Volunteer Moderators in Twitch Micro Communities: How They Get Involved, the Roles They Play, and the Emotional Labor They Experience

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ABSTRACT

The ability to engage in real-time text conversations is an important feature on live streaming platforms. The moderation of this text content relies heavily on the work of unpaid volunteers. This study reports on interviews with 20 people who moderate for Twitch micro communities, defined as channels that are built around a single or group of streamers, rather than the broadcast of an event. The study identifies how people become moderators, their different styles of moderating, and the difficulties that come with the job. In addition to the hardships of dealing with negative content, moderators also have complex interpersonal relationships with the streamers and viewers, where the boundaries between emotional labor, physical labor, and fun are intertwined.

CCS CONCEPTS

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

KEYWORDS

Live streaming, moderation, online harassment, qualitative, online community, Twitch

1 INTRODUCTION

Live streaming services are the latest form of social media that marries user-generated content with the traditional concept of live television broadcasting. Twitch is a live streaming platform where people (henceforth described as "streamers") can broadcast live videos on their own channel and simultaneously interact with viewers who communicate via a text chatting function (henceforth referred to as "chat"). This chat interface is displayed alongside the live broadcast, creating an interactive near-synchronous media experience.

As is the case with most social media and online communities, Twitch has its share of people posting rude things online [3, 37]. The real-time interaction, however, makes it difficult for streamers for avoid reading negative comments, since the interaction between streamers and viewers is one of the main features of live streaming [15, 17].

Content moderation is "the organized practice of screening user-generated content posted to Internet sites, social media and other online outlets, in order to determine the appropriateness of the content for a given site, locality, or jurisdiction" [35]. This content can be removed by moderators, who are sometimes volunteers or paid individuals in a commercial context [35]. Most current forms of social media rely on crowdsourced methods of moderation, where users report bad content that is ultimately reviewed by a human moderator [7, 21, 34]. Due to the time delay between the reporting of bad content and the review of it, this method does not work well in the context of real-time moderation, posing greater social and technological challenges.

While there have been numerous studies on moderation practices in online communities [2, 7, 12, 20, 21], live streams are an interesting new context because platforms like Twitch support micro communities, where each channel operates under different norms, different audiences, an different administrators [37]. For example, there are over a million streamers on Twitch, yet because streamers are allowed to create their own rules, the way channels operate greatly vary

and what may be acceptable in one channel may not apply to another channel [37].

This qualitative study shifts the focus from the technicalities of moderation practices to the psychology behind and associated with the volunteer moderators in live streaming micro communities. Taking an exploratory approach to understanding why people want to be volunteer moderators, the study identifies their motivations, the roles they play, and the emotional difficulties they experience in the context of the live streaming platform Twitch. As more HCI research turns toward methods of augmenting and scaling worker capabilities with technology, it is important to understand the essence of the type of work volunteer moderators are engaging in to better design appropriate tools. Also, in designing and operating systems that heavily rely on the work of volunteer moderators, it is necessary to understand the difficulties they experience as not to exploit people who are essential elements to system operation.

2 MODERATION ON TWITCH

Twitch is a live streaming platform where anybody can broadcast a live video of themselves doing some kind of activity [17, 37]. The type of content that people show on Twitch is mostly related to video games, but is slowly diversifying to include other things such as cooking, doing crafts, playing music, or other aspects of their offline lives, known (on Twitch) as IRL (In Real Life) [1].

In this study, we will focus on moderation related to chat, not moderation of the streaming content. Like most online spaces that relies on user generated content [4], Twitch is subject to disruptive behavior [3, 37], which has led the company's continuous updates to community guidelines [41]. Discouraged content in chat includes targeted harassment, unauthorized sharing of private information, hate speech, and spamming among others [8, 41].

To deal with bad content, the Twitch platform has many different "layers" of moderation [39]: some of it is crowdsourced, allowing viewers to report inappropriate or offensive content. Some of it is algorithmic and preventative in nature, where certain words or phrases can be blocked before they even appear in chat [37, 40]. This type of moderation, however, has limited customizability and can always be thwarted by people who invent new terms, creative spelling combinations, use emotes, etc. Then, there is moderation that happens after the fact, in which content can be deleted and people banned. The latter requires a human moderator.

The streamer has moderating privileges on their own channel, but they can also give some of these privileges to others [35]. When a user is appointed to be moderator, they have partial access to the built-in moderation tools on the platform, that enables them to ban people or delete messages. Moderators of Twitch channels have no control over the streaming content, just the comments that accompany the live video on a specific channel. Finally, there are moderators employed by Twitch (global mods), who moderate everything on the site, mainly processing issues escalated by channel moderators.

While most of the early online communities in the 1980s and 1990s relied on volunteer moderators [20], many of the contemporary social media platforms have a more closed structure. For example, social media systems such as Facebook, Twitter, and YouTube handle harassment reports centrally, which does not allow the creators of the user generated content to have an active role in moderation aside from reporting abusive people or negative content [12, 36].

Twitch is thus unique in that is a relatively new service (launched in 2011) but does not follow moderation conventions of other contemporary social media. The company handles the moderation of the content that people stream in a centralized manner but gives content producers autonomy over how to moderate the real-time chat [39]. While the company has some basic moderation features for streamers to utilize and is increasingly trying to develop more in-house moderation tools, much of advanced moderation tools rely on third-party applications [27]. While this creates a bit of a learning curve for new streamers and places responsibility on themselves for managing their channel, it allows for streamers to play an active role in governance and presents opportunities for more "grassroots" moderation practices in comparison to centralized moderation.

The decentralized structure of chat moderation on Twitch is somewhat similar to the sub communities of sites like Reddit [11], but is different in that each channel is based on the content being generated by one individual or small group. It is also different from online communities such as Slashdot in which the entire community comes up with moderation guidelines and votes up or down [20, 21]. The volunteer aspect of moderation is similar to Wikipedia, but the content on Twitch chat is not based on facts, thereby adding more subjectivity to moderation decisions. Thus Twitch is a platform that allows streamers to set their own moderation guidelines for their channels, but the viewers do not play a role in the establishment of those guidelines.

Becoming a Moderator

There has been much research about why people participate in live steams such as Twitch, both from a streamer perspective [19, 25, 31] and from a viewer perspective [5, 14, 17]. There has also been research on how it forms communities [16] and different types of interactions between streams and viewers [14, 23, 33, 44].

Missing from the scholarship, however, are narratives about the motivations of the (human) moderator in the live streaming context. Although moderators are also viewers,

they have an additional– and arguably big– role of maintaining the norms of channel. Who are these people and how do they end up with this responsibility? Literature review on volunteer moderators mostly yielded studies that were conducted in the context of online learning [10, 22] and online communities [2, 18, 21, 43]. Both of these contexts have different affordances than live streaming, however, so it is unclear how much they will relate.

Furthermore, it is important to note that there are many types of content on Twitch. Live streams can range from puppy cams (just a camera on a box of puppies) to a live broadcast of a national sports game. Streams like the NFL or reruns of older television shows (e.g., marathon reruns of Bob Ross[1]) attract many viewers who can chat with each other, but do not have a human host that directly interacts with viewers. Live events, such as streams of e-sports tournaments, are usually professionally produced and have thousands to tens of thousands of concurrent viewers, allowing for very few intimate interactions [24]. Also, once a person becomes so popular that they have tens of thousands of viewers, the chat becomes so fast that the content is unreadable. Hence, the moderators of focus in this paper are those who work for micro communities– defined as channels that are centered around a single or small group of streamers who directly interact with the audience and where chat conversations are slow enough that people can read what others are saying.

This paper thus poses a very broad and exploratory research question to further understand the process of becoming a moderator in micro communities and the different styles of moderation:

RQ1: How do people become a moderator in Twitch micro communities?

RQ2; What are the roles that moderators play?

Emotional Tolls

Moderation can involve a lot of repetition, and when that repeated work involves handling negativity, this could lead to secondary trauma and eventually burnout. Secondary trauma is the acute response to being exposed to someone else's traumatic experience whereas burnout is the ultimate consequence of "continual exposure to traumatic material" (p.134) [29]. In the case of moderators, they are exposed to two types of traumatic situations. The first is direct victimization of harassment from viewers, which may have similar effects to online bullying. The second is vicarious experiences of negativity since they have to view "bad" content before they delete it. This notion of the vicarious experiences with traumatic situations related to exposure to negativity

is correlated with compassion fatigue and has been well documented in mental health workers across numerous studies as found in this literature review by Collins et al.[6]. Continuous exposure to negativity would lead to higher stress: for example, Perez et al. [32] found that law enforcement agents who investigated Internet child pornography cases reported higher secondary traumatic stress disorder the more they were exposed to disturbing media.

While moderators are not mental health workers, they are exposed to individuals expressing self-harm, anxiety, and depression [13]. Not being formally trained how to deal with these situations, however, can create secondary trauma and feelings of guilt. Thus, this paper asks a general research question:

RQ3: What are the emotional tolls of being a moderator in Twitch micro communities?

3 METHOD

The research was conducted using semi-structured interviews with Twitch moderators. The interview protocol started with questions about who they moderated for, how long they had been moderating for, and how they became a moderator. Participants were then asked about their motivations, general moderation practices, and their relationships with streamers and viewers. The protocol was reviewed and approved by IRB.

Recruitment was focused on people who moderated in micro communities. This criteria was used because live streaming can refer to any live event that is broadcast via the Internet and can also involve the broadcasting of events or tournaments. Moderating for events may be very different from that of micro communities, because communication that happens in chat for events has large volume and makes it difficult for people to read, leading to higher reliance on emotes [24, 30]. Also, events are usually run by a professional production team, thus the dynamics between the content producer and moderator may be different than channels where it is just one streamer.

Convenience sampling was used to recruit moderators. Two moderators were contacted through personal connections of the research team while five were moderators of streamers who were interviewed for a separate research project (the streamers were those who said they were a Twitch streamer on their Twitter profile and were contacted via Twitter or those that were recruited at TwitchCon, a convention for Twitch streamers). The other moderators were recruited

through Twitter by searching for people who wrote that they were Twitch moderators in their profile and sending them direct messages. Participants were interviewed for 40-60 minutes over the phone or through the audio function of

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[1]Bob Ross was the host of The Joy of Painting, a program on PBS from 1983-94 where he taught oil painting,

Skype or Discord[2]. All interviews were audio recorded and transcribed for analysis.

The author first went through all the transcripts and extracted all relevant text that pertained to the research questions. Some of the literal questions that asked about motivations and roles were: "How did you become a mod?" "What motivates you to be mod?" and "How serious do you consider your role as moderator?" However, other questions that asked more generally about their activities also contained discussions on those topics. There were also questions that asked moderators to recall toxic scenarios and describe how they handled the situations. The author conducted open coding and arranged the codes in groups and hierarchies to determine emergent themes. High-level codes included topical codes such as "motivation, experience, role, decision," as well as emotional states such as "feelings, treatment, relationships" which broke down into more detailed categories such as "racism, sexual harassment, loneliness."

Participant Details

The moderators who participated in this study were diverse in age, ranging from 18 to 45, and were primarily in the U.S. (see Table 1). They were mostly White males, although the streamers that they supported were diverse in gender. Participants were moderators for one to as many as 80 different channels for streamers who had as few as a handful of viewers to those who were very popular and had thousands of viewers. They spent as little as two hours per week up to 70 hours per week as a volunteer moderator. On average, our participants had been moderators on Twitch for 2.4 years. Table 1 contains basic information of our participants. Participant names are randomly assigned pseudonyms.

None of the moderators that we interviewed received money for their services from the streamer but some received small gifts, such as subscriptions for the channel that they moderate, tickets to events, and branded merchandise from the streamer's online shop, such as mugs and T-shirts. Some of these gifts came from the streamer, other times someone in the community would give them a gift as a sign of appreciation.

In the Twitch interface, moderators carry a green badge with white sword next to their username, which many considered a literal and figurative status symbol. Participants discussed about how viewers recognize their moderator status. "Everyone knows who you are and kind of looks up to you in that certain way," Dave said.

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[2]Skype and Discord are both free Voice over Internet Protocol (VoIP) applications that support both video and audio calls

4 RESULTS

Becoming a Moderator

RQ1 inquired into the process of becoming a moderator. While moderators had different motivations, their process of becoming a moderator was not always aligned with their motivations– just because someone wanted to become a moderator did not mean that they could be one. In fact, there was almost a stigma attached to asking. "Never ask for a mod," Chuck said. Thus, 18 of our 20 moderators were asked to be moderators by the streamer while two responded to open calls for moderators. For moderators who did not know their streamer beforehand, only two had met their streamer in person at various events before becoming a mod but most others had never met their streamer in person.

Most of our volunteer moderators had no formal training on how to moderate, although some thought that certain experiences that they had gave them better justification for why they should be one, such as studying law in college, being a teacher, or having customer service experience. Several had had experience being moderators on online forums, audio chat rooms, or were admins in gaming communities.

Only a few moderators said that their channels had strict instructions with regards to moderation. "I think it's all trial and error, there were some moderation guidelines, but Twitch themselves didn't really have a guideline for how to do moderation," Barry said. Echoing this sentiment, Ivan said, "I just learned a lot from for example when I first started I was really afraid of timing people out, I was so terrified of making a mistake like banning someone who didn't deserve to be banned or anything, but my friend he really just took me under his wing and like, I have a lot of friends now who are involved in moderation and it's usually who most of my friends online are. We really just learned from one another. So, I didn't really look anything up or take classes for how to be a mod I kind of just developed as a person and I learned how to do it as I [sic]wung it."

There was also a lot of building of informal guidelines through cases, much like how the legal system relies on precedence. If there was a specific instance of an unusual situation, moderators would sometimes discuss this with other moderators and/or the streamer after the stream, usually on Discord. These discussions sometimes involved the streamer but not always.

The Token Mod. Moderators sometimes became moderators because they were already friends or family with the streamer. Some referred to this as a "token mod" implying that the person did not become a moderator because of merits but because of their personal connections. "There's such thing as what I consider a token mod. You're in a small stream, you know the person. They mod you because they know you, not because you know they expect you to actually do

Table 1: Participant Details

Participant	Age	Race	Gender	Country	Hours spent weekly	No. of channels	Experience (yrs)
Alex	35	White	Male	Netherlands	30	4	2
Anne	30s	White	Transfemale	USA	6	1	2
Brandon	31	White	Male	USA	10	6–7	5
Barry	24	White	Male	USA	20	80	4
Chuck	21	White	Male	USA	Not sure	30	3
Caleb	43	White	Male	USA	Depends	2	
Diana	33	White	Female	UK	20	2	1
Dave	18	White	Male	USA	60–70	1	2
Evan	25	White	Male	France	35–42	2	
Emily	37	Asian	Female	USA	3	1	1.5
Frank	20	White	Male	USA	21–28	2	1
Floyd	21		Male	USA	Not sure	1	1
George	41	White	Male	USA	21–28	60	2.5
Greg	29	White	Male	USA	12–16	2–3	1
Harry	19	White	Male	Scotland	2–3	44	2
Hanna	40	White	Female	USA	12	20	2
Isaac	40	White	Male	USA	4–12	4	3–4
Ivan			Male	USA	8–10	3	4
Jasmine	27	Black	Female	USA	36–70	5	5
Jared	45	Black	Transmale	USA	16–24	1	1

anything. They also trust you enough to know that you're not going to go on a banning spree and just ban people just because you can," explained Brandon, who said that he was a token mod on some channels.

Sometimes these family and friends were the most dedicated supporter of the streamer in spirit but not necessarily doing any physical work of moderation despite carrying the moderator status. "Before I became a mod I thought all mods will actually moderate and it came off as I'm the only one that's doing a lot of the moderating and I thought that was kind of weird," Anne said.

Token mod motivations varied, especially depending on the popularity of the streamer and how many viewers would be watching, but for the most part token mods did not have a strong sense of duty to be present all the time and of all moderator types were the least intrinsically motivated. Participants noted, however, that even if the token mod is not actually doing anything, their presence in itself could help the streamer, especially for channels that are new or do not have many viewers, because the interface allows viewers to see the list of who is viewing the channel. Because moderators have a green badge of a sword next to their user name, their presence could potentially make people think twice before saying something rude.

The Glorified Viewer. If not appointed because of an existing relationship, moderators earned their status by being a positive influence in the channel and/or a frequent viewer, which brought them to the streamer's attention and subsequent appointment as a moderator. This appeared to be the most common path to becoming a moderator and considered equivalent to a recognition and promotion of sorts. "You don't become a moderator without first being a member of the community. So you understand what that community expects and what it is like," Isaac said.

Oftentimes, the streamer would personally reach out and ask the person if they wanted to be a moderator. Floyd said he viewed someone's stream for several years and then started playing games together. "I started playing Overwatch after the stream and we grew closer and closer. I had been on Twitch for a few years more than him so I knew about how things worked. He asked me if I would be a moderator for his chat and I gladly said yes, and that's how it happened," he recalled.

However, surprisingly, there were a few moderators who were not particularly intending to be a moderator but suddenly found themselves one appointed by the streamer. All of these participants said that because of their new found role, they felt a stronger obligation to be in the stream more often. Emily described her thoughts on how she became a moderator:

Emily: "Suddenly one day I log in and find out that I am a mod. They didn't even tell me, it was like, oh, I'm a mod-uhhh ok.

Interviewer: and how did you feel about that.

Emily: It was weird. I had mixed feelings. I felt like being a mod would give me responsibilities, and watching the stream was fun for me so getting a job was a little bit of a– well, I wouldn't say burden, but yeah, responsibility that I wasn't sure I wanted. At the same time it was flattering, I mean, in hindsight I guess I deserved it in a sense but it was nice to be recognized.

Interviewer: What do you mean you deserved it?

Emily: Well they stream once a week and I was there most of the time, pretty consistently, to support them. I also was interacting with other people in chat because I wanted to keep up the conversation so in a way I was already being a moderator before I became a moderator.

The Recruit. Another method of becoming a moderator was through open requests for moderators by the streamer. Unlike glorified viewers, who were usually approached directly by the moderators, recruits were those who responded to the streamer's request and usually happened when a streamer who had a small viewership experienced a sudden influx of viewers and needed the extra help.

Diana said that she frequented a certain channel of a woman who makes quilts, and that one day, the streamer asked if any of the viewers would be interested in becoming a moderator, so she volunteered.

Moderators also received requests from streamers who knew that they moderated for other streams and solicited their help even if that moderator was not a viewer on their channel. In these cases usually the streamer would be familiar of the person that the moderator already moderated for and had either seen the moderator in action on a different channel or had heard of the moderator's reputation through other streamers.

Moderator Roles

Our second research question was about the different roles that moderators play and their styles of moderation. Even if the basic moderation tasks were fairly uniform across all moderators (e.g., deleting rude messages, banning people, answering questions posed by viewers) there were clear preferences and priorities that moderators had. Moderators took on specific roles that reflected different approaches to moderation; these inclinations were completely self-imposed and not necessarily mutually exclusive– a moderator could take on one or more of the roles outlined below.

The Helping Hand. The vast majority of moderators said that they moderate because they really wanted to help others.

"I'm somebody who really really likes to help people," explained Dave. "I've been working customer service and retail since I turned 18, I'm a people's person, I like helping people out, making sure that they're successful, I just really have a servant's heart and I really enjoy making sure people are happy and satisfied and can pursue their passions," Barry said.

The desire to help was twofold: helping the streamer and helping the community. Sometimes these interests overlapped but not always.

For those who cared about the community, it was all about facilitating a positive environment. Numerous participants talked about making the internet a better place. "If it's a place that's trying to create a good healthy space on the internet or is doing really good work that I believe in and I think I can be a positive contributor to, that is one of the things that would get me to say "yes,"" said Jared, describing how he agreed to become a moderator. Similarly, Ivan said that they "just love making communities a happier and healthier place and building the friendships within the community."

While the desire to make online spaces nice was generic, there were a few moderators who were finding meaning by making a difference– something that they did not think they did offline. Some mentioned being bullied as a child, including Anne, a transgender woman, who said that there is a "trend of toxic that just comes out by being anonymous on the internet." Bullied individuals said that they wanted to prevent others from having similar experiences.

Alex, who has autism, said, "I generally feel pretty useless in the world. This is a great way to prove that I do still have value even though I am on disability. I got to be useful, I got to help, I got to make the world a better place."

Moderators also wanted to help the channel because they admired the streamer, appreciated their content, and/ or wanted to ensure the streamer's success. "It really is very satisfying to know like you can help a streamer out like that. There are people that donate or that subscribe, but moderating you don't really offer anything financially but it's still a very a good way to help a streamer," said Harry.

"Being able to make someone else's dream a reality is the biggest thing. Because if a streamer is happy, it makes all the viewers happy and then everyone is smiling. Being able to be part of the team that makes that happen means the world," said Chuck.

Sometimes the desire to support streamers and the viewers intersected, but other times it didn't. Brandon said, "Ultimately, you know, I'm there for the streamer not the viewers. So if I do something, you know, if I time out a viewer and that pisses them off I could care less (laughs), I'm not there to make them happy." There were also moderators who differentiated between wanting to help the community and wanting to help a viewer by putting collective needs first.

The Justice Enforcer. Seeking justice was a major theme among moderators who felt strongly about enforcing community standards. Some of these did not particularly enjoy this power, whereas others explicated stated that they enjoyed punishing bad behavior. "It is something I really like to do since I have strong sense of justice. I can understand when people behave badly, sexism, racism, all that stuff, so it feels really good to do something about it. In real life, you can only leave them there, you can let them go away, but in a chat room, if I am moderating, saying 'You are terrible human being, go away,' that feels really good," said Alex.

For those who took moderation as a duty, some considered it as a form of community service whereas others saw it as being thee "middle man" or "bad guy" so that the streamer did not have to be. "The streamer needs to get viewers and needs to be likeable, especially a streamer who does this professionally, they are successful as far as people subscribe to them and view them, so the streamer can't be the bad guy. It's easier for the streamer when the mods will take care of people who are problems. If we're doing the banning, the mods are the bad guys, which is important for the health of the stream," said Jared. Caleb also said he was there to be the "bad guy": "The streamer is there to stream…they don't need that kind of headaches. So you are there to be the one to get all the hate," he said.

For others, it wasn't about taking the hit but about exercising behavior that made them feel powerful, especially if they felt like they did not have much power in their offline life. "Sometimes it feels good. I have a long day at work, and you're like 'work sucks' and you come home and you see some idiot in chat yelling all the time– just click and he's done. It's satisfying," Chuck said. Brandon said, "Being a moderator is just like being a regular viewer except you have power."

The Surveillance Unit. A couple moderators described moderation as a form of surveillance, saying that they did not see their role as interacting with the viewers but watching until it is time for them to step in. Sometimes, this was not necessarily because they did not want to talk to viewers but because they felt that their voice as a moderator should not overwhelm the chat. "If there's a current conversation going on and it is fine, I don't really feel the need to throw myself in the middle of it. I just kind of sit there and watch things quietly," said Hanna. She added that the moderators' sword badge also discourages her to converse. "They complain about too many swords in chat so sometimes I just kind of keep it to myself because I don't want to make people uncomfortable or think that they can't have a conversation because I'm watching," she said.

The Conversationalist. On the opposite spectrum were the conversationalists, who genuinely enjoyed the aspect of interacting with viewers, building community, facilitating conversation, and keeping people engaged so that they have a good experience. "Whenever there's no hatred in the chat, it's a really fun interactive thing to watch and being able to like mold it, for example whenever you're the mod for a really big channel you can just ask whatever you want and the chat is so eager to respond to you, like, you can ask them anything and 50k people will just reply to you," said Frank.

There were a mix of participants who said they were "naturally extroverted" and those who admitted to being more social online then in person. In particular, this latter group found that it was easier for them to interact with people through typing in chat than talking in person, and that doing so sometimes improved their social skills.

Jasmine pointed out that moderation is not just about banning but also about answering questions or just keeping the chat entertaining while the streamer is focused on the game. She talked about how she actively tries to say things in chat so the streamers can see that an audience exists. "I do try to consciously welcome new people though and if chat gets quiet I will talk more so it doesn't seem like chat is empty. I think streamers could feel bad if there is nothing going on in chat and seeing someone else in chat may get lurkers[3] to say something too," she said.

Conversationalists also helped facilitate more meaningful interactions beyond general hellos. Alex, who lived in the Netherlands, talked about a conversation with a viewer from Puerto Rico right after the hurricane, and how people were interested in how they were doing and if everything was okay.

Emotional Tolls

While there are many difficulties in moderating that have to do with the moderation practices themselves– some of which include unclear moderation guidelines, different mental models of moderation, and technical difficulties– RQ3 focused on the emotional tolls that moderators experience. Three main themes emerged along these lines: feelings of being under appreciated, misaligned relationship expectations with both streamers and viewers, and difficulties in handling negativity and guilt.

Lack of Appreciation. As much as many moderators said that they felt like a cherished member of the community and a true collaborator of the streamer, there were also instances, either observed or experienced directly, where moderators thought they were not being valued as much as they should. Diana talked about how, mostly in channels with higher

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[3]People who are watching but not participating in chat

volume of chat, some streamers or viewers blame moderators for missing certain things, which they thought was unfair given the amount of work that moderators have to do: "I understand that it's a stress(ful) environment for the streamer, but sometimes they won't appreciate that it's also a stressful time for the moderators. I've seen a couple of occasions where the stream has snapped at the moderators for not reacting quickly enough," she said.

"Having a healthy chat is a good part of a good live stream in my opinion and moderators do most of the job to keeping the chat healthy," said Evan, "A lot of live streamers don't appreciate that, which is kind of sad. Some do, but like I've moderated for a lot of streamers. Sometimes you rarely get a thank you. Like alright, I'm just doing hours of work just for you, just for the chat, just for the stream. You're getting paid for it. I don't even get a thank you."

This idea of "just wanting thanks" was echoed by many moderators. "They recently had their stream anniversary and they thanked everybody but their mods," said Emily.

Several moderators also said that they felt like an employee or colleague rather than a member of a team. Many streamers never shared their schedule for streaming in advance, which made moderators feel uncomfortable because they felt like they had a responsibility to be there, even if they technically did not have to always be there.

Brandon described a situation where he was moderating for someone for years and then the streamer just closed their channel without letting any of the moderators know. "If they just stop and go dark without saying anything, it's like, 'OK, why?' It's not cool that we put in all this free time and work for them– they were making money off the stream and I wasn't, I was doing this completely voluntary. The least they could do is tell me why they quit but when they don't even do that, it's like, basically a FU," he said.

In a unique instance, Anne said that she felt like the streamers paid more attention to people who paid money to subscribe to the channel and that monetary contributions were favored over time. She said that the streamer sometimes let viewers join in on playing games and that people who paid the streamer got opportunities to do that whereas moderators did not, even though some of the moderators had been on the channel for a couple years. "Their personality changed when they got partnered[4] too. It became about the money," she added. Sometimes moderators removed themselves from the community because of these issues, but this was rare and something that the participants noted seeing in other moderators but did not experience themselves. When asked why moderators continue despite these feelings of

disappointment– and sometimes resentment– they explained that either 1) they still enjoyed the content of the stream regardless of how the streamer treated them, and 2) they enjoyed interacting with the viewers, whom they considered themselves a part of the community with.

Misaligned Relationship Expectations. A second theme that was identified was misaligned relationship expectations with regard to both streamers and viewers. For example, some moderators had a strong desire to become closer to the streamer but found out that the streamer did not share those desires. These examples led to disappointment. "I think friendship is a strong priority for most people but this relationship is just going to stay where it's at. Some days it can be frustrating but usually it just feels like it is what it is," said Jared.

To be fair, there were moderators who had wonderful relationships with their streamers and over time become close friends. For example, Floyd, who moderates for a streamer who is an artist, said that he has a very close relationship with the streamer, and that when they went to a convention, the streamer and his fiancee picked him up from the airport and they all shared a hotel room together.

Similarly, Ivan also said that he became close with several of streamers that he is a moderator for: "I met them, I've been to their house, I consider myself to be best friends with them," he said. The moderators who felt close to streamers usually spent a lot of time with the streamer outside of the stream, mostly playing games together or chatting in Discord.

Some moderators, however, feel that it is necessary to maintain a professional distance, describing how they frowned upon practices when moderators tried to use their moderator status to seek special favors from the streamer or express interest to streamers in an inappropriate manner, such as wanting sexual relations with the moderator. No one had an example that pertained to themselves but were able to recall instances in which they thought other moderators in the channel were being unprofessional. Jared had some strong opinions on this issue:

"I try not to have too close of a relationship with my streamer because I know that streamers sometimes get stalkers and people who are really needy or people who overstep boundaries by trying to be too close and some people might want to mod because they want a too close relationship, but I think that's creepy so I generally try to stay pretty professional and keep strong boundaries, like I don't contact her very often and I don't contact her much for things outside of mod work."

Anne discussed how meeting the streamer offline made her realize where her expectations went wrong. A main moderator for a certain channel, she talked about how she went to TwitchCon to meet the streamer but aside from a greeting, did not get to spend any time with the streamer,

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[4]Twitch has a tiered system: users who stream regularly, have a certain level of viewership, and agree to exclusively stream to Twitch (among other criteria) are made "partners." Partners receive ad revenue and also can earn money through viewer subscriptions and other methods.

who was busy networking. "[My streamer] prioritizes people that can help him for his stream and if they don't he kind of puts them aside. That's how I felt like I was treated for most of TwitchCon," she said.

In a related situation, Emily said that they were discussing about going to a gaming convention together but then she was left out of the plans. "During stream, we talked about going to this event together but when it came to the actual planning of the travel, I was completely left me out. That's when I realized what I really meant to them. I thought I was part of the streaming family and I wasn't," she said.

In extreme situations, several moderators also pointed out that some moderators overstep boundaries by trying to be too close to the streamer, exhibiting clingy or "stalker-like" behavior. Evan talked about how there is especially a stigma about male moderators working for female streamers because they are often accused of "trying to be white knights trying to save the young female streamer to get her attention and maybe sleep with her."

On the flip side, there was also one situation where certain streamers acted too close that made the moderator feel uncomfortable. Evan said that some of the streamers always seemed to want advice from him about personal situations and that he did not particularly want to have those conversations: "They went a little over the edge and always came to me for help, I was like, I don't know what to do."

Moderators also experienced awkward interactions with viewers who they considered friends when they had to moderate them. This derived from the fluidity of moderator roles because when they are interacting with viewers in chat and having conversations, sometimes they are not doing so in the capacity of a moderator. However, if a viewer in chat says something that needs to be moderated, they have to immediately put on their moderator "hat."

In an opposite example, there were also situations where viewers wanted to be friends with the moderator but the feeling was not mutual. "Some people have volunteered some information... [but] I don't really wanna seek out and learn about different viewers. It's not something I have time for," said Isaac. Ivan said that he does make an effort to try to talk to people but "if people are half-ass trying to talk to me or milk me for moderator friends then I absolutely will try to ignore contact with them."

Dealing with Negativity and Guilt. Thankfully, none of the moderators that we interviewed talked about excessive secondary trauma, but the moderators who worked on channels with many concurrent viewers and those who moderated for female or LGBTQ streamers mentioned how dealing with large volumes of negativity could be extremely stressful. Hanna, who moderates for 20 different streamers, said that it was much harder to moderate for a transgender streamer

because they get so much more nasty comments than other streamers.

Moderators also have to deal with bitter viewers who are unhappy with getting banned or having their comments deleted. In these situations, some viewers will lash out or argue with the moderator through private messaging, and in extreme cases, lead to more severe harassment, including name-calling and death threats.

"Anytime you time someone out you basically get prepared to be called the Nazi. The mods that actually do their job, people will call them Nazi mods. I've been called that plenty of times for actually enforcing rules in streams and timing people out or purging them, you know, just part of the part of the game, I guess," said Brandon.

Dave said it was difficult to control these people because they would find ways around the system to come back and harass them further. "We have times where people would get banned on Twitch and they will go and make like million auto counts and keep on coming back and it was just super annoying," he said. In these situations, moderators would report these users to Twitch to do a more permanent IP address ban, but this would take time.

While disgruntled viewers are common, sometimes moderators can also feel guilty about their decisions in situations where they feel they are enforcing guidelines that they may not personally feel comfortable about. For example, Hanna discussed how she was moderating a channel where the rule was to only speak English, but then the streamer was playing against a Chinese team, which resulted in some people speaking in Chinese in chat. "I had to ask them to speak in English and it caused a huge problem that they felt like we were being racist towards them. But the reason it's English-only is none of us spoke Chinese so there was no way for us to moderate or have any idea what they were saying, whether they were being positive or negative or just being rude to the other viewers. I purged all the Chinese chat and warned them about the rules," she said.

Sometimes the hatred is just toward moderators in general. Ivan explained that sometimes viewers hate moderators because of bad past experiences, which are inevitable because some moderators are truly bad and abuse their power.

Rude viewers are an annoyance, but those who express serious mental health or anger issues raised concern among moderators who were sometimes unsure how to deal with the situation. Half of the moderators said that they see people who are sad, depressed, angry, or express suicide intention. In an extreme case, one moderator mentioned a viewer who made gun threats. Moderators differed in terms of how prepared they were for situations like this. Some mentioned that they have suicide hotline phone numbers always on hand to message to people. Inevitably all moderators who dealt with these situations opted to ban the user after telling

them politely to change the subject. "I'll message them the information and explain to them that a Twitch chatroom is the wrong place to find the help they need. Sadly you have to move on because that's about the extent of the help you can give," said Isaac. In situations like this, moderators must bear the guilt of turning away someone who may need social support, especially if the person is not receptive to help. "There was this one guy who was depressed for so long. I tried to get people to help and it just didn't work out. He was not interested in getting help. I still think about that, like is there something I could say, some research I could have done to convince him?" said Jared.

It helps, however, to have other moderators to hand over the situation to or commiserate with after the fact. "Venting is a big portion…I think I probably won't never stop venting to my friends because I know that they care and deal with the same thing day to day and it's kind of a mutual thing where we vent to each other and it makes us feel a lot better. Otherwise I'll just maybe close the tab, watch someone else or play video games or kind of talk to friends, go outside, whatever distracting, which is pretty much anything but the current situation at hand that I need to cool off," said Barry. Some moderators even were part of larger networks of moderators from other channels.

5 DISCUSSION

The first research question inquired into how people become moderators. The most surprising finding was how little autonomy moderators had in this process. Desire and motivation to become a moderator was secondary to the needs and/or attention of the streamer and it was considered taboo for people to express wishes or interest in becoming a moderation unless asked first. This social dance around the process of moderator appointment, whilst very organic, seemed highly inefficient, time consuming, and biased towards people who are more active conversationalists. The interviews showed that some people enjoy or even prefer taking a more silent role in the background in keeping the chat clean, but the current recruitment methods do not favor those types of people.

The second research question inquired into the different roles that moderators play. In general, moderator roles were largely divided into two: curation of content, which could be done by deleting things that viewers post, and curation of people, which included banning viewers (kicking them out of the stream and preventing them from returning in the future), "timing-out" viewers (disabling them to comment for a short amount of time), and general conversing with viewers. However, a deeper analysis revealed a more nuanced role structure that reflected stylistic differences in moderation that were very much tied to intrinsic values of the moderator.

What was interesting about these roles was that depending on the channel and the streamer, a moderator could have an entirely different role or play a collection of roles. This collection of diverse roles was different from some moderation in other contexts such as Wikipedia.

There was a noted difference between when moderators' primary purpose was to help the community versus help the streamer. This streamer-associated motivation was particularly unique, as there have been more studies on the community aspect of live streaming [15, 17, 26, 38] than the interpersonal relationship between streamer and moderator. Since the moderator is a type of viewer, it could be that insights into parasocial relationships could also apply to moderators. For example, Wohn et al. [42] found that parasocial relationship was significantly related to viewers' intentions to give financial, verbal, and instrumental support to streamers. It would be interesting to see how parasocial relationships manifest between streamers and moderators– certainly some of the results discussed already point to certain situations where the viewer is enamored by the streamer. However, the relationship between streamer and moderator was complex– for some, it was a lateral friendship, for others, there was a clear power dynamic or a sense of comradery as a colleague but not a friend.

Earlier in the paper, it was mentioned that Twitch has a decentralized hierarchical social structure. In terms of the technical affordances and permissions that moderators have access to, there are definitive differences between streamers, moderators, and viewers. Moderators have more privileges than viewers in that they can ban users or delete comments in chat, but whether they would be considered higher up in the food chain than viewers from an emotional perspective was unclear. The relationship between streamer and moderator was so different– not only between moderators, but also between the different streamers that the same person moderated for. Certain moderator-streamer relationships were such that the moderator was a well-respected guest of the community, while in other relationships, moderators thought they were considered lesser than other viewers who paid money to the streamer.

Technological Implications

The motivation to moderate can be strongly intrinsic or an execution of perceived duty but regardless, the demands of manual moderation require much time and effort, and in situations where the streamer becomes more popular, the sheer amount of moderation that is needed grows as well, putting a burden on moderators and thus begging for technology-assisted moderation practices that will contribute to scalability and sustainability issues. Although this paper did not get into the actual moderation practices (e.g., decision making processes, what tools they use for moderation)

it was evident that as the viewership increases and volume of chat rises, moderators sometimes lack the cognitive and emotional capabilities to handle that content and frustration or guilt that accompanies interactions. While technology assistance to assist the cognitive overload aspect of moderation is an obvious impetus for future work, this study also raises the issue of the need to think about opportunities for technology to also handle the emotional situations. Some psychological issues, of course, are not those that technology can solve– for example, learning how to effectively deal with depressed individuals or those who express gun threats calls for increased need for education. However, there could also be other methods to help with the emotional issues that we have yet to think about, which could be something as simple as providing easily accessible guidelines or decision tree-type protocols for common negative situations. Automating some of these processes could help moderators apply uniform procedures and increase reliability. Moderators seemed acutely aware of different norms and expectations of different streamers; involving them into the creation of protocols that are tailored to their own community would be useful for when moderation duties need to scale.

The different styles/preferences of moderators and their process of becoming a moderator suggests that there is an imbalance in the type of moderators that streamers are recruiting. For example, because of the stigma against moderators reaching out to streamers to offer their help, streamers recruit moderators who are positive examples in the community. This, however, could lead to a systemic preference toward people who are conversationalists, when what a streamer actually needs is a variety of different types of moderators, which may include people who are not active in chat but still can efficiently curate content. Some kind of subtle volunteer system built into the platform may reduce some of the stigma associated with volunteering to become a moderator.

Moderators have a range of reasons why they moderate, so there cannot be one design solution that would meet everyone's needs. Some moderators wanted compensation: in these cases, a mechanism that would allow for some of the streamer's revenue to be shared with moderators based on the time they spend, may be one way to encourage, or at least have streamers think about what is fair compensation for their mods. Better visualization or analytical tools that bring attention the work of moderators (e.g., indicating moderators' work in stream statistics) may also highlight the otherwise hidden labor. Other moderators, however, did not want money– only an expression of acknowledgement. The theme about moderators feeling under-appreciated raises interesting questions about the role of design in nudging people to do simple things that should be common human kindness,

like thanking someone who helped them, but would that diminish the value of a thank you?

The green sword badge next to moderators' user names had interesting design implications. Participants discussed how it grants them a certain status and recognition, a source of pride for being an outstanding citizen of sorts. The recognition could come with respect but it could also come with disdain. Sometimes the badge was a signal of moderator presence in the channel that could deter potential trolls, but other times it could be a deterrence in which moderators would have to curb verbal activity as not to make it seem like they are dominating the chat. This was especially difficult for moderators who sometimes wanted to participate in chat as a viewer rather than a moderator, but there was no way to "turn off" their moderation badge. The solution would not be as simple as creating an on-off function, however, because this problem ties into the complex issue of multiple identities and self-presentation– a persistent topic of interest we see in online community research e.g., [9, 15, 28].

Some of the limitations of this research is that we only focused on people who moderated for micro communities, thus the experience of people who moderate for large events may be similar or different. Also, while participants served as moderators for diverse streamers, the participants themselves were not very diverse in terms of gender. One female moderator, for example, said she felt like she was not taken seriously because of her gender but we did not have enough female participants or appropriate gender-related questions to examine gender differences. This could be something suitable for future research.

Without any large-scale descriptive data about moderation populations, it is difficult to know how representative this convenience sample is. Recruiting was as diverse as possible to mitigate homogeneity, but recruitment of streamers (and their moderators) through Twitter and TwitchCon was limited to English language streamers and English-speaking moderators, which may explain lack of Asian moderators. The Twitch streamer demographic is also heavily North American and European. Thus the results in this study should not be generalized to all moderators or even those on Twitch, but would most likely bear similarities to small online communities centered around a central figure that primarily rely on self-policing. Future research may want to examine cultural differences or cross-platform differences in moderation.

6 CONCLUSION

This study conducted an exploratory investigation of volunteer moderators in Twitch micro communities to understand why they participate as moderators, the roles that they play, and the emotional distress that may accompany their duties. We found that moderators have fluid social statuses and

roles as people who enforce regulations but also try to foster positivity through discussions with viewers.

Moderators operate without clear guidelines in environments that vary drastically depending on the characteristics and personality of the content producer and their own personal judgment. Also, because the human moderators are often volunteers, this adds a layer of interpersonal relationship management between streamer and moderator where the boundaries between emotional labor and fun are intertwined.

Being a moderator comes with some perks but also responsibilities and distress, much of which was interpersonal conflict. The second is vicarious experiences of negativity as shared by viewers who visit streams to talk about various negative content, including expressions of self-harm, depression, and anxiety. Some of the topics that viewers discuss are more common and routine rants, such as complaining about a bad day. However, there are also more serious situations, such as expression of suicidal thoughts or chronic depression.

We hope that these descriptive results provide insight into the underlying psychology of moderators and help inform better labor and design practices that accommodate these volunteer workers.

ACKNOWLEDGMENTS

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