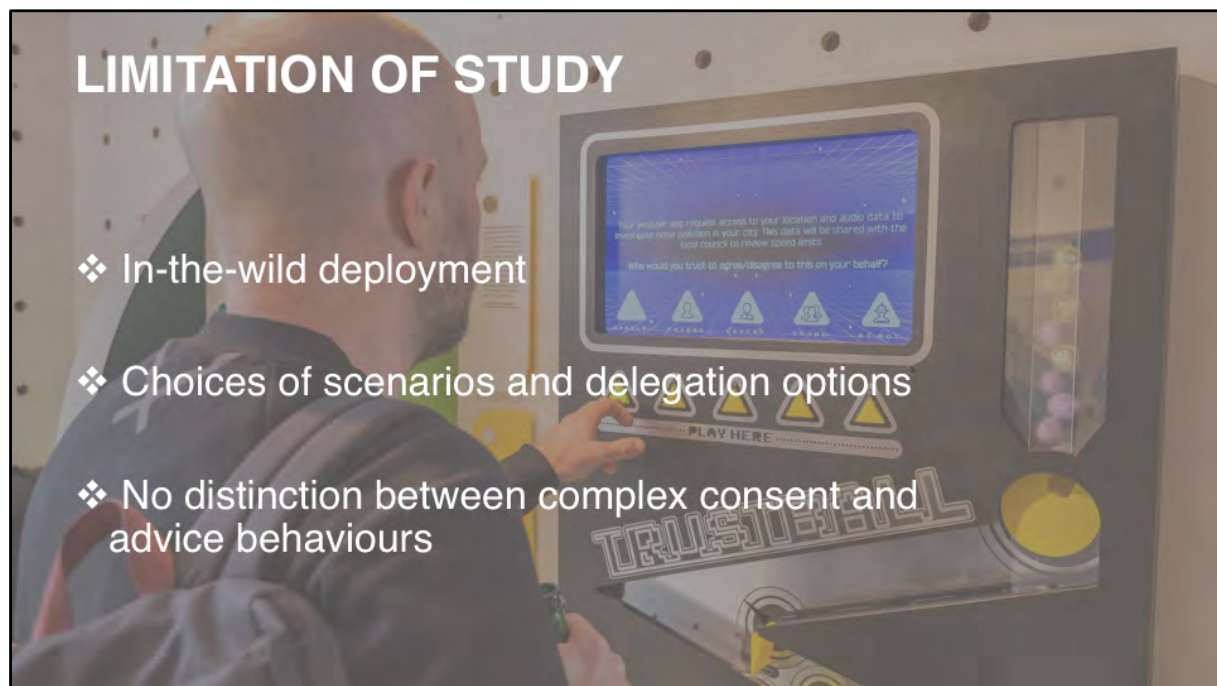
Please rank which data you are most happy to share the decision making on a scale from 1-9

Health data	Social media data
Location data	Economic data
Behavioural data	Other (name & explain)

May we include your answers in our research? ☐ yes ☐ No

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Secondly, the questionnaire gave details about participant's perceptions of their judgement, value of delegation options and if they consider to already perform delegation or recommendation activities for consent decisions.



1. In-the-wild deployment in the context of this festival exhibition led to significant noise, potentially error-prone filtering of invalid events which showed that a detailed methodology for filtering and pre-processing of data was essential before a meaningful analysis was conducted
2. Choices of scenarios and delegation options clearly influence participant behaviour and are limited in scope but could be investigated further (e.g. the word Crowd as delegator may hold different results if the chosen word were community)
3. We didn't intend to conflate complex consent and advice behaviours but acknowledge that further differentiation between these concepts in decision-making processes is necessary

TO CONCLUDE

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- ❖ People are prepared to delegate
- ❖ Delegation choices differ depending on contextual scenarios
- ❖ Proposition to open consent out instead of closing it down offering multiple choices of consent, control and ultimately agency to the user

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In summary, our public engagement with the physical questionnaire Trustball has shown that people have an interest in delegating certain consent decisions but that these decisions differ and are highly dependent on contextual scenarios and information. We therefore propose that instead of increasingly closing consent decisions down (and burdening individuals with yet more decisions), we may want to reconsider this perspective and open consent decisions out beyond the individual to offer more collective, flexible tools to make informed choices not just about when to consent but when to delegate and when to automate decision-making.