

Towards Trauma Informed Data Donation of Sexual Experience in Online Dating to Improve Sexual Risk Detection AI

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ABSTRACT

Sexual risk detection AI has been touted as a scalable solution for computer-mediated sexual violence. Data donation is a user-centered approach to producing ecologically valid datasets for sexual risk detection AI: voluntarily providing personal data that is representative of risk. However, the act of donating intimate sexual experience data can itself be traumatizing. We propose Ube: a trauma-informed sexual experience data donation app for online daters that is developed jointly with sexual violence experts and care practitioners. Cognitive walkthroughs of Ube with these experts elucidated several design approaches to mitigate retraumatization during data donation, including a conversational agent and mental health checks.

CCS CONCEPTS

• **Human-centered computing** Collaborative and social computing systems and tools; Human computer interaction (HCI); Walkthrough evaluations; • **Applied computing** Psychology.

KEYWORDS

Sexual Violence, Data Donation, Cognitive Walkthrough, Online Dating, Harm, AI, Risk Detection

ACM Reference Format:

Wenqi Zheng, Emma Walquist, Isha Datey, Xiangyu Zhou, Kelly Berishaj, Melissa McDonald, Michele Parkhill, Dongxiao Zhu, and Douglas Zytke. 2023. Towards Trauma-Informed Data Donation of Sexual Experience in Online Dating to Improve Sexual Risk Detection AI. In *The 36th Annual ACM Symposium on User Interface Software and Technology (UIST '23 Adjunct)*, October 29–November 1, 2023, San Francisco, CA, USA. ACM, New York, NY, USA, 3 pages. <https://doi.org/10.1145/3586182.3616689>

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UIST '23 Adjunct, October 29–November 1, 2023, San Francisco, CA, USA

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ACM ISBN 979-8-4007-0096-5/23/10.

<https://doi.org/10.1145/3586182.3616689>

1 INTRODUCTION

Risk detection AI—the use of artificial intelligence (AI) to automatically detect and mitigate risk of various computer-mediated harms—has emerged as a scalable solution [5, 16, 22, 27] to computer-mediated sexual violence (SV). Data donation and annotation [4, 6, 12, 21] have emerged as popular approaches to provide ecologically valid datasets [3, 22] for model training of risk detection AI that represent real experiences of harm.

Data donation for sexual risk detection [20] may involve disclosure of intimate (and harmful) sexual experiences, so the very act of data donation can be traumatizing to users. We explore how to identify and mitigate adverse impacts incurred through the act of sexual experience data donation through in-progress development of *Ube*: a mobile app for donating data about sexual experiences that occur through online dating (a now-well-known context for online-to-offline SV [2, 11, 14, 28]). *Ube* is developed jointly with SV experts and care practitioners who have several years of experience directly interacting with victims and perpetrators of SV so as to translate to app design their trauma-informed practices [9, 23] to maintain comfort during the act of reporting sexual experiences.

In the following sections we introduce the *Ube* prototype and findings from six **cognitive walkthroughs** [26] to evaluate the app with SV experts in accordance with two research questions:

RQ1 *What are the harms that may occur through the act of donating sexual experience data?*

RQ2 *How can data donation platforms be designed to mitigate such harms?*

2 PROTOTYPE OVERVIEW DESIGN

Ube is a mobile application that uses a conversational agent to guide users in donating data about their recent online-to-offline sexual experience with others, such as messaging interactions, face-to-face dates, and sexual activity. Donation takes various forms including: uploading behavioral data (e.g., screenshots from the dating app, JSON files of messaging interactions), and answering multiple-choice and open-ended questions to lend context to the donated data, and self-report of experiences that behavioral data is not available for (e.g., face-to-face encounters). A semi-interactive prototype for *Ube* was first developed in Figma; we then moved to

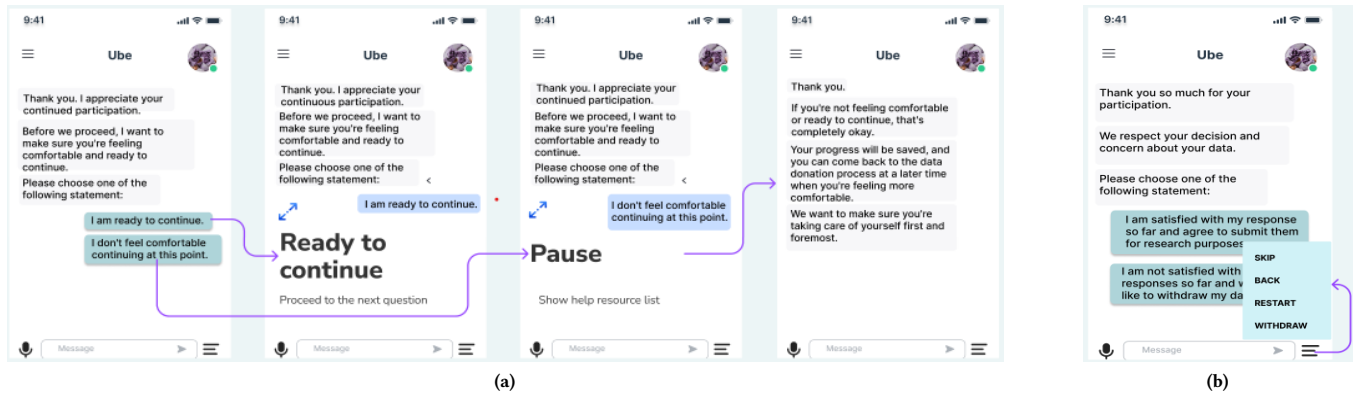


Figure 1: (A) the check-in which participants are shown before being asked questions that are most likely to be retraumatizing; (b) users can click the hamburger icon on the bottom right to skip, restart, or withdraw from the study.

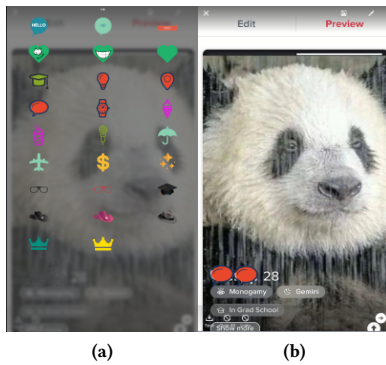


Figure 2: (a) users can manually cover the donated Tinder profile using the provided stickers; (b) part of the profile covered by two stickers.

develop *Ube* on NPM, a renowned package manager for JavaScript, for full interactivity and fidelity.

2.1 Evaluation with Sexual Violence Experts

Our design team consists of two UX design leads and six design consultants with SV expertise: one Sexual Assault Nurse Examiner (SANE), two SV shelter workers, and three SV researchers—two in psychology, and one in HCI. The design process entailed weekly meetings with SV experts to generate activity scenarios [24] articulating through text an exhaustive list of possible data donation journeys and a semi-interactive prototype for *Ube* in Figma. The prototype was then subjected to iterative evaluation through six rounds of cognitive walkthroughs using Spencer’s streamlined method [26]. Finally, each cognitive walkthrough was video-recorded, transcribed, and analyzed in Nvivo following Braun and Clarke’s thematic analysis approach [7].

3 FINDINGS

Analysis of the cognitive walkthroughs for our data donation application *Ube* revolved around an overarching theme of applying *trauma-informed approach* [15]: (R)ecognizing that trauma is common and can have a significant impact; (R)ecognizing signs and symptoms of trauma; and avoiding (R)etraumatization.

Minimizing Retraumatization During Data Donation. A notable cause of secondary harm is retraumatization; relieving stress reactions experienced from a previously harmful event when presented with a new but similar situation. This can include symptoms such as flashbacks and avoidance [8, 19, 23]. *Ube* is designed as a chatbot that scaffolds a comfortable and sympathetic environment for self-disclosure, avoiding insensitive questioning and implicit victim-blaming. We include randomly interspersed questions that prompt users to confirm they are well enough and would like to continue with the data donation cycle (see Figure 1a).

Maximizing Personal Agency During Data Donation. The loss of control over the disclosure of sexual experience can be detrimental to individuals with trauma [1, 13, 18]. Thus, our design prioritizes user agency through various affordances to control one’s donated data. These include: (1) users can skip any data donation prompt (see Figure 1b), and delete or edit past donations; (2) all donated data can be selectively covered by the user and will be automatically de-identified (see Figure 2); and (3) precautions are taken to prevent data donors from feeling labeled as SV perpetrators or victims. To the latter, we frame questions in a behaviorally specific manner without labeling anyone as a victim or perpetrator.

4 DISCUSSION AND FUTURE WORK

Our research complements prior work into the stakeholder-inclusive design of data donation journeys [6, 12, 17] through the involvement of sexual violence experts who draw on their expertise to reflect on potential traumas of donating data about computer-mediated sexual violence.

Their emphasis on trauma-informed approach in cognitive walkthroughs of our data donation app draws parallels with HCI literature on trauma-informed computing and social media [10, 25] and demonstrates the value of extending this framework into human-centered AI. Our future work involves bridging insight from SV experts with feedback from anticipated data donors through usability testing.

ACKNOWLEDGMENTS

This material is based upon work partially supported by the U.S. National Science Foundation under Grant No. IIS-2211896.

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