"My Audience Gets to Know Me on a More Realistic Level": Exploring Social VR Streamers' Unique Strategies to Engage with Their Audiences

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ABSTRACT

Social Virtual Reality (VR) platforms are increasingly transforming online social spaces by enhancing embodied and immersive social interactions. A growing body of HCI research has focused on various interaction dynamics *within* social VR spaces. However, how social VR users also endeavor to share their activities *outside* the social VR platform, such as on 2D live streaming platforms, is an increasingly popular yet understudied phenomenon that blends social VR and live streaming research. Based on eight interviews with experienced social VR streamers, this paper empirically investigates social VR streamers' streaming practices and strategies to engage with their audiences as compared to non-VR streaming. We provide one of the first empirical evidence of how social VR streaming can creatively combine immersive VR activities with interactive live streaming. This informs future research on understanding and designing future platforms to better support these complicated social dynamics blending both virtual and physical worlds.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in collaborative and social computing**.

KEYWORDS

Social Virtual Reality, Live Streaming, Audience Management, Online Social Interaction

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1 INTRODUCTION

Social Virtual Reality (VR) platforms (e.g., VRChat, Meta's Horizon Worlds, and RecRoom) are spaces where multiple users can interact with one another typically through VR head-mounted displays and immersive 360-degree virtual content in 3D virtual spaces [6, 9, 13, 30]. They are often praised for dramatically transforming online social interactions through enhanced embodied and immersive social experiences via full- or partial-body tracked avatars (i.e., one's avatar body actions correspond to one's physical body actions in real-time); predominate voice communication; body language and gestures; and simulated immersive activities [9, 30, 37]. As such, a growing body of HCI research has focused on various interaction dynamics **within** social VR as a novel, embodied online social space [1, 2, 8, 23, 45, 46]. However, how social VR users also endeavor to make their activities and experiences in immersive social VR spaces available and viewable **outside** the social VR platform (e.g., through streaming to their audiences on 2D live streaming platforms; see Figure 1) seems to be an increasingly popular but understudied new phenomenon that blends and expands the current landscape of both social VR and live streaming research.

Indeed, we have seen a steady growth of streamed VR content on popular streaming platforms such as YouTube and Twitch (e.g., [39]), as well as more detailed guidelines and tutorials regarding how to set up VR streaming (e.g., [18]). In contrast to traditional live streaming that typically requires the streamer to sit in front of a computer/camera and interact with viewers via microphone, keyboard, and mouse, social VR streamers often stand up and move around while wearing a VR headset to fully immerse themselves in the VR space in order to generate the streamed content (Figure 1) [43]. These streamers also seem to face higher technical requirements and challenges than traditional live streaming by blending both physical and virtual worlds [43] and involving multiple stakeholders across these worlds. Such stakeholders include streamers in

Figure 1: An example of streaming VR activities and experiences to 2D screen for online audiences outside VR (source: VR Fitness Insider)

social VR, audiences on streaming platforms, bystanders in social VR, and moderators both in social VR and on streaming platforms.

This work thus represents our first endeavor to empirically investigate this emerging form of online social experiences. Based on eight in-depth interviews with experienced social VR streamers, we specifically explore the following research question: *RQ: What are social VR streamers' unique strategies to engage with their audiences, especially compared to streaming non-VR content?* In doing so, we contribute to HCI research at the unique intersection of live streaming and social VR. We provide one of the first empirical evidence of how social VR streaming can creatively combine immersive social VR activities with interactive live streaming practices, which leads to more embodied and physicalized streamer-viewer interactive dynamics to further engage with online audiences. These insights may inform future research on how people can experience and engage in immersive social spaces such as live streaming and social VR in new ways and how to design future platforms to support these complicated social dynamics blending both virtual and physical worlds.

2 RELATED WORKS

The Central Role of Streamer-Audience Interaction in Understanding Live Streaming. Compared to traditional broadcasting and pre-recorded videos that can be cut and edited, live streaming is a unique interactive media form that is simultaneously recorded and broadcast in real time. It combines both public broadcasts of high-fidelity live audio and video through the Internet and low-fidelity text-based communication channels for streamers and viewers [17]. Popular live streaming platforms and services such as Twitch.tv, YouTube Live, and Facebook Live have increasingly become a part of pop culture, attracting millions of viewers and streamers. This growing social phenomenon of live streaming has thus led to a large body of HCI research on live streaming with diverse foci, ranging from cultural heritage [14, 26, 32] and digital economy [19, 42] to content moderation and privacy concerns [25, 35, 36, 40, 44]. In particular, how streamers and viewers interact with each other and how streamers strategically manage and engage with their audiences has become a key focus [5, 11, 14, 16, 17, 24, 33, 41, 42].

Previous research has collectively highlighted two key strategies that live streamers use to manage or engage with their online audiences. First, due to the real-time nature of contemporary live streaming, verbal communication through synchronous text or voice chat to establish connections with viewers still serves as a primary strategy for streamers to engage with their audiences [17]. For instance, streamers may intentionally pace their conversations with viewers based on digital gifts or donations they receive from viewers [28, 42, 47]. Streamers also seem to adapt their chat management method based on diverse audience criteria and considerations [34, 41]. Examples include intentionally balancing general audience with interacting with a specific viewer, prioritizing certain viewers or topics, and choosing to engage with a random viewer [34, 41]. Second, streamers rely on a range of visual system features to non-verbally interact with their viewers in varied ways. Examples include the use of emoticons [34], channel-featured gift designs [21], interactive UI overlays like poll results [5], and donation indicators [22]. These tools thus significantly supplement how streamers can engage with viewers by facilitating more immediate and specialized feedback on their audience's collective moods and attitudes across multi-model channels within or outside the streaming platform [5, 21, 34].

While these works provide a comprehensive understanding of streamers' existing efforts to engage with their viewers, they have also collectively pointed to a significant challenge: contemporary live streaming still lacks ways for streamers and audiences to convey rich social cues beyond text and visuals on a 2D screen [22, 33]. As online social spaces evolve towards more natural embodied interaction, research on live streaming has also begun to investigate more nuanced and immersive methods of fostering streamer-viewer interaction and audience engagement. Such efforts tend to focus on introducing physiological interactions to help streamers engage with audiences beyond verbal or non-verbal communication. For example, Robinson et al.'s work used viewers' heart rates to affect the sound, lighting, and difficulty of a gaming stream [22, 33]. And Lessel et al.' research demonstrated novel methods that allow viewers to influence the streamers' environment (e.g., room lighting) and even the streamers' bodies (e.g., vibrations on their forearms) [22]. In line with this emerging research agenda, our work is motivated to investigate social VR streamers' unique strategies to engage with their audiences, as social VR streaming is becoming an emerging new landscape to innovate how people can conduct, experience, and engage in live streaming in a more embodied and immersive way.

Social VR Streaming as an Emerging New Online Landscape. As highlighted earlier in this paper, with the growing popularity of various social VR platforms such as VRChat, the prevalence of social VR streams on popular streaming platforms like YouTube and Twitch is also increasing. Yet, why and how people stream their activities and experiences in social VR seems to be an emerging but understudied question. Indeed, only a small body of HCI work has begun to investigate VR streaming as a unique online landscape, which merges real-time streamer-viewer interactive dynamics with immersive VR experiences [29, 38, 43]. These works have also shed light on how this type of streaming differs from traditional live streaming in terms of the streamers' perspective. For example, traditional live streaming typically requires the streamer to sit in front of a computer/camera and interact with viewers via microphone, keyboard, and mouse. In contrast, VR streamers often stand up

and move around while wearing a VR headset to fully immerse themselves in the VR space in order to generate the streamed content (Figure 1) [43]. Additionally, traditional live streamers must navigate sophisticated technical setups for their streaming practices (e.g., webcam, microphone, and environment background) [11, 17, 24, 28, 42, 47]. VR streamers must navigate even more complex technical requirements, such as setting up VR headsets and handheld controllers, installing specific streaming software (e.g., OBS), defining the area for physical movements while wearing the headset, and connecting to their Twitch account [18].

As such, for VR streamers, creating content for their channel becomes a much more embodied practice that actively involves their full-body movements (e.g., dancing in social VR for viewers to watch) while managing multiple VR and non-VR technologies. Similar to previous research on the difficulty of engaging co-located non-VR users into VR users' activities [15, 20], VR streaming also presents the unique challenge of seamlessly integrating disparate VR and non-VR experiences in live streaming, such as doing social activities in VR space *while managing* chats on Twitch. For instance, Wu et al.'s analysis of 34 streaming videos on Twitch found that VR streamers face challenges in establishing emotional connections and maintaining streaming flow due to technical problems and difficulties with transitioning between physical and virtual environments [43]. Indeed, when streamers wear the VR headset, they cannot directly control the streaming content or interact with viewers on Twitch chat. Yet, Wu et al.'s [43] work only focuses on analyzing streaming videos, not streamers themselves, and therefore may not reflect VR streamers' own perceptions and solutions to manage and mitigate such challenges. This also leads to unanswered questions regarding how streamers may leverage novel VR technologies and social VR platforms to innovate how they produce content and engage with viewers in new ways. Therefore, we aim to collect first-hand empirical evidence by directly interviewing experienced social VR streamers to explore their unique strategies to navigate these challenges and engage with their viewers.

3 METHODS

Recruitment and Participants. To recruit participants who have live-streamed themselves engaging in social VR spaces (e.g., VR-chat, RecRoom, and Horizon Worlds), we first identified popular social VR streamers on Twitch, one of the biggest and most popular live streaming platforms. We then invited them to participate and to recruit other social VR streamers for participation, i.e., snowball sampling. We then interviewed all social VR streamers who were willing to participate from October to November 2023 (N=8). Interviews lasted 61 minutes on average. Participants were paid with a $20 gift card after they completed the interview. Although our study's focus on the unique population of social VR streamers results in a small sample size, our participants represent a diverse array of streaming experiences, genders, sexualities, ages, and races. Table 1 summarizes participants' demographic information of their actual offline identity and their social VR streaming experiences. We did not include the number of their followers or subscriptors to protect their identity and privacy. It is important to note that seven out of eight participants confirmed that they also actively streamed other non-VR content such as video games, art, and 3D

modeling. Their rich experiences in streaming both social VR and non-VR content thus helped us further unpack what makes social VR streaming a unique context that requires novel strategies to engage with viewers.

Interviews. Before the interviews, we provided all participants with a consent document via either email or Discord message per participant preference. We did not collect identifiable information (e.g., offline name) to protect participant privacy. Upon consent, interviews were then conducted via text or voice chat on Discord or Zoom based on participant preference. Interviews began with introductions, basic demographic questions, and questions regarding their level of experience with social VR platforms (e.g., VRChat, RecRoom, and Horizon Worlds) and live streaming generally. Then, participants were asked questions about their current practices and strategies to stream their activities and experiences in social VR spaces as well as how they interact with their audiences, moderators, and other people in social VR while streaming. They were also asked to freely reflect upon any type of social or technical challenges they face when streaming in social VR spaces. After that, they were encouraged to offer suggestions for better designing future VR and streaming technologies to address said challenges to support and innovate social VR streaming practices. Examples of the aforementioned interview questions include: *What kinds of content do you stream in social VR? How do you interact with people who watch your social VR streams? How, if at all, do you feel that your interaction with people who watch your social VR streams is different from your interaction with people who watch your non-VR streams? How, if at all, do you manage viewers of your social VR streams differently from those of your non-VR streams?*

Data Analysis. After the interviews were complete, recordings were transcribed for data analysis. We then utilized a thematic analysis approach [3, 4] to conduct an in-depth inductive qualitative analysis of the collected data. Following Braun and Clarke's [4] detailed guidelines for thematic analysis, the first author closely read through the participants' transcribed narratives line by line to identify information relevant to this study's research question to gain a full picture of what social VR streamers usually do to engage with their audiences. The first author then began an iterative coding process by assigning preliminary codes to identified information. Then, four authors combined the identified codes, eliminated redundant codes, categorized codes into thematic topics related to our research question, and developed sub-themes. They also continued to discuss, integrate, and refine themes and sub-themes to streamline social VR streamers' unique strategies to engage with their audiences to best capture and represent our findings in relation to the research question. Next, all authors collaborated to refine these themes further and name the final set of themes along with identifying the most compelling quotes as examples [4].

4 FINDINGS

Using quotes from participants' own accounts, this section highlights three novel strategies that social VR streamers have developed to engage with their audiences by leveraging social VR's unique interaction settings and technological features.

P#	Gender	Age	Sexuality	Ethnicity	Social VR Platform Streamed	Streaming Platform	Other Non-VR Content Streamed	Experience of Social VR	Experience of Social VR Streaming
P1	Man	25	Straight	Hispanic	VR Chat	Twitch	N/A	5 years	4 years
P2	Transgender	26	N/A	White	VR Chat	Twitch	Video Games	3 years	2 years
P3	Woman	26	Bisexual	N/A	VR Chat	Twitch	Video Games & Online Commentary	6 years	2 years
P4	Man	18	Straight	Asian	VR Chat	Twitch	Video Games	3 years	2 years
P5	Woman	22	Bisexual	White	VR Chat	Twitch	Video Games	1.5 years	10 months
P6	Man	33	Bisexual	Black	VR Chat	Twitch & YouTube	3D Modeling & Video Games	6 years	3 years
P7	Non-Binary	36	Bisexual	White	VR Chat	Twitch & YouTube	Art & Video Games	1.5 years	3 years
P8	Gender Fluid	26	Demisexual	N/A	VR Chat	Twitch & YouTube	Video Games	2 years	5 months

Table 1: Participants' offline demographics & online social VR streaming experiences. *N/A means participant information not provided.*

4.1 Strategy 1: Actively Tracking Full-Body Movements and Facial Expressions in Real Time to Naturally and Intuitively Engage with Viewers

As mentioned earlier in this paper, verbal communication through synchronous text or voice chat is still considered a primary strategy for traditional live streamers to manage and interact with their audiences [17, 41]. In contrast, our social VR streamers unanimously identified actively tracking full-body movements and facial expressions in real time as the most crucial strategy for them to engage with their viewers. Participants like P8 believe that this strategy enables them to naturally and intuitively express themselves to engage with their viewers without being distracted or interrupted to type or talk as in traditional live streaming: *"Because people can see and understand a lot of my body movements, I express a lot more with my body. As a result, I can show more about my expressions or reactions"* (P8). P1 added, *"as opposed to stream non-VR content, I can react more animatedly with my movements in VR as I have more hand movements and hand communications instead of just talking."* Indeed, when they streamed social VR content, almost all of our participants used full-body trackers. For them, using their physical body movements by leveraging social VR's unique focus on embodiment is the key to effectively communicating and engaging with their streaming audiences in two ways. On the one hand, *"instead of just talking,"* they can express themselves *"more animatedly."* On the other hand, their viewers can *"see and understand"* them without asking questions through chat.

Participants also highlighted that tracking their full-body movements could foster a more physicalized sense of social interactions between them and their viewers. For example, streamers could "physically" react to viewers' comments or suggestions while streaming in social VR. P2 revealed, *"Compared to non-VR streaming that mainly focuses on chat, in social VR I can achieve another level of interaction with my viewers by taking them to travel through a world or interact with certain objects. For example, there are some maps where you can use coffee makers to make drinks [...] I just discuss with my viewers to figure out what sort of drink we want to make and then I make it for them."* Here, P2 points out how social VR streamers' bodily movements can blend verbal discussion and physical actions to actively engage with their viewers. In doing so, viewers can witness the tangible outcomes of their interactions with the streamer instead of merely receiving a textual or verbal response, such as seeing the streamer make a drink based on their collaborative discussion.

Figure 2: An example of face tracking in social VR streams

Several participants take full-body tracking even further by adding facial tracking to support unique emotional interactions with their viewers (Figure 2). For them, sharing more nuanced emotions is crucial to engaging with audiences in social VR streams. P1 and P6 both emphasized: *"I use [avatar] models that are more expressive in their faces, and I love making silly faces when my audience say something amusing. This really helps me to befriend them (audience)"* (P1) and *"face tracking adds a whole new perspective to my VR stream. It makes me look genuine, and it really helps me to sell real emotions"* (P6). For both participants, facial tracking allows them to communicate with their audiences in a way that closely resembles offline, face-to-face interactions rather than through text chat or emoticons, such as using their avatar face to make silly facial expressions. P8 then summarized, *"I felt social VR is a tool-ready and social inclusive platform, where I can freely show myself and just speak my heart out. Surprisingly, that resonates with a lot of people, and they have shown a lot of support for these streams."* As P8 suggests, how social VR streamers track their body movements and facial expressions in real-time often makes them *"look genuine,"*

which further helps them engage with and even *"befriend"* their viewers.

4.2 Strategy 2: Leveraging Novel Camera Control to Bridge Streamers' Immersive Experiences in Social VR with Viewers' Experiences on Streaming Platforms

Another insight from our study is that social VR streamers have developed novel camera control as an important audience engagement strategy to address the challenge of simultaneously navigating between immersive VR spaces and 2D non-VR spaces, e.g., streaming social VR activities to Twitch while also interacting with viewers on Twitch . As P8 points out, *"The (camera) angle that you use, and the way you position it can really change the mood that you're conveying to the stream. It (camera manipulation) is definitely the one I spend the most time and one of the most important aspects of my streaming."* For participants like P8, creatively controlling and interacting with the camera while in social VR is the key to bridging streamers' immersive experiences in social VR and viewers' experiences on streaming platforms such as Twitch.

P3 echoed this understanding, *"I have a lot more freedom in VR than I do out of VR...For example, I can just grab the camera and move around with my audience. I would say the best word to explain it is that you can be a lot more parasocial with your chat."* P5 gave another example, *"Let's just sit here and chat. Look at the pretty trees. Look at the pretty moon behind my head."* For both P3 and P5, compared to traditional live streaming, social VR streamers have the freedom to directly manipulate and reposition the camera in VR spaces by moving their head. In doing so, their viewers also move around and become immersed in the social VR space by directly following the streamer's virtual body in social VR (e.g., *"I can just grab the camera and move around with my audience"*). This thus seems to foster intimate and personalized interaction dynamics between streamer and audience for better view engagement. However, other participants such as P4 and P8 warned that using this strategy would also require careful consideration of viewers' comfort level to prevent VR-induced motion sickness (e.g., *"We usually have software for third-person camera or custom cameras [...] just making things cool and comfortable to watch."* - P4).

Additionally, other participants highlighted how physically interacting with the camera itself can be a novel way to engage with their audiences emotionally. P6 explained this method, *"When they're bullying me, I'll turn around, slap the camera, and say, 'No, silence, chat. Be nice.'"* He also described "drowning" the audience by humorously putting the camera underwater. Similarly, P1 mentioned, *"When they (audience) say something silly or ask a silly question, I usually just move the camera right in front of my face and make a big silly face."* Again, due to social VR's unique focus on immersive social experiences, directly talking to and physically interacting with the in-world camera in social VR gives viewers a first-person perspective to experience the streamer's actions themselves. The camera thus becomes a physical proxy for audience participation that goes beyond conventional chat channels in traditional live streaming and allows streamers to directly engage with their audiences on 2D streaming platforms while still staying immersed in social VR spaces.

4.3 Strategy 3: Creatively Embodying, Customizing, and Roleplaying VR Avatars to Build a More Realistic Understanding between Streamers and Viewers

Compared to traditional live streaming, our participants also acknowledge that creatively embodying, customizing, and roleplaying their avatars in social VR is a crucial strategy to make their viewers really get to know them *"on a more realistic level"* (P7) to foster engagement. P7's account thus well summarizes this importance: *"Whenever I'm doing normal streaming, people are just watching me doing normal reactions and funny jokes. But whenever I do VR streaming, I feel like my audience gets to know me on a more realistic level."* Indeed, P7 further elaborated, *"They enjoy watching me get scared, because they see my real reactions. They like watching me just run around. And for them, I think it's a way for them to be closer to me, to 'hang out,' than it would be to be like if I was just playing a video game [...] I feel like my VR streams are more unique to them in that experience, where they can actually request little things that you can only get in social VR, like changing a model. I feel like they get my movements and how I interact with other people, I feel like it's a value to them, because they can see [...] a little more authentically me."* In this sense, fully embodying one's avatar in social VR not only makes their streams more engaging and realistic to their viewers but also helps them build deep connections with their viewers because their audiences can see *"real"* and *"more authentic"* reactions through their embodied avatars.

Figure 3: An example of customized avatar design for specific social VR theme and context

Built upon the importance of embodied avatars to social VR streamers, other participants added the necessity to customize such avatars to engage with audiences based on various streaming themes and contexts. For example, P6 has crafted an impressive record of more than 30 avatar models to match major themes of his social VR streaming, *"I try to make an outfit that will fit a map or a game that I'm playing."* Figure 3 shows an example of the customized avatar he made specifically to play in a boxing game. P2 even highlighted the need to further "roleplay" their avatars to more accurately match specific themes or locations in social VR, such as a hotel reception desk, pirate ship, cyberpunk city, or Halloween ghost house. For instance, while embodying a hotel receptionist-type avatar, P2 would intentionally check in a variety of avatar

guests and answer their absurd questions as a receptionist to provide viewers with a more offline-like social experience. Therefore, for social VR streamers like P6, aligning avatar design with streamer behavior to match the theme and vibe of the social VR streaming environment both makes the watching experiences of their streams more immersive and helps their audiences better understand their personal preferences and approaches to streaming. This, in turn, deepens their emotional bond with viewers.

5   DISCUSSION AND FUTURE WORK

Grounded in eight interviews with live streamers who focus on streaming their activities and experiences in social VR spaces, our preliminary study has identified three innovative strategies employed by streamers to engage their viewers in highly immersive, interactive, and nuanced social VR experiences, which goes beyond what non-VR streaming or streaming single-user VR content can afford. In particular, our findings highlight how social VR streaming, which blends more embodied and physicalized streamer-viewer dynamics and immersive and interactive VR experiences, may innovate how people can conduct, experience, and engage in live streaming in the near future.

First, similar to traditional live streaming [5, 21, 22, 34, 41], social VR streamers also emphasize the central role of both verbal (e.g., directly talking to the camera) and non-verbal communication (e.g., body language) in engaging with their viewers. However, how such communication can be conducted, conveyed, and experienced in social VR streams is significantly enhanced in a more nuanced, natural, and intuitive way. As our findings have shown, our participants intentionally use full-body tracking and facial tracking in real time to "physically" express themselves, interact with other people in social VR, and react to their viewers, which goes far beyond typing a message or sending an emoticon as in traditional live streaming. This strategy thus offers a novel combination of technical and cultural scaffolding for traditional non-verbal communication in live streaming, which allows social VR streamers to establish more engaging and genuine social vibes that resonate with their audience.

Second, although the existing small body of research in VR streaming has acknowledged VR streamers' significant challenges to manage both engaging in VR spaces and interacting with viewers on non-VR platforms (e.g., Twitch) by studying streamed videos [43], it lacks an in-depth understanding of how VR streamers themselves understand and approach these challenges. Our current investigation thus takes the first step to fill this knowledge gap by uncovering the novelty of social VR streamers' careful camera control to bridge between immersive experiences in social VR and viewers' perspectives on streaming platforms. As our findings show, direct manipulation with cameras allows social VR streamers to physically and tangibly influence viewers' subjective experiences on streaming platforms. For instance, social VR streamers cannot directly control the streaming content or interact with viewers on Twitch chat while they are in social VR, actions such as the streamer "slapping" or "drowning" the camera, functioning as a tour guide by carrying the camera, or carefully staging a visually stunning environment, can cultivate a convincingly up-close and personalized interaction between the streamer and viewers. This thus helps the social VR streamer blend their activities in VR with viewers who are on non-VR platforms, which creates a level of audience immersion in live streaming in new ways.

Third, this study enriches our current understanding of the importance of embodied identity practices in social VR. Our findings further demonstrate that such practices are not only beneficial to social VR *users* as shown in prior works [7, 9, 10, 12] but also essential for social VR *streamers* by making their audiences understand them on a more realistic level. As social VR users feel higher ownership or identification with their virtual bodies and selves, greater feelings of self-presence and emotional engagement may also emerge [31], motivating social VR streamers to keep a personalized streaming style. This shows a significant distinction from non-VR streaming with animated avatars, which usually reflect fantasized personas and illustrate a disembodiment between virtual avatars and their voice actors [27]. Indeed, our findings have shown that although social VR streamers often customize their avatars or even join "role-play" with other people in social VR to craft more context-sensitive streamed content for their viewers, their key strategy to engage with viewers is to still intricately express their real-world personalities to provide viewers with *"real"* and *"more authentic"* reactions through their embodied avatars. Therefore, the combination of embodying, customizing, and roleplaying VR avatars leads to a unique rapport between social VR streamers and their viewers, which affords more engaging streaming experiences for both sides.

Our study thus leads to important new research questions regarding further unpacking social VR streamers' nuanced practices that both blend and go beyond traditional VR activities and live streaming practices. For future work, we plan to continue upon this current study to recruit more interviewees and conduct larger-scale studies to (1) provide a more comprehensive understanding of social VR streaming from diverse perspectives, including streamers, audiences, bystanders in social VR, and moderators; (2) understand risks and ethical concerns (e.g., privacy and harassment) involved in social VR streaming; and (3) explore how to design future VR and live streaming platforms to better support nuanced online interaction dynamics and mitigate potential risks in social VR streaming. In doing so, we hope that our study will contribute to the evolving research focus on innovating both live streaming and social VR experiences by cultivating more immersive and embodied interactions between streamers and their viewers.

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