Harassment in Social VR: Implications for Design

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ABSTRACT

We interviewed VR users (n=25) about their experiences with harassment, abuse, and discomfort in social VR. We find that users' definitions of 'online harassment' are subjective and highly personal, making it difficult to govern social spaces at the platform or application level. We also find that embodiment and presence make harassment feel more intense. Finally, we find that shared norms for appropriate behavior in social VR are still emergent, and that users distinguish between newcomers who unknowingly violate expectations for appropriateness and those users who aim to cause intentional harm.

Keywords: online harassment; social VR; embodiment; presence; moderation

Index Terms: CCS → Human-centered computing → Human computer interaction (HCI) → Empirical studies in HCI

1 INTRODUCTION AND METHODS

Online harassment refers to a broad spectrum of abusive behaviors enabled by technology platforms [1]. Research into the prevalence of harassment on social network sites such as Facebook and Twitter has found that over two thirds of U.S. adults have seen someone be harassed online, and 41% have personally experienced some form of online harassment [2]. Although current online harassment research largely focuses on social network sites, evidence suggests that abusive behaviors are occurring in similar ways in virtual reality environments, where experiences of harassment can be exacerbated by features such as synchronous voice chat, heightened feelings of presence and embodiment, and the possibility of corporeal actions such as violations of personal space.

To better understand how to improve and safeguard peoples' experiences in social VR, we interviewed 25 VR users about their harassment experiences. We issued a recruitment survey via email to VR users in the US who had used VTime, Altspace, VRChat, or Rec Room at least once in the past 28 days. We received a total of 517 survey responses and contacted any respondents aged 18 or older who reported having or causing an uncomfortable experience in social VR (n=37). We conducted interviews until we reached saturation, resulting in a total of 25 participants. Participants were compensated for their time with a $125 Amazon gift card and were informed that their participation would remain confidential and would not impact the status of their Oculus account. 23 of our participants were men; only 2 participants were women, despite efforts to over-sample women. We employed an inductive analysis [3] to generate codes, generating an initial codebook based on recurring themes surfaced during interviews. After independently coding one transcript to pilot our codebook, we iterated on our initial codebook, resulting in a total of 49 codes. Three authors independently coded transcripts, frequently discussing codes to maintain agreement. Quotations have been lightly edited for readability.

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2 RESULTS

2.1 Definitions of 'online harassment' are subjective

Participants' definitions of online harassment were highly personal, although many participants described a similar rubric for deciding whether something was harassment or not: a behavior could be considered harassment if the person doing it continues after being asked to stop. When asked how he defined online harassment, P22 said: "Anytime you make someone feel uncomfortable. If someone asks you to stop and you just keep going, that's harassment in my opinion." P18 described situations in which a user obstructs another user's game or task: "Comments, lewd behavior, physical actions that make people uncomfortable. Getting up into somebody's face… when people come in and ruin whatever activity that you're doing. Like if I'm trying to play ping pong or basketball with somebody in Rec Room and another avatar comes up, grabs the paddle or the ball and decides to run off with it or chuck it across the room."

Participants' specific experiences of harassment in social VR largely fell into three categories: verbal harassment, such as personal insults or hateful slurs; physical harassment, such as unwanted touching or throwing objects; and spatial harassment, such as displaying graphic content on a shared screen.

	Examples
Verbal (hear)	Personal insults; hate speech; sexualized language
Physical (feel)	Unwanted touching; obstructing movement; throwing objects
Spatial (see)	Displaying sexual or violent content; visible sexual gestures

Table 2: Types of harassment in VR as described by participants.

Some users are more vulnerable to harassment than others. Many participants felt that certain types of people—namely, women, children, people of color, and people with strong accents—were much more likely to be harassed in VR than others, due to vocal cues and avatar appearance. Although social VR offers fewer identity cues than other online contexts (such as social media sites), the identity signals that are available—e.g., dialect or gender—are powerful. P18 said: "Someone came up to somebody that was a female—or at least had a female voice—in a room of probably 20 people or so, and went right up to her avatar and pretended to [perform a sexual act on] her."

Users may choose specific avatars to avoid harassment. Unlike voice, users do have control over the appearance of their avatars. P11, who is black, described different experiences when using social VR applications with a black avatar versus a white one. When playing role-playing games (RPGs), P11 chose to use a black avatar to more closely reflect his actual appearance. However, when using social VR applications, P11 ultimately decided to use a white avatar, specifically to avoid racist harassment: "Since I'm going to be playing with a bunch of Americans anyway—and I can choose to get treated like a black person or not get treated like a black person—I'm probably going to choose not to get treated like a black person."

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2.2 Embodiment and presence intensify harassment

P16 described harassment in VR as markedly different and more intense than similar experiences in gaming environments, where players only have live chat: "In VR, everything is live. You and that person occupy the space at the exact same time—with live feedback. You have the ability to literally look that avatar in the eye. You know what I mean? I think literally being able to see the person right in front of you has a sense of presence and can really hurt somebody's feelings." P2 agreed: "When you're in VR, you still feel like you have a sense of your body and your placement—so a bunch of people crowding you can actually make you feel a little bit anxious, even though it's all on VR."

Similarly, some participants described feeling verbal harassment more intensely via voice chat than they would when reading text on a social media site. P5 said: "I just think that a lot more information carries over in voices. Voice is a lot richer then text. I personally would find it a lot more creepy and scary, and I'm not sure exactly why—it's the same information. I think it would feel more confrontational. Voice is one step closer to someone actually being in front of you." P9 felt most affected by the real-time nature of synchronous voice chat. He said: "It's more immediate. You are in that environment, and you are forced to participate in it in real time." Another participant (P24) described harassment in social VR as feeling more personal than harassment on social media sites because it feels like being in public: "You feel like you're not just behind the computer screen in your room. You're out there—almost a feeling of being in public."

Embodiment and presence may also increase empathy and accountability. Some participants felt that embodiment and presence could reduce, rather than exacerbate, harassment experiences by increasing empathy for other users (a finding supported by academic research, e.g. [4]). P3 said: "Virtual reality is a more humanizing experience. You're not just interacting with a flat picture and typed-out words. You're dealing with a human-looking avatar with three-dimensional presence that's interacting with you in real time. I think it's harder for people to be unresponsive to that." P2 agreed: "You don't just have a sense of the person through their voice—you have a sense of the person through their mannerisms, through the way they move their body, through how the avatars' heads or hands move. You have more social cues to work from—you have more levels of interaction with a person. That intensifies the interaction in VR and makes it more important to feel comfortable and to feel safe."

2.3 Norms for appropriate behavior in VR are unclear

Social VR applications are still relatively new, and each application has a different set of rules and cultural norms users are expected to follow. P5 said it had never occurred to her to look at the formal rules, "because I doubted I would break any." Instead, most participants described relying on "common sense" to determine the boundaries for appropriate behavior. P25 said: "It's just, like, craziness. It's kind of like the Wild West. There's no regulation, there's no moderation. People are just kinda doing their own thing." Participants who had been using social VR for longer described initially appreciating the lack of formal rules or guidelines, but eventually choosing to invest in a particular community's success by helping to establish pro-social norms. Said P12: "A year ago or more, I felt a certain kind of freedom that came from just going into a virtual space and not feeling any sort of responsibility or a need to adhere to cultural standards or social norms. I think maybe my experiences have made me think more about virtual spaces. I guess maybe, the more time I spend in social VR, the better virtual citizen I'm becoming."

Moderators and early adopters help establish norms for appropriate behavior. Participants emphasized the importance of dedicated community members—whether they be formal moderators or simply volunteers—in establishing pro-social norms in VR, especially as communities continue to fluctuate in size and membership. P20 reflected on the importance of 'seed users': "Small changes draw different users—and they are shaping what that community looks like. Someone who shows up and doesn't like that experience is going to leave. The first users, the newcomers… that first core of the few thousands of users will drive the experience of what it becomes later." P12 said that the more time he spends in a specific virtual place, the more responsibility he feels for its success: "The more you go to a virtual place, the more it becomes like a real place. The more people you know, the more responsibility you feel for maintaining cultural norms and community standards."

Users distinguish between naïve newcomers and those who intentionally cause harm. As new and more accessible devices are released, existing social VR applications often see an influx of new users, who are not yet acclimated to the norms of the space. Many participants made a distinction between new, naïve users who unintentionally violate norms and users who cause intentional harm. P12, who is a moderator in AltspaceVR, prefers to communicate directly with violating users: "In almost every case where I've done that, they didn't even understand [the rules]. They were kind of just dropped into something not understanding. Taking the time to personally explain that to someone can go a long way." P15 described the need to give users the benefit of the doubt while norms are still emerging: "You should get a second chance or even a third chance. People can learn to behave themselves, I think." Similarly, P13 made exceptions for people who may have made a one-time mistake: "Some people may look for people to make fun of… but also sometimes, people just aren't in a good mood, and they'll say stuff you don't like."

3 Conclusion

Virtual reality environments present unique challenges for managing harassment and other abusive behaviors. We find that experiences of online harassment in social VR are highly personal, and can be intensified by embodiment and presence. These results suggest that users could benefit from more granular controls, allowing users to establish and enforce personal boundaries. We also find that norms for appropriate behavior in social VR spaces are still emerging; future research should explore strategies for establishing concrete expectations and norms, particularly as social VR applications gain in popularity and experience high volumes of new users. Finally, we find that many social VR users are committed to supporting their favorite communities. This result suggests that the development of community-driven moderation tools could empower communities to self-govern according to their own interpretations of appropriate behavior.

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