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.

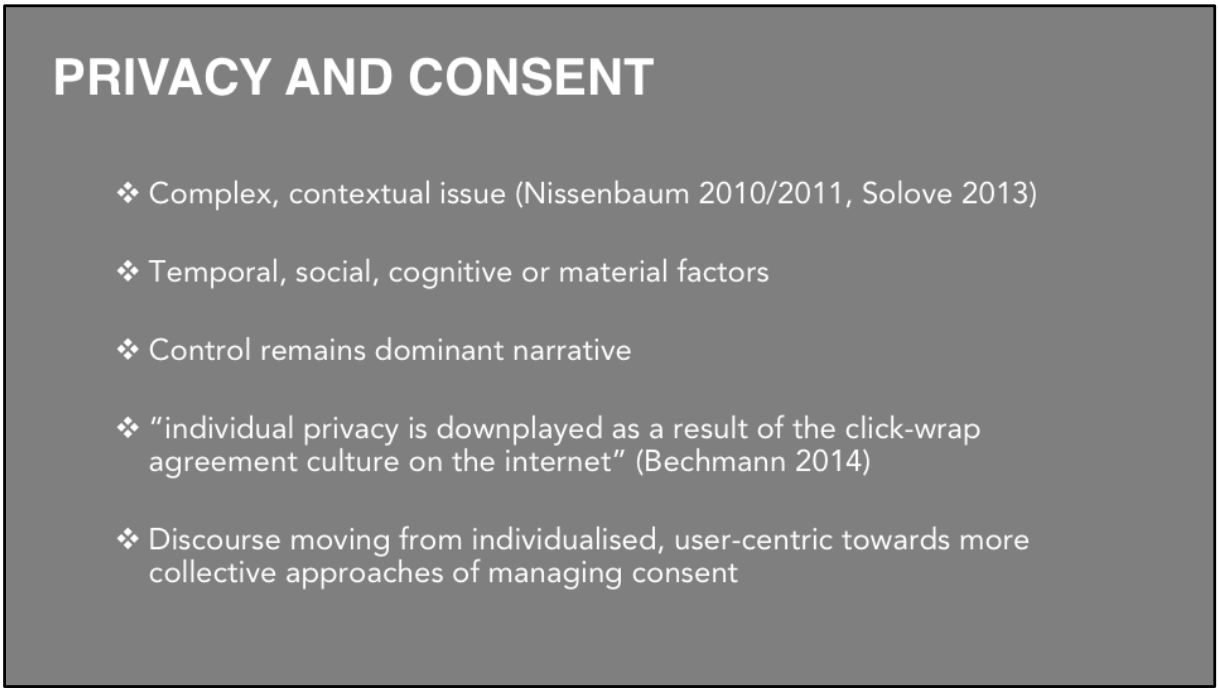
In this paper we are exploring aspects of consent in increasingly complex systems and situations - aiming to reconsider consent as more collective decision making processes beyond the current status quo of individual one-click agreements.

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

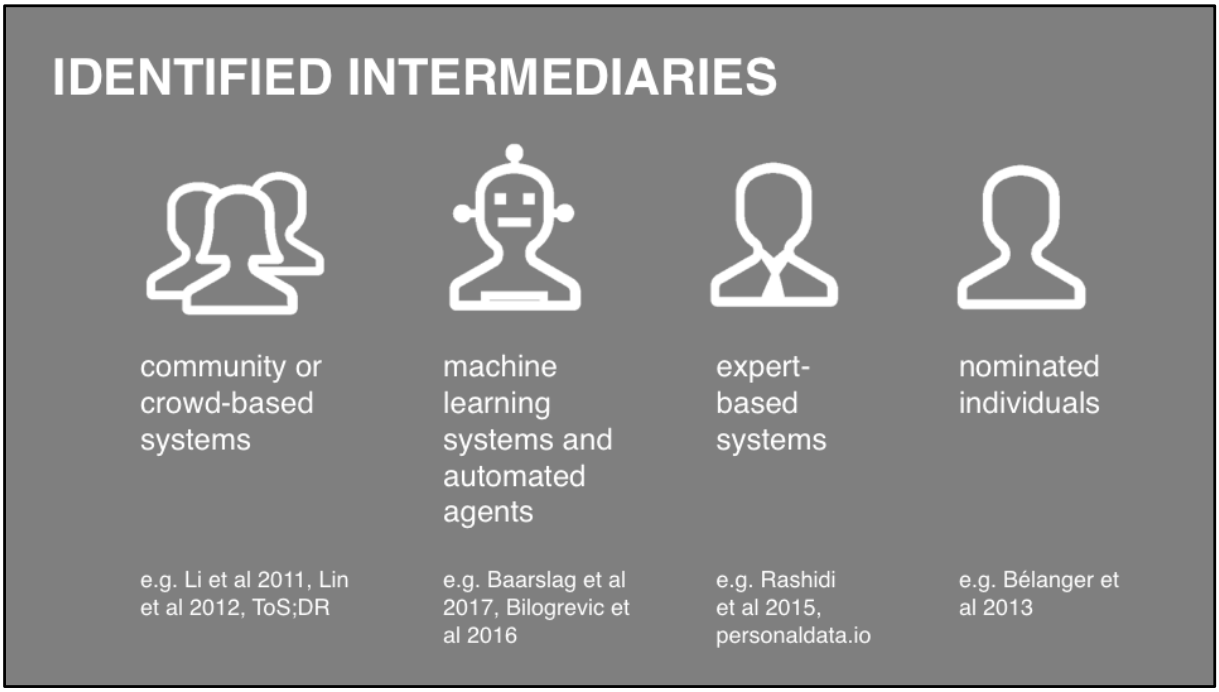
Obtaining meaningful user consent is increasingly problematic and current approaches are rooted in the idea of individual control despite growing evidence that users do not (or cannot) exercise such control in informed ways.

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 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.



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

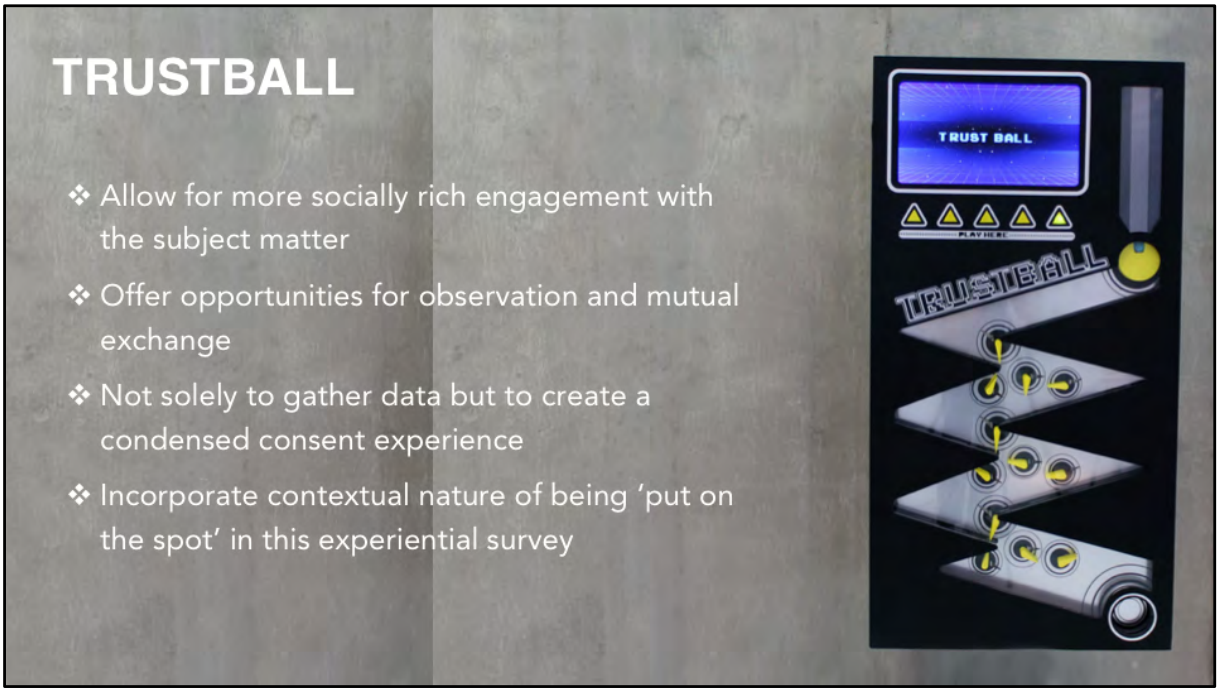
Golsteijn et al. 2015. VoxBox: A Tangible Machine That Gathers Opinions from the Public at Events.

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

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

Taylor et al. 2012. Viewpoint: Empowering Communities with Situated 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.

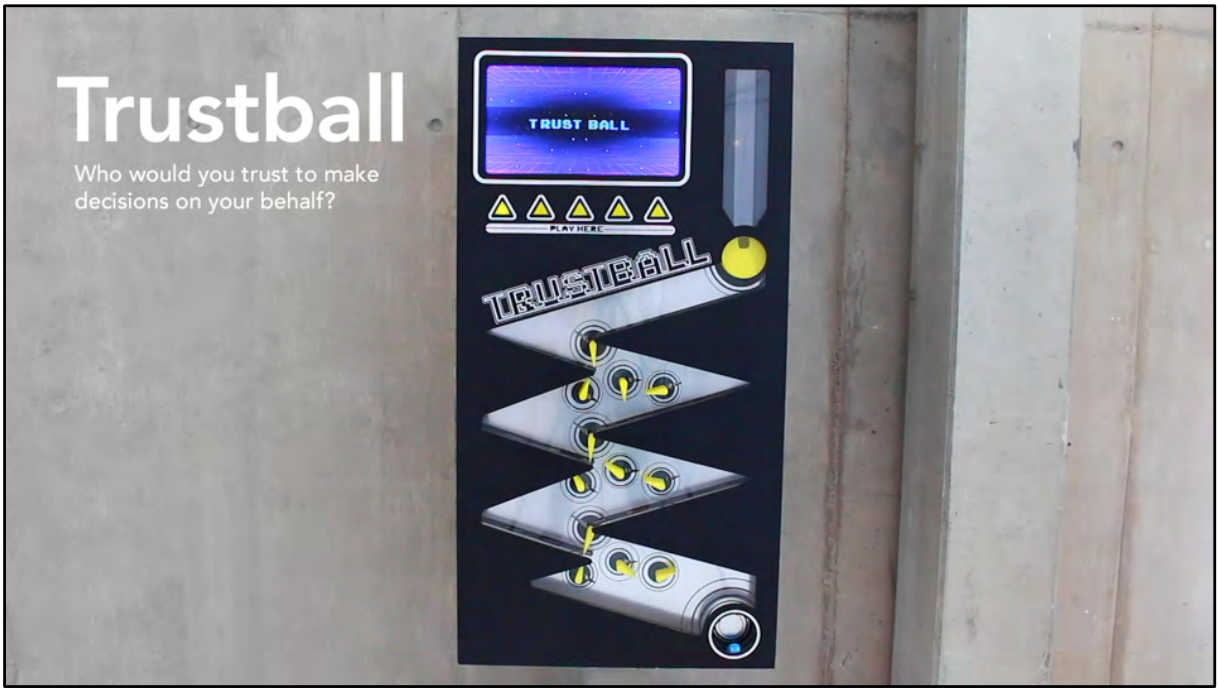


Based on previous research, we developed an engaging physical questionnaire in the form of a arcade-style game we called Trustball…

- 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



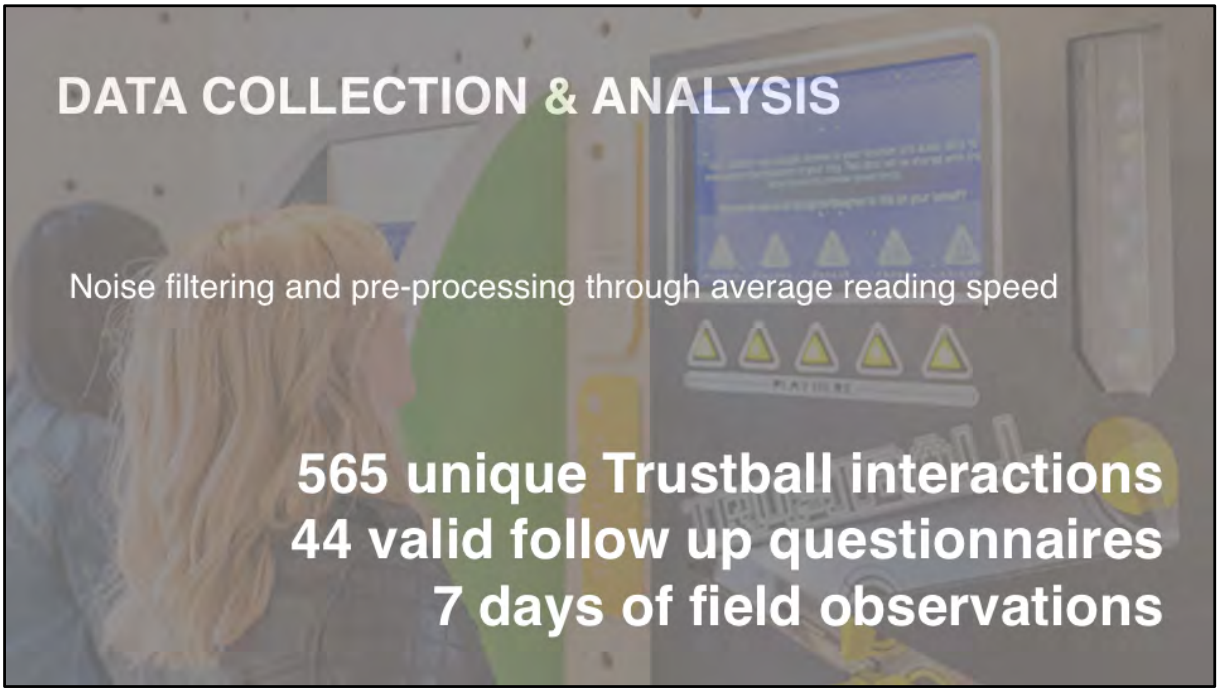
Before I go into details of our study, here a short video to explain the interactions… [VIDEO]

- 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

- 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.



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)

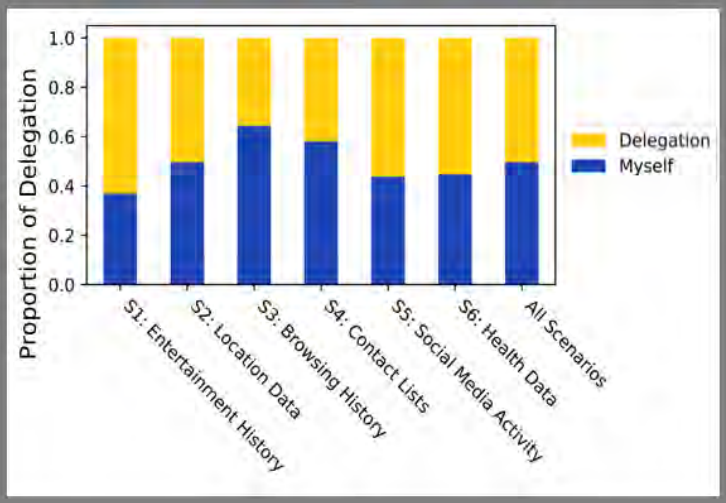
"What? No, in those things I only trust myself." (P1)
"Really, don't you trust what your doctor says?" (P2)
"Yeah, I wouldn't know if I always know best, I'd ask someone." (P3)
"I guess you are right. Maybe an expert then." (P1)

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

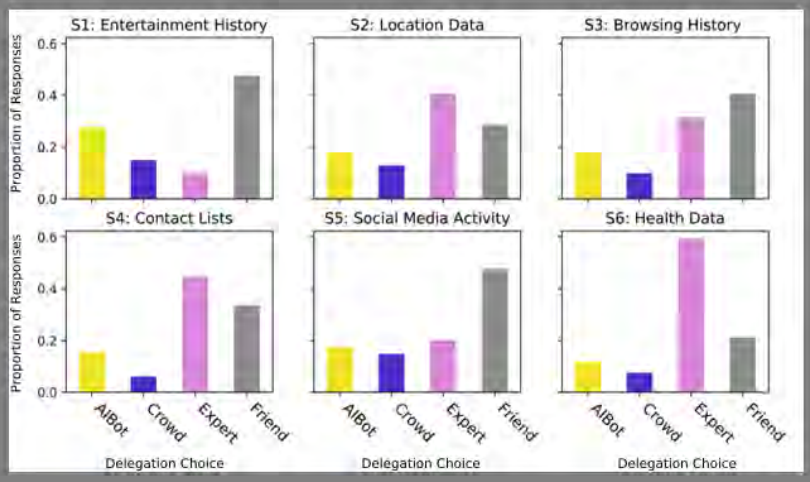
Were Participants Prepared to Delegate Decision Making?



- 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

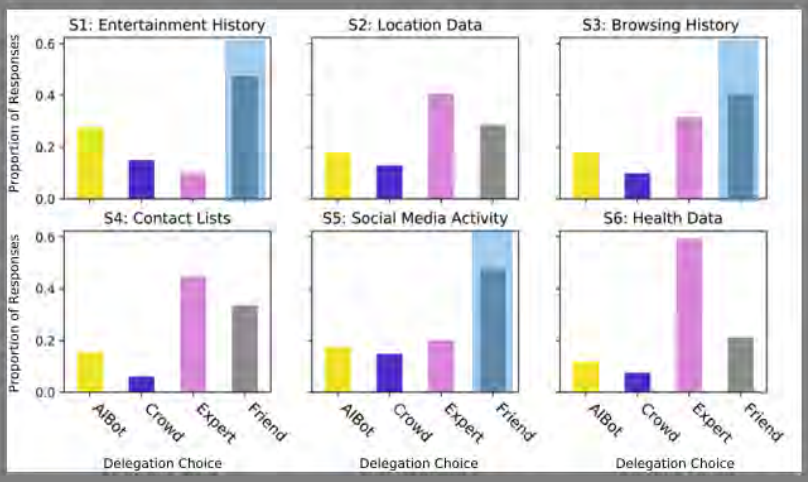
Does the Choice of Delegation Vary by Scenario?



- **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

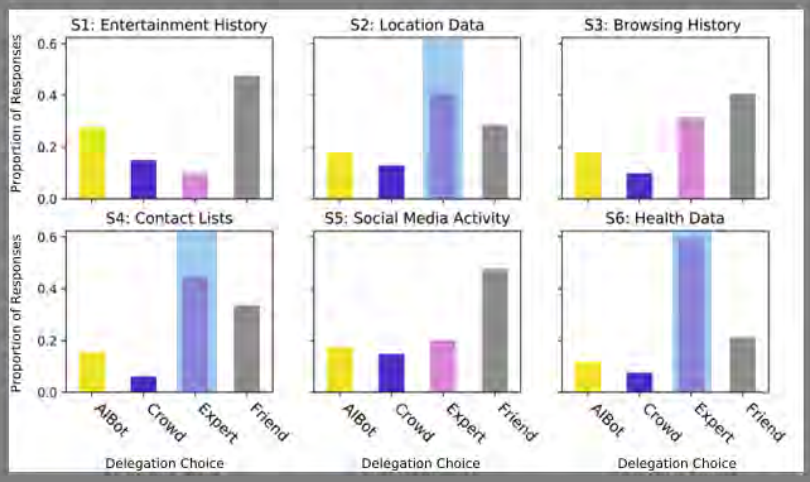
Does the Choice of Delegation Vary by Scenario?



- **When looking at delegation options per scenario**
- (excluding Myself) - Friend is the most popular delegation option for S1: Entertainment History 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

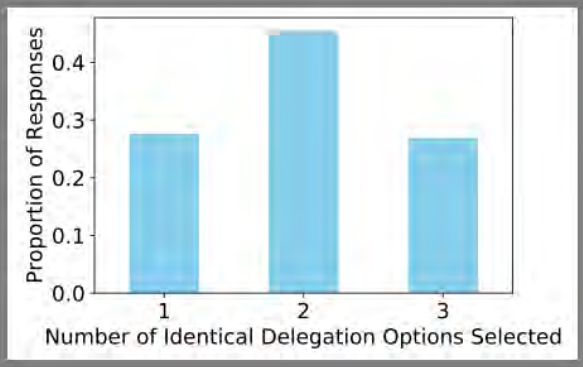
Does the Choice of Delegation Vary by Scenario?

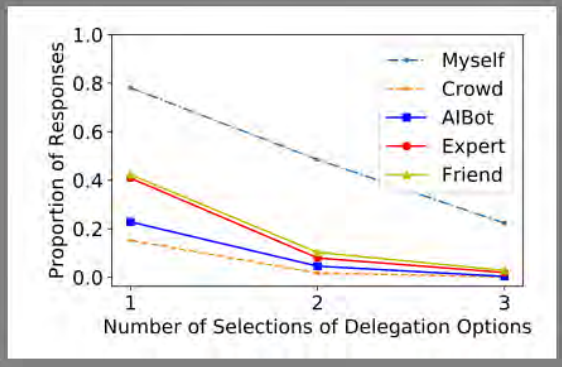


- **When looking at delegation options per scenario**
- (excluding Myself) - **Friend** is the most popular delegation option for S1: Entertainment History and S5: Social Media Activity
- **Expert** for S2: Location Data, S4: Contact Lists and S6: Health Data
- Both AI/Bot and Crowd consistently least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

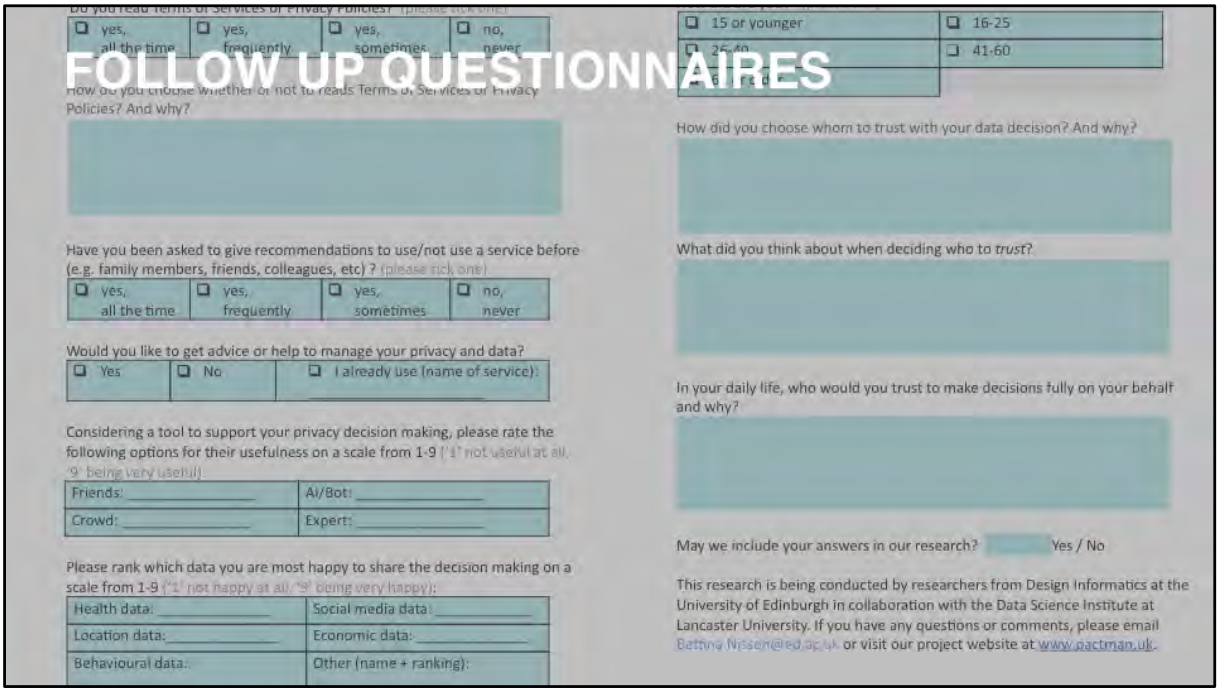
ANALYSING INTERACTIONS

Do Participants Make Consistent Delegation Choices?

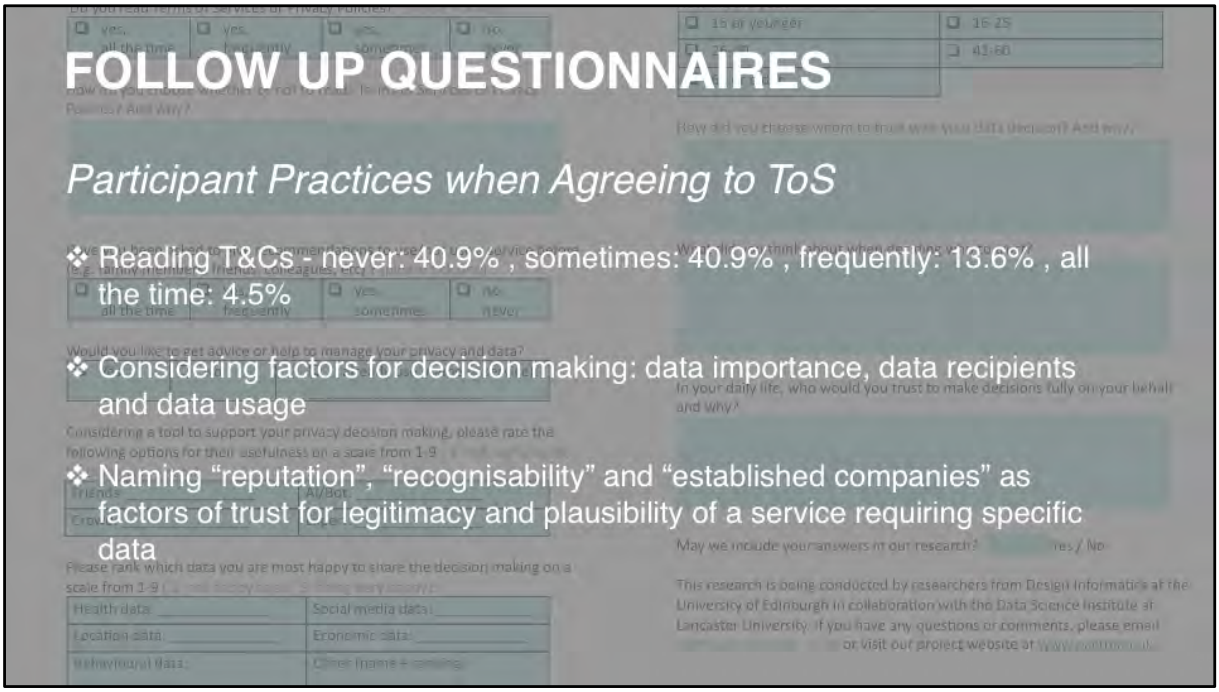




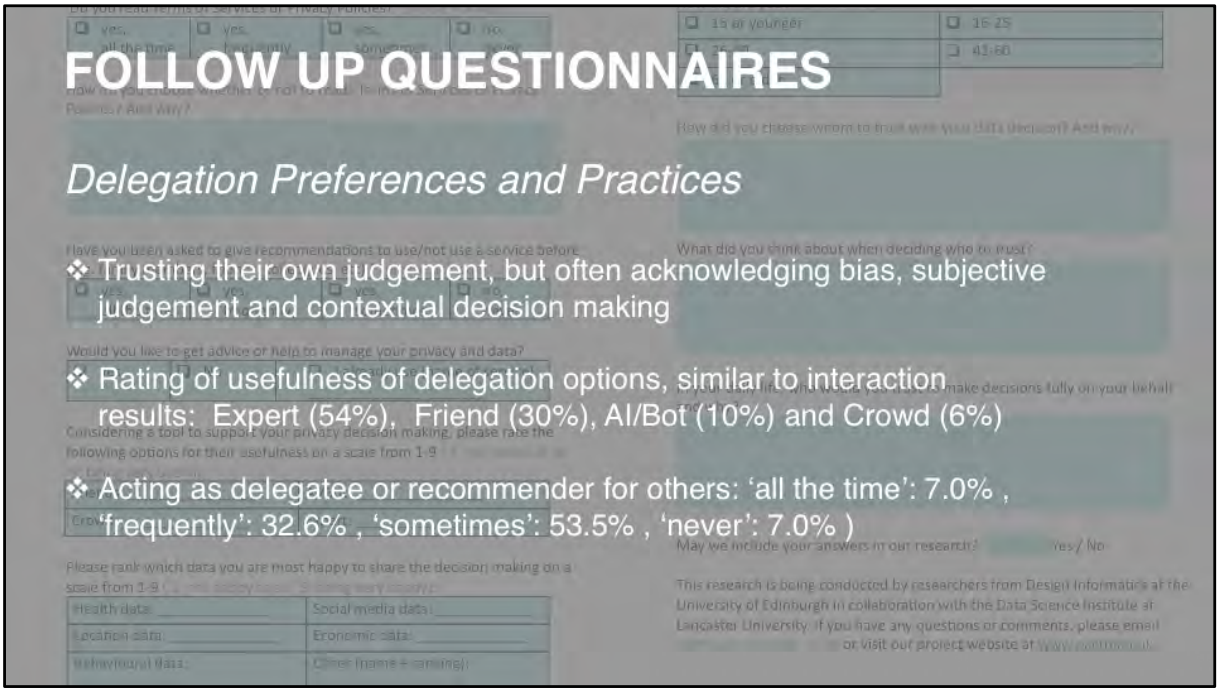
- **Tendency for participants to include two delegation options**
- Over 70% of participants selected Myself at least once (≈ 50% at least twice and over 20% three times – confirming)
- Similar popularity patterns: (1) Friend and Expert , and (2) AI/Bot and Crowd
- AI/Bot and Crowd delegation options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



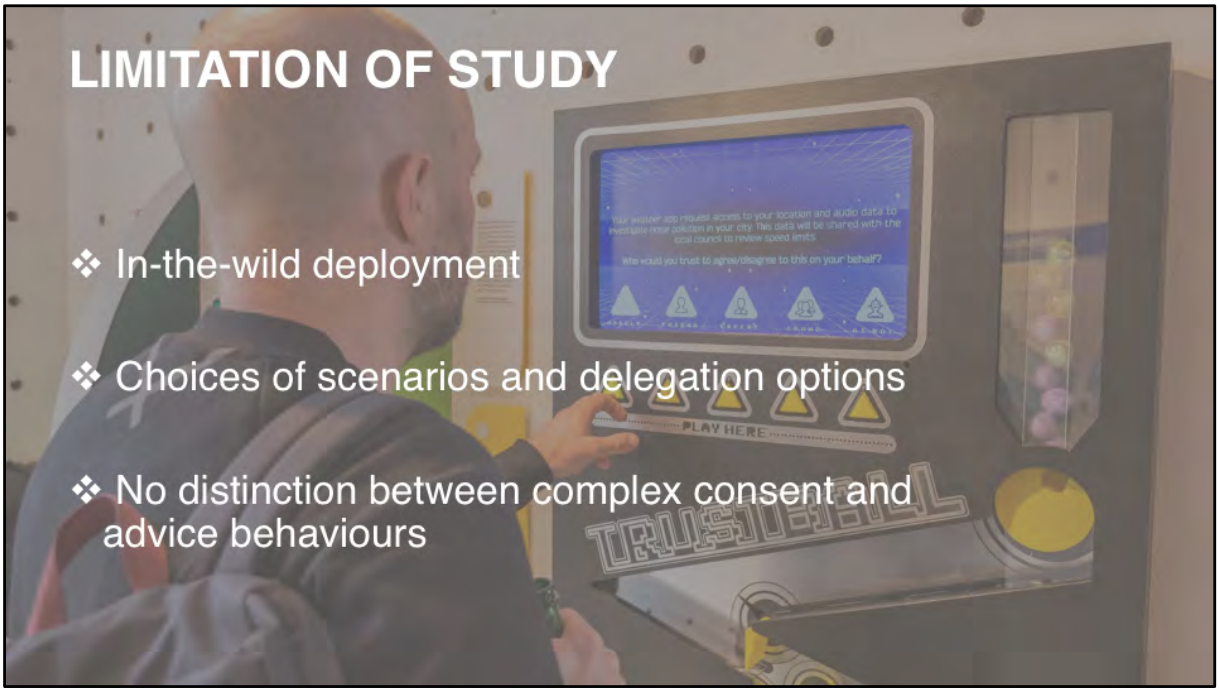
The follow up questionnaires were mostly open ended with a series of ranking and checkbox questions covering two main areas.



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



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

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 therefor 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.