



“We’re so much more than the in-game clan”: Gaming Experiences and Group Management in Multi-Space Online Communities

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The platforms that host online gaming groups and communities continue to evolve, and it has become possible to join, participate in, and consume content from groups that exist across multiple tools, platforms, and spaces at the same time. In this paper, we explore how groups use and rely upon assemblages of multiple online spaces to accomplish the “work” of participating in these gaming groups. We present an interview study with users of the100.io, a platform that hosts gaming community spaces, helps players find groups, and operates as a gaming event scheduling tool for its users. Contrary to our initial assumptions, we found that users relied upon the100 as a kind of glue for flexibly-interconnected, multi-space group configurations. These multi-space groups support our participants’ desires to approach online gaming as a social practice, provide additional accountability among players, and enable multiple forms of social participation within those communities. Our findings point towards opportunities to expand social computing scholarship to better describe how users of online communities flexibly bridge across technical infrastructure.

CCS Concepts: • **Human-centered computing** → **Empirical studies in HCI**; **Empirical studies in collaborative and social computing**; *Social networking sites*.

Additional Key Words and Phrases: online communities; online spaces; online groups; gaming communities; community maintenance; the100.io; multi-space communities

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1 INTRODUCTION

The platforms that host our online community spaces continue to adapt to our socializing needs—providing new features, culling old ones, and even copying features from other popular platforms in order to compete. When we think about a particular online community, either as participants of those communities or as researchers who study them, we tend to automatically bundle the platform that hosts the interactions of that community as part of that community. For example, It is not simply a meme-sharing group, but rather a meme-sharing Facebook group or a meme-sharing subreddit or a meme-sharing Instagram account. The association to the platform is reasonable, as each platform offers different modes of participating within the community in question. For gaming groups, these assumptions about platforms are even more complex, due to the in-game tools and external platforms that often simultaneously support interactions among gamers *across* platforms.

Scholarship on social media ecosystems has demonstrated how individuals rely on multiple social and communication platforms to create separate places for different kinds of communications (e.g., [4, 33]), to express their relationships in more personal ways (e.g., [21]), and to present their identities to multiple audiences (e.g., [12, 34]). We extend these considerations from social media ecosystem scholarship to explore how online gaming groups and communities can make use of—and exist across—multiple spaces and platforms, often with fuzzy boundaries between each space. We refer to these groups that exist across multiple platforms, and occasionally multiple spaces within the same platform, as “multi-space communities.”

In this paper, we report on a study of gaming groups that use the100.io, which is an online community platform that players of the video game Destiny 2 can use to schedule multiplayer events with other members of their gaming groups. As we report in our findings, this platform can play a variety of roles for gaming groups, from being the primary mechanism through which these groups socialize to operating solely as a tool for organization. Our original interest in the100 as a research site of relevance for CSCW began with our assumption that the platform, itself, was *creating* communities of gamers, and that these communities primarily existed within the100’s online infrastructure. However, throughout the process of analyzing publicly available groups [45], interviewing participants about their experiences with the system, and reflecting on Harrison’s and Dourish’s work on space and place [14, 22], we began to understand that the groups created within the100 were more akin to *spaces*, and that each community’s *place(s)* could exist across a number of platforms and tools. As we explain in more detail later in the paper, “spaces” refers to the physical (or in our cases, digital) infrastructure and “places” refers to the sense of community, norms, and legibility of social interactions that can be expected in a given space. This shift helped us move away from an “if you build it, they will come” mentality about group space creation toward an understanding that can more adequately account for the kinds of experiences group members have across their group’s multiple spaces and places. As a result, what began as a study just about the100 has become a study about how communities can assemble their own collections of tools, platforms, and spaces to serve their needs. In our participants’ cases, the100 served as a kind of glue in that ecosystem. This paper focuses on how players navigate and make use of these multiple spaces tied to their gaming communities. How these groups are initially created or joined is explored in a separate paper from our project. Our guiding research questions for this current paper are:

- What role do the100 and related community platforms play in shaping how Destiny 2 players interact with each other socially?
- What strategies does the100 employ to support groups and communities of gamers?
- How can we translate insights from how gamer groups exist across multiple online spaces to other online community contexts?

We answer these research questions through an analysis of 17 interviews with 31 participants, in which we discussed the role of the100 and other gaming spaces in helping participants engage with their communities; the tools required for the communities to be properly managed; the relationships our participants were able to develop within these groups; and the impact, if any, that these systems have had regarding how our participants approach their online community engagements more generally.

We found that the ways our participants' groups used their various spaces supported their desires to approach online gaming as a social practice, provided a sense of accountability among group members, and enabled multiple forms of social participation within those communities. In the findings section we provide an empirical account of how the100, as part of an assemblage of multiple tools, platforms, and spaces, has impacted how participants of this study have experienced their online gaming groups. In the discussion section, we build on our analysis of this empirical account to discuss the responsibilities that various actors have toward these communities. Additionally, we explore the benefits of the fuzzy boundaries that exist between a group's multiple spaces and we describe the various types of relationships these spaces supported for our participants. We argue that multi-space communities are a ripe area of study for CSCW scholarship and we present future directions for research and design projects that further-investigate this phenomenon.

2 BACKGROUND

In this section, we provide background information and definitions that will help disambiguate some of the terminology used throughout this paper.

The system we describe in this study, **the100.io**, was initially developed to help players of the video game **Destiny** find persistent groups of other players to play with. It was later expanded to include **Destiny 2** (both games developed by game development company Bungie), as well as a wide catalogue of other games. However, **Destiny** and **Destiny 2** remain the most popular games for this service at the time of data collection (Summer 2019)¹, and groups that use the100 to help them play these games together are the focus of our analysis. In this paper we demonstrate how the players we interviewed, and their gaming groups, often use the100 as a kind of glue to assemble an ecosystem of other platforms and tools.

The100 exists primarily as a web platform, where individuals have profiles and can become members of groups (which have their own group webpages). Groups in the100 are called **clans** because groups within **Destiny** are also called clans. One motivation players have for becoming members of clans in **Destiny** is so that they can engage in some of the game's multiplayer content, while receiving in-game perks for playing with other clan members. The100 helps players engage with their clans by simplifying the process of scheduling and coordinating multi-player events among clan members, which we will discuss in more detail in the findings section. The system allows for this coordination to take place within the groups (as private events), or across all users of the100 (as public events).

The word "**clan**" is somewhat complex in this study because it is used in multiple contexts. Participants used the word to refer to their group as it is hosted on the100, their group as it is defined within the in-game environments in **Destiny** and **Destiny 2**, as well as to describe their group as it exists across multiple additional communication platforms and spaces. Throughout the text, we clarify which of these uses our participants mean.

¹The gap between data collection and an accepted version of this paper is large enough that some of the platforms and mechanisms have changed. However, our primary findings and contributions are more closely aligned with the multi-space nature of how our participants worked together, and are not as impacted by this gap in time.

Discord is a communication platform that has steadily risen in popularity since it was released publicly in 2015. At the time of data collection (Summer 2019) Discord was a popular service among gamers, but had not yet shifted to the broader community focus that it has at the time of this revision (January 2022). Discord’s primary features of interest for this project are its channel-based communication approach and its ability to integrate with bots that can connect communications in those channels with external platforms, like the100.

LFG Tools, or “Looking for Group Tools,” is a shorthand way to refer to the kinds of tools that can connect a player to a group of players for temporary activities in a game. Throughout the paper we describe several kinds of LFG implementations. When we refer to “LFG tools,” we refer to tools that exist outside of the100. There are some services associated with the100 that are similar to LFG tools, and we refer to those as “LFG-like” throughout the text.

3 SENSITIZING CONCEPTS AND RELATED WORK

This interview study centers around gaming groups and communities that make use of the100 and other online spaces to play *Destiny* and *Destiny 2* together. In this section we present the sensitizing concepts that have guided our project, which include Harrison and Dourish’s articulations of space and place for CSCW [14, 22] and Kraut and Resnick’s community design alternatives [28]. We then contextualize our project among three areas of related work: research on gaming groups and communities, related matchmaking studies, and social media ecosystem scholarship.

3.1 Sensitizing Concepts

In this section we introduce the sensitizing concepts that have influenced this project. Following Charmaz [8], we view sensitizing concepts as tools to help us understand the experiences of our participants, probe deeper into our findings, and begin to translate our findings to broader contexts. As we describe in more detail below, we used the concepts of space and place in this project to help us problematize our understanding of the platforms and tools our participant’s groups incorporated into their ecosystems. Similarly, we used Kraut and Resnick’s community design alternatives [28] to reflect on our empirical findings in order to help us develop a more nuanced set of insights about community management and group responsibilities.

3.1.1 Space and Place. In Harrison and Dourish’s work extending the concepts of space and place from architecture and urban design to the design of collaborative systems, they distinguish between space—the physical location or the three-dimensional structure and layout of that location—and place—the sense of “a cultural or communally-held understanding of the appropriateness of styles of behaviour and interaction, which may be organised around spatial features but is, nonetheless, quite separate from them” [22]. The authors argue that a sense of place is created “only over time, and with active participation and appropriation,” and that “the sense of place must be forged by the users; it cannot be inherent in the system itself” [22]. Ten years after the initial paper, Dourish expanded on the concepts of space and place, problematizing how we understand the *legibility* (or our ability to interpret the social atmosphere through the traces people leave behind) of the spaces we interact with [14].

The distinction between space and place has been usefully employed in a wide range of CSCW and HCI research, especially as a lens for understanding how specific technologies deployed to particular physical locations can impact the way people relate to those technologies (e.g., [2]), to those spaces (e.g., [19, 44]), and to each other (e.g., [40]). While the examples used to explore space and place are primarily about physical or hybrid spaces (in that they have a physical-world location or component related to them), we make use of the distinction to help us understand the “place-ness” of the multiple spaces that groups who use the100 tend to incorporate into their

gaming community platform ecosystem. In the discussion section, we use these concepts of space and place to unpack how our participants' groups and communities make use of multiple tools and platforms in an assemblage that represents, but does not contain, their community. We will also discuss how whether or not individuals attach a sense of "place" to these spaces depends on how their specific groups make use of them, including what kinds of traces are left behind by previous interactions with the space.

3.1.2 Community Design Alternatives. Research on online group and community management has outlined how the ability to manage (and moderate, though moderation is outside of the scope of this paper) depends on both the technologies upon which a group relies and the abilities of that group's managers to engage with the emotional and social labor of group management [13]. In their foundational text *Building Successful Online Communities*, Kraut and Resnick describe eight categories of "design alternatives" that represent technical and social design decisions that can impact the success of an online community [28]. We use these categories of design alternatives as lenses to reflect on our findings in the discussion section. They include:

- (1) how the community is structured;
- (2) the types of content, tasks, and activities in which participants can engage;
- (3) the mechanisms for selecting, sorting, and highlighting the kinds of content, tasks, and activities that are visible "so that people can find the ones that are best for them";
- (4) external communication mechanism that allow, or not, for information within the community to be shared outside of the community;
- (5) mechanisms for members to receive feedback, rewards, or sanctions for their activities within the community;
- (6) the degree to which roles and rules are articulated within the community;
- (7) "access controls," or mechanisms for gate-keeping entrance to the community or access to specific moderation abilities within that community; and
- (8) means of articulating the purpose of the community [28].

They propose that understanding these categories of design alternatives can help community managers and community platform designers address the critical design challenges that online communities face: "Starting a New Community," "Attracting and Socializing New Members," "Encouraging Commitment," "Encouraging Contribution," and "Regulating Behavior" [28]. While contributing to Kraut and Resnick's framing of design alternatives and critical design challenges is not one of the primary goals of this paper, we have found them generative. We refer to these alternatives and challenges in the discussion section in order to help clarify and organize the mechanisms at play within the groups and communities we have studied. As we will demonstrate, the groups our participants are members of exist across a wide collection of platforms and tools. This provides productive tension for Kraut and Resnick's design alternatives and challenges, which were originally articulated for communities that exist in a single platform. By exploring those tensions, we are able to explore how the responsibilities of members, managers, and platform developers can shift in the context of multi-space communities.

3.2 Gaming Groups and Gaming Communities

Building on the above literature, and on our understanding of space and place in this context, we use "group" to refer to a collection of people who are drawn together through various platform mechanisms and spaces (such as through Discord servers or through clans created by the100) and we use "community" to refer to groups whose members have described forming tighter, more personal relationships with each other. While this is not directly tied to a standard definition of "community," it does align with how our participants described their own groups and communities.

Throughout the paper the distinction between a “group” and a “community” becomes (predictably) blurred, in alignment with how our participants articulated their own participation.

Online gaming groups and communities can include guilds and clans, which are often supported through tools built into the game itself, as well as less-structured groups, such as communities of interest around specific hobbies that are, at least tangentially, related to the game in question (e.g., [35]). Studies that investigate the social atmosphere and social engagements of online gaming groups exist within the broader HCI research space, including Nardi and Harris’ [32] descriptions of World of Warcraft communities in terms of the “light” and “mixed collaboration” social aspects of guilds, as well as Crenshaw and Nardi’s [11] investigation of how the social affordances of World of Warcraft have changed over time. Deeper investigations of how such groups engage socially have also included how groups might merge together, such as with Kiene et al.’s study [26]. Their project, which we will revisit in the discussion section, followed a successful and an unsuccessful World of Warcraft guild merger and highlights the importance of virtual *third places*—and the kinds of social activities that take place there—in managing a group’s culture. The social atmosphere of groups on the100 have also begun to be studied, including the use of social network diagram visualizations to understand a player’s role in their community [48, 49] and investigations into the impact of leveraging a group’s webpage on the100 to define a shared sense of identity (e.g., [45]). We build on this prior work to analyze how players’ social and game experiences are impacted by their participation in groups hosted by the100 and a combination of additional platforms.

In addition to the social atmosphere of our groups of interest, we also discuss how the size of these gaming communities is complicated by their use of multiple online spaces, and several prior studies have laid the groundwork for our project. In their work investigating successful and unsuccessful guilds in World of Warcraft, Ducheneaut, et al. argue that, in addition to the social interactions that take place within the group, the size of the group can have a significant impact on a guild’s success rate: based on their findings, 35 people appears to be the limit of “organic” group formation for that particular platform [15, 16]. Poor, however, found that much larger groups are possible, given the right design decisions within the game, the right set of community management tools, and the right approach to maintaining the community [38]. Similarly, and within the same context as our study, Schiller et al. [41] noted that there was no size limit to build stable groups in the100 as it focused on providing potential playmates. They found that the number of facilitators in the100 groups increases with group size, which contributes positively to the group’s organization. As we will report in the results and discussion sections, we found that our participants did perceive the size of the groups they engaged with to have an impact on the functioning and success of their gaming community, and that they developed specific processes for managing their groups’ sizes across their multiple spaces.

3.3 Matchmaking

Throughout this study our participants described experiences they had with various matchmaking tools and systems. These include tools built-in to Destiny, third-party Looking For Group (LFG) matchmaking tools, and a few of the LFG-like features within the100. The matchmaking systems that are generally studied in online gaming contexts focus on how players can be paired or grouped together for short-term activities, such as matches, dungeons, raids, or other lightweight collaborative activities. Nardi and Harris describe the groups that are formed to perform these activities as “knots” [32]. Research about these matchmaking systems range in focus from technical to social concerns. On the technical side, studies have proposed new methods for computing matchmaking algorithms (e.g., [5]) as well as ways to use matchmaking algorithms to pair players in such a way as to reduce network latency (e.g., [50]). Toward the middle of the spectrum are articles that evaluate the efficacy of the matchmaking algorithms in question, including using

analytic approaches to understand how well the matched teams perform (e.g., [27, 47, 52]). Closer to the social end of the spectrum are studies about how to use social relationship data to improve the experience of being matched for temporary games [25]. In this paper, we explore how our participants perceived the *social* quality of the matchmaking they experienced through the 100 and the other platforms they used, in comparison to other methods of finding players to play with. However, an investigation of the accuracy or optimization of matchmaking algorithms is outside of the scope of this project, and we do not address how matchmaking algorithms can be improved with regard to how well the teams that are generated *perform* together.

Our paper is more aligned with the matchmaking-related research that focuses on longer-term relationship building, either through the formation of friendships or communities. Braithwaite has proposed that the matchmaking mechanisms within World of Warcraft have shifted the experience of playing the game from one of collaboration to one of individual effort; it is so easy to be paired with others for short term game content that “other players are now generated by the game in much the same way as landscapes, NPCs, and hostile creatures” [6]. Watson, Watson, and Zheng have revealed that finding friends to play with can be difficult for players, and that “players add friends through a diverse set of possible sources” [51]. Based on the results of a survey study, these authors built a recommendation system for pairing friends based on network topology features and link-prediction algorithms. While they found their friend recommendations were unsuccessful, their study opens up a space for exploring alternative strategies for pairing potential friends. Freeman and Wohn’s study [20], which investigates the team-building strategies of eSports teams, similarly begins to discuss the role of matchmaking tools in the development of friendships. Our study, in this context, focuses less on the mechanisms of how players are matched together through these matchmaking systems and more on how they incorporate—and experience—these systems in relation to the multiple spaces they maintain for their gaming communities.

3.4 Social Media Ecosystems

The concept of social media ecosystems is somewhat similar to our proposed concept of multi-space communities. In a social media ecosystem, the entity using the multiple social platforms to accomplish the goal of socializing is an individual person. In our concept, the entity relying on multiple platforms to pursue the goal of socializing is a group or a community. While this difference has significant implications for how the concepts can be studied, there are many ways that we can build on social media ecosystem scholarship.

One set of social media ecosystem scholarship has focused on how communication can take place across multiple channels and platforms. Research about how and why couples speak to each other across multiple channels, for example, has pointed toward several benefits for cross-channel communication, including how multiple channels can be used in the process of avoiding or resolving conflicts [42] and how the choice of channel involves both an assessment of that channel’s capabilities as well as the affective dimensions of the conversation [10]. With a similar focus on a channel’s affective dimensions, Griggio et al. argue that individuals who customize their communication apps do so to express themselves and to represent the relationship they have with the person(s) they are communicating with [21]. Nouwens et al. have built on this research to argue that communication apps should provide multiple places within the app for conversations to take place, more opportunities for apps to work together to support conversations, and more flexibility for conversations to be decoupled from the specific apps or platforms that are used [33]. We build on this line of scholarship in our discussion section to extend these arguments for customization and flexibility to our study’s context.

Another set of social media ecosystem scholarship has focused on how multiple platforms provide opportunities for individuals to explore different identity expressions and presentations to

various audiences. In an eSports context, Li et al. have investigated the impact that various kinds of interactivity across livestreaming platforms have on the ability for gamers and eSports commentators to present themselves as professionals [30]. Research on how members of marginalized or stigmatized groups make use of multiple platforms has demonstrated that audience management and presentation management across multiple platforms for these users requires additional skills to navigate “complicated gender constructions” and “privacy affordances” [34], potential “ripple effects” that an action on one platform can have for a separate platform [12], and the “trapdoor” workarounds required to avoid participating in online spaces that might seem safe and then turn out not to be so [37]. In our discussion section, we highlight how we think this line of work on presentation across multiple spaces can be used in future work on multi-space communities.

Hwang and Foote’s study of small subreddit groups represents a separate kind of social media ecosystem research that engages with the way topical fora potentially overlap [24]. They describe how smaller subreddits are sometimes able to survive, despite potentially being too small, because there is a symbiotic relationship between the small subreddit and the broader Reddit ecosystem, centralized in a user’s front page. While our focus on groups that make use of multiple platforms differs from work on topics-based fora that exist in multiple spaces on the same platform or across platforms, we are able to build on this concept of symbiotic relationships between spaces in the discussion section to describe how the multiple spaces our groups of interest use overlap in mutually-beneficial ways.

4 RESEARCH APPROACH

In this paper, we report on the results of an interview study and subsequent thematic analysis [7] that included 17 interviews with 31 users of the100. We present these data as part of an instrumental case study approach [18, 43] in which the case unit analyzed was the100 platform. This study was approved by our university Institutional Review Board. An individual affiliated with the100 has been included as an author of this paper, based on their involvement in drafting text to help describe how the100 functions. However, they were not involved in conducting interviews or analysis, and the remaining authors have no connection with the100 outside of their research interests in the platform.

4.1 Data Collection

We conducted 17 semi-structured interviews (average length of 61 minutes) via videoconferencing software (e.g., Discord, Skype, Google Hangouts) or over the phone, depending on participant preference, with 31 participants (listed in Table 1). Participants were recruited through a screener survey. Prior to beginning the study, the research team had been in contact with the creator of the100 through our pilot interviews about the project. He volunteered to link our screener survey as a clickable banner at the top of the front page of the100, which read “*FOR SCIENCE: Purdue University is doing a research project on us about online communities! They’re looking to interview you about your experience, let them know if you’re willing to help!*” One of the lead moderators of the general Discord server associated with the100 also linked the screener survey in the “announcements” channel of that Discord server, using the same description. The survey allowed users to register their interest in the study, as well as their preference for if they would like to be interviewed alone or as a group with other members of their gaming community. We received 89 responses to the survey. We contacted the first 13 individual responses and the first 6 group responses to schedule an interview time, relying on an estimation of participation drop rates and how many interviews we thought we would need in order to reach data saturation. If we heard no response for 5 days, we removed that individual or group from the pool and contacted the next individual or group. Of the 17 interviews we conducted, 12 were group interviews (with a maximum group size

Table 1. Participant Details. * indicates a leadership role; + indicates a “sherpa” role

No.	Pseudonym	Age	Gender	Time using the100	Familiarity with grouping tools	Most used platform
1	Agwe *+	57	Male	3 years	fairly familiar	Xbox
2	Brian	48	Male	3 years	a little familiar	PlayStation
3	Cindy +	50	Female	2.5 years	only uses the100	Xbox
4	Dianna	50	Female	2.5 years	pretty familiar	PS4
5.1	Ethan *	42	Male	-	familiar	PC
5.2	Ernie	20	Male	1.5 years	very familiar	PS2
6	Frank +	33	Male	2.5 years	casually acquainted	PC
7.1	George +	24	Male	4 years	not very familiar	Xbox
7.2	Greg *	24	Male	5 years	not very familiar	Xbox
7.3	Gary +	33	Male	5 years	not very familiar	Xbox
8	Hank	42	Male	2.5 years	pretty familiar	PS4
9	Isaac +	49	Male	3 years	used a few	PS4
10	Jerry	51	Male	4 years	fairly familiar	PC
11	Kim *+	37	Female	3.5 years	somewhat familiar	PS4
12	Leonard *	35	Male	4.5 years	fairly familiar	PC
13	Mark +	31	Male	3 years	very familiar	PC
14.1	Nathan *+	43	Male	4 years	not very familiar	PS4
14.2	Nick	43	Male	5 years	familiar	PS4
14.3	Neal +	30	Male	4 months	very familiar	PS4
14.4	Nico	60	Male	4 years	familiar	PS4
14.5	Noah *+	47	Male	4.5 years	very familiar	PS4
15	Owen *	38	Male	2 years	very familiar	PlayStation
16.1	Paul *	45	Male	2 years	not familiar	PlayStation
16.2	Phil *	30	Female	4 years	not familiar	PlayStation
16.3	Pablo	27	Male	3 years	not familiar	PlayStation
17.1	Richard *	40	Male	4.5 years	familiar	Xbox
17.2	Rob *	36	Male	3 years	somewhat familiar	Xbox
17.3	Roger *+	36	Male	3 years	not very familiar	Xbox
17.4	Reese	21	Male	3 years	somewhat familiar	Xbox
17.5	Ron *	34	Male	2 years	somewhat familiar	Xbox
17.6	Rico	60	Male	1.5 years	not very familiar	Xbox

of 6) and 5 were individual interviews. Group interviews followed the same interview protocol as our individual interviews, and they offered an opportunity for participants to discuss their responses with each other as well. Since participants in group interviews already knew each other, this offered a rich opportunity for deeper responses to questions. All but one of the participants in the group interview settings practiced thoughtful turn-taking during their interviews. In the one group interview where a participant tended to dominate the conversation, the interviewer enforced turn-taking by explicitly asking the other participant, by name, to add to the discussion of a question (for more information on group interviewing, see [36, p. 476] for a discussion about “group interviews with naturally occurring or already existing groups”). The average age of our participants was 39 years old ($SD=11$, $min=20$, $max=60$), and all but one of our participants had more than a year’s worth of experience with the100. Within Table1 an asterisk (*) indicates that a participant described their role within the group as one of several kinds of “leadership” roles, and a plus sign (+) indicates that the participant acts as a “sherpa” within the group, meaning that they help other players with content within the game.

All interviews were audio recorded, and all researchers took handwritten notes to inform further analysis. The first author participated in all but two of the interviews, and they were assisted

by undergraduate students who participated in the majority of the interviews as part of their qualitative research training. The final two interviews were conducted by these undergraduate team members. After each interview was completed, the audio recording was transcribed using Temi, an automated audio transcription service. Multiple members of the research team listened to the audio to sensitize themselves to the data [7], while also correcting any inaccuracies made by the automated transcription service and anonymizing any instances of player names and group names.

The semi-structured interviews followed four primary domains of interest. We include a few example questions in this paragraph, but it should be noted that with semi-structured interviews in a largely constructivist study it is natural for these questions to appear differently for each participant in order to keep the interview flowing like a conversation. First, we asked participants about their motivations for using the100 and how they use it in their gaming activities. Within this domain, we used follow-up questions to probe, without directly asking, for descriptions about the groups they have joined through the use of this tool (e.g., “When you first joined, what were your expectations of the group you were put in?”). Our focus was in soliciting narratives that either foregrounded the use of the tool as a means to seek game-related achievement, as a means for finding social fulfillment, or some combination of the two. Second, we asked participants to describe to us as many of the tools they could think of that their groups used. Our goal in this domain was to understand our participants’ perceptions of those tools (e.g., “Can you explain what each of these tools are for?”). Third, we asked participants about how their groups function, including how the group has changed over time, how leaders in the group encourage participation, and if their groups have any group-specific goals (e.g., “What’s happening in your group that actually gets or encourages people to participate?”). Fourth, we asked about how our participants viewed their own participation in their groups, including what role they play in the group, as well as how they describe activities their group engages in outside of the game, if any (e.g., “Are there some members of your group that you know better than others?”). The goal of this domain was to probe for additional information about our participants’ perceptions of their relationships with other members in their groups.

4.2 Data Analysis

We analyzed our interview transcripts using an iterative thematic analysis approach [7], beginning with sensitizing ourselves to the data through reading each transcript multiple times, as well as through unitizing the transcripts so that they could be loaded into Airtable, a relational database tool that we find useful for coding and thematizing qualitative data. In the initial round of analysis, the first and fourth authors conducted an open coding of five randomly selected interviews. The purpose of this coding was not to seek consensus, but rather to outline areas of interest and identify sensitizing concepts for further examination and prioritization in axial codes. These open codes were then organized and discussed among the entire research team in order to generate a set of axial codes for confirmatory coding. Each interview was then coded using these axial codes by at least two researchers. This phase of coding allowed us to reach data saturation across all themes [39], and reach some level of consensus about the breadth of the findings within each theme. Because we used pair coding, we did not calculate inter-coder reliability; all coded excerpts were validated by two or more researchers. The themes from our analysis that we report on in this paper are listed in Table 2, grouped by how they appear in our findings section. In Table 1 as well as in the findings section that follows, participants are referred to by pseudonym. For interviews with multiple participants, pseudonyms start with the same letter. This allows our readers to see which quotes came from the same conversations, even if they come from different participants, while maintaining anonymity.

Table 2. Themes, organized by how they appear in the findings section

Theme	Definition
“The big challenge is finding people to play with”	Includes participants’ experiences with attempting to find other people to play with, as well as their challenges with scheduling times to play
“Other player-finding tools can be useful, but there is less accountability”	Covers participants’ comparisons of the100.io with alternative tools, including LFG sites on Reddit, LFG apps specific to Destiny 2, and tools internal to Destiny 2
“Practical benefits of being in a group”	Encompasses the wide range of benefits our participants expressed, focusing on those benefits that are especially game-related (social and interpersonal benefits are captured in a different theme)
“Additional communication platforms are necessary”	Captures our participants’ descriptions of other systems and tools their groups use to communicate
“The importance of finding like-minded players”	Captures instances where our participants used the phrase “like-minded people,” and similar phrases, to describe their groups
“Productively fuzzy group boundaries”	Used to highlight portions of our conversations with participants where it was difficult to understand where the edges of their groups are located
“Community attachment, loyalty, and drama”	Used to foreground moments in our interviews where participants referenced heightened emotions, particularly those related to their relationships with other members of their groups

5 FINDINGS

One of the primary contributions of this paper is in providing empirical accounts of the experiences our participants have had with coordinating gameplay sessions through the100.io, in combination with other platforms. The most common narrative we found throughout our interviews was that our participants, before joining the100, were unsatisfied with how they were able to play Destiny 2. They were unsatisfied with how much repeated effort was required to find people with whom they could play some of the harder and more rewarding content; they were unsatisfied with the need to have to learn how to adapt to each new person’s play style; and they were unsatisfied with how disconnected and anonymous their experiences felt. All of our participants described the100 as a solution to those issues, even though there were variations in how our participants’ groups made use of the100 in combination with other platforms and group spaces.

We have organized this findings section based on three scenarios that represent different points along a spectrum of player’s needs to interact with others in the game. These include practical and immediate needs (“I want to play with a group”) to the more social and long-term needs (“I want to play with a consistent group” and “I want to join a community of people I can play with.”) We

use a fictional person, Yvonne, to illustrate the complexity of these interactions through pastiche scenarios drawn from our interviews. Within each subsection we discuss the themes that align with that particular need.

5.1 “I want to play with a group”

Yvonne—our fictional player for the purpose of illustrating these common player goals—has been playing *Destiny 2* for a few weeks now, making her way through the game’s campaign story and focusing on single-player content. During that time, she has accumulated a few game tasks that will require her to engage in multiplayer content. She wants to start out with something lightweight to ease into this kind of gameplay, so she sets her sights on finding two additional players in order to play a three-player “strike.” Her options for finding players for this kind of content in-the-moment (at the time data were collected) include:

- (1) Relying on mechanisms built into *Destiny 2* that can match her automatically with other players looking to play the same activity right now;
- (2) Using a third-party Looking For Group tool that will allow her to find players who are seeking to play the same activity right now or in the near future;
- (3) Using the100.io, either as a kind of Looking For Group tool for activities now, or as a way to sign up for events her 100-clan members are organizing to take place soon or later in the week.

Option 1, in-game tools. There are several matchmaking mechanisms that are built into *Destiny 2* that can help players group up for immediate multiplayer content, to varying degrees of success. The mechanisms that support Player-Versus-Environment (PVE) group activities—those activities that focus on the story content of the game, rather than the competitive content of the game—support the less complex, 3-person content (e.g., “strikes”) fairly well, but struggle to support the more difficult, 6-person content (e.g., “raids.”) A feature called “Guided Games” is meant to help match individual players together for the more difficult in-game content, but players often discount this feature due to the long wait times, the incompatible skill levels of those with whom they are matched, and the misalignment in player commitment to completing the content. Player-Versus-Player (PVP) content—the content that is focused on the more competitive side of the game—has better matchmaking support in-game, including the way that a player team is formed through matchmaking, as well as how player teams are matched against other player teams.

While in-game matchmaking has its purposes, our participants preferred to rely on the100 for filling empty player spots. Isaac characterized *Destiny 2*’s matchmaking as *“handy, but it’s not the same. It doesn’t feel as stable and as reliable. And also there’s no community building in it.”* These in-game mechanisms operate on an as-needed basis. In other words, Yvonne can use them to be matched with players who want to complete the same activity at that moment, but she cannot use them to schedule activities ahead of time.

Option 2, external LFG tools. To help mitigate the poor performance of in-game matchmaking, other tools have been developed over time that operate as “Looking for Group” (LFG) tools. LFG tools span a wide range of implementations from specific websites like www.destinylfg.net and <https://ftw.in/game/destiny-2>, to Reddit subreddits devoted to the purpose, such as [/r/Fireteams](https://www.reddit.com/r/Fireteams/), [/r/DestinyLFG](https://www.reddit.com/r/DestinyLFG/), and [/r/CruciblePlaybook](https://www.reddit.com/r/CruciblePlaybook/). Events posted through these tools are visible by everyone else who uses that tool, which can often include several thousand people at a time. This option could be helpful for Yvonne, given that the events posted here are for activities that will occur within a shorter time frame (i.e., events that will take place now or within the next few hours).

As with *Destiny*’s built-in matchmaking tools, our participants recounted their experiences with standard LFG tools as largely frustrating. Issues with toxic and discriminatory behavior were

common, particularly for our female participants. Even more common were stories of LFG groups falling apart because one of the players “flaked” or dropped out of the event at the last minute or during the event. The ‘positive’ LFG stories from our participants were about instances where the events played out as expected, with only minimally objectionable behavior.

Option 3, the100.io. Yvonne’s third option for finding players to join her for an immediate activity is to use the100. If she is in a clan on the100, then she can see events her 100-clan members are organizing that are taking place within the next few hours or later in the week, or she can choose to try to schedule her own event with her 100-clan members. She also has the option to use the100 *as a kind of public LFG*. While this is not the primary motivation most players have for using the100, there are a few mechanisms that operate more like traditional LFG sites, such as the ability to post an event publicly, which allows all users of the100 to see the event, rather than just the member’s of one’s 100-clan.

5.1.1 Theme: The Big Challenge Is Finding People to Play With. The ability for the100 to help players schedule multiplayer game sessions *ahead of time* was often mentioned by our participants as a primary motivation for joining the100 in the first place. When asked why he uses the100, Agwe explained:

“I can set a posting up on the100 and say I want to run a Nightfall strike at 2 o’clock on Wednesday afternoon. [Then,] people sign up for it and there’s wait lists. So for people like me who may have not a lot of [“real life”] friends on, it made it kind of easier to guarantee I didn’t have to wait around to find a game. Cause I’m an adult, I have a job. Time is valuable” (Agwe).

By allowing him to schedule these events ahead of time and ensure that people would be willing to participate, he was able to avoid the potentially long wait times associated with collecting a group of people who will not “flake out” and who are willing to engage in a complex in-game activity in-the-moment.

Even those who did have “real life” friends who played the game mentioned the struggle to find people who shared similar schedules, as Neal explained:

“I had bad experiences raiding in [Destiny 1], which was raiding with randoms. So when I started trying to do team activities in [Destiny 2], we had first started with a group of us that were already friends. But it’s really tough to organize our schedules as friends to do a lot of this stuff” (Neal).

Complicating the pragmatic issues related to finding other people to play with in Destiny and similar online games is the courage often required for new players to play with strangers online for the first time. Yvonne, for example, might feel that she is too new to the game to be able to engage in some of the more difficult or complicated activities, even with the help of other players. This can make it intimidating to try to join a group. A few of the100’s features were developed specifically to help combat this initial, high barrier to entry:

“The ability to flag things as ‘beginners welcome’ or you know, ‘we will be teaching you how to do things,’ um, really made it a little bit easier for me to get involved with [the100]” (Hank).

These explicit “beginners welcome” signals, found within a player’s clan as well as more publicly on the100, were referenced by many of our participants as the catalyst that helped them initially engage with multiplayer content.

5.1.2 Theme: Other Player-Finding Tools Can Be Useful, But There Is Less Accountability. When describing what they found so valuable about the100 as a scheduling tool, many of our participants

relied on comparisons they drew between the100 and the wide range of other player-finding tools that exist. Even in those instances where our participants needed to rely on the100's more public-facing mechanisms, they reported more positive interactions among other players than when they have engaged in the same searching behaviors through more traditional LFG sites. The difference in these experiences is based primarily on a few key features built into the the100 platform, including player profiles and a karma system. These features, as our participants described them, can provide a greater sense of accountability among players.

For example, Ethan describes how they vet other players by looking at their profiles on the100:

"So, you know, you get, there's a lot of stuff that you can do with the100 to kind of vet people or get a feel for them. Um, and it's, it really is a nice tool to have. Um, but you don't need to know the people for the content. You don't need to be friends with them. But if you can vet that they have the knowledge and the expertise, then you're at least at a higher level of potentially [finishing] than doing LFG where you don't know who you're going to get" (Ethan).

Part of this vetting process involves checking a player's Karma score. Karma on the100 is determined by how many other players have intentionally recommended you as a good player to play with, and this score is displayed on a player's the100 profile.

In addition to these practical kinds of accountability, our participants also repeatedly made the distinction between players they met through LFG and players they met through the100 as one of relationship-building. Paul clarifies:

"And the thing with LFG is that [...] the mentality is different. Like you're, you're not expected to invest in this person. When I say invest in this person, I mean stay in the relationship. [...] chances are you're never going to see or hear from that person again" (Paul).

Isaac explained that, for his organized events, he will go through the trouble of using the PlayStation controller to send a message over PlayStation Network (PSN) if he thinks he will be late or unable to make a scheduled raid with his group, *"because I am actually concerned about what other people think about me because I see it as a community. And I see—I remember folks who flake"* (Isaac). Likewise, Greg describes their transition from using these LFG services to using the100 as:

"...you've gone through LFG and occasionally you find a full group to go through and do all that really crazy end-game stuff on, and then maybe you keep playing with one of them. Maybe? If not, you just kind of let them all go. There's nothing you have to, no connection to any of them. And then this [the100] comes along like, 'hey, come and play with people that are like you. They have the same schedules as you. They're the same age as you, you know, they're all super relatable to all of this stuff that you're doing.' And that's great. That sounds perfect to me" (Greg).

For many of our participants, as with Paul, Isaac, and Greg above, the100 changed the way they approached playing with other people online, primarily by lowering the amount of effort required to find others to play with and increasing the practical and the relationship-level accountability involved in these multiplayer activities.

5.2 "I want to play with a consistent group"

Now that Yvonne has joined a few multiplayer activities within the game and is feeling more comfortable with that process, she has started noticing how much effort it can often take to find a group every time she wants to play. What she would like to be able to do is have a regular group she can play with. Her options for finding such a group include: joining a clan through in-game features,

which rely on platform-specific messaging systems (e.g., PSN chat); relying on Reddit posts in one of a number of subreddits dedicated to the game; or to use a tool like the100 to search through clan profiles and join through that system. Here we will focus on how players use the100 in combination with other tools, platforms, and spaces. We begin by describing the theme, “Practical Benefits of Being in a Group,” which explores the game-related benefits of—and motivations for—joining a group through the100. We then describe how these groups incorporate a collection of tools, in addition to the100, to coordinate communication amongst group members.

5.2.1 Theme: Practical Benefits of Being in a Group. Building on the core feature of the100 as a tool for allowing players to schedule game times, one of the motivations for joining a group was to ensure that there were people around who would be ready and willing to join those scheduled activities. When describing why he began to focus more on using the100 than on using LFG tools to fill spots in his raid groups, Ethan said:

“I wanted groups I could constantly do like activities with [...] and just schedule it around like a familiar group of people. So I literally just went on Google and just searched up, ‘how do you get into a Destiny 2 clan?’ and eventually found an article that said, ‘Oh yeah the100, it’s got a whole bunch of clans on it.’ [...] I just wanted to do, like, end game content and I didn’t have reliable people I could do it with on a regular basis” (Ethan).

This ability players had through the100 to be able to play *regularly* and *reliably* with a group opened up new ways of engaging with the more challenging content of the game, as well as new ways of conceptualizing what it means to play online multiplayer games.

“It changed the way I played the game, because after that point I always had people to play with. Like in created sessions I knew exactly when I was going to have a Raid. Um, so I can plan my schedule accordingly. You know, clear it with my girlfriend” (Frank).

While other tools could enable players to find other people to play with in the moment, our participants were attracted to the100 because it aligned the need to find a time to play with the need to find a dependable group of other people to play with. Groups that were not able to completely fill out an event with players were supported by the100’s LFG-like features, which allowed them share their group events publicly if they needed to fill more spots. Brian explains how that mix occurs:

“We try and post multiple days in advance, two or three days in advance to see if we can get enough people [from our clan]. If, the day of, you don’t have enough, all you have to do is one click of a button to make it public. And then when it’s public, now you’ve got a chance of picking up other people” (Brian).

This mix of relying on one’s 100-clan and, when the moment calls for it, the LFG-like features on the100 to fill spots is part of what helps ensure a steady stream of players so that waiting to engage in an activity can be kept to a minimum.

5.2.2 Theme: Additional Communication Platforms are Necessary. While the100 is a useful tool for scheduling game time and for finding groups to join, one predominant theme throughout our interviews was that additional communication tools were often required in order to provide sufficient coordination and collaboration support to these groups. The100 has a few built-in options for chatting with other members of one’s 100-clan, including a chat area that is visible on each group’s web page as well as made accessible through the the100 app. However, the majority of our participants’ groups relied on channel-based collaboration platforms like Discord and Slack, with a

few participants also mentioning group chat applications like WhatsApp, Facebook Messenger, and GroupMe.

Several of our participants also mentioned how their 100-clans experimented with multiple tools to find the right fit. Richard described his group's transition from GroupMe, which was "kind of limited," to Slack, because "we can have channels and [...] a bunch of things that make the experience more, feel more like, uh, a gaming community" and then, eventually, to Discord, because it "is more about games and there's some features that I personally prefer."

The flexibility of some of these tools, especially Discord, allowed for a wide range of approaches for integrating these technologies into a group's communication strategy. Some groups, for example, found it easiest to keep a clear separation, where the100 was used strictly for scheduling and Discord was used for communicating with the group outside of scheduled game times. Other groups incorporated a hybrid approach, often relying on Discord bots integrated with the100's API to allow for scheduling-related posts on the100 to automatically appear within the Discord server as well. This approach ensured that members of the group who preferred one tool over the other could continue using the tool they find most comfortable. Agwe, for example, preferred using the100 *"to set games up and play games"* because he is *"not really a person to sit on Discord and send messages all day about what's going on."* The Discord bots that help him tell his group when he wants to play allow him to avoid using Discord himself, while still keeping him connected.

Where Agwe preferred to keep his involvement focused on game related activities, most of our participants described their groups as much more engaged with each other. Dianna told us about how their group strives to stay active by organizing weekly ice breaker activities through Discord so new members can feel more welcomed and can find opportunities to interact: *"we do try to get, um, the noobs, you know, the rookies and things like that, um, to participate and let them know, you know, 'hey, hit us up at any time,' and we use the new members channel for that"* (Dianna). We heard many similar stories about the maintenance activities that our participants engaged in to ensure that their groups were active and participating together as well as possible. The assumption many of these groups make is that stronger interpersonal connections could help the group stay more active when playing Destiny. We revisit how these collections of systems serve these more community-oriented functions in the next section.

5.3 "I want to join a community of people I can play with"

Over the past sixth months, our fictional Yvonne has realized two things: first is that Destiny 2 has become her primary game; second is that she enjoys the social benefits of being able to play with a regular group of people. She likes the group she initially joined through the100 and the group a friend of a friend invited her to, but these two groups are pretty focused on getting on, accomplishing game tasks, and then logging off. She has decided she wants to find a "main" group; a group that socializes inside and outside of the game. From this point on in our findings, the distinction between a "group" and a "community" becomes less straightforward, which aligns with how our participants discussed their groups and communities. While we view this ambiguity as a productive tension, we attempt to clarify, as much as possible, within the text.

In this section, we move beyond some of the more pragmatic or practical concerns explored in the previous sections related to why individuals sought out groups on the100 toward the social and interpersonal concerns that we heard from our participants about seeking a community. We begin with the ubiquitous reference to finding "like-minded players" that we heard from almost all of our participants. Next, we explore the fuzzy boundaries that groups have as a result of relying on assemblages of tools for managing their communities and community spaces. We end this section with stories from our participants about their deep connections with their communities, and how those deep connections impact the way they play their games.

5.3.1 Theme: The Importance of Finding Like-Minded Players. The way our participants described finding other people was not completely utilitarian, limited to just putting bodies in spots. They also sought, in many instances quite explicitly, to become part of some sort of community or social group of like-minded people:

“I started using [the100] mainly to get in touch with, um, more people of like minds. I used to use, um, LFG say for Destiny. I used to use it all the time, and it ended up being a lot of one sided people, a lot of not very friendly. (Interviewer: Yeah.) So we went to 100, to—actually, I was introduced to the100 by [Phil] here—uh, to try to find better like-minded people who are willing to be open minded, willing to learn and teach others” (Paul).

Phil agreed with Paul, adding that *“the whole entire idea of the100 is to put you in a group of 100 like-minded [players].”*

This goal of cultivating longer-term relationships with other players occasionally clashed in some of the mixed in-group and out-group settings described above, where gamers from outside of these groups were not as invested in the social side of the gaming experience. George explained how this community-focused approach could turn some people away:

“Well a lot of people just join the group to do sort of like a quick LFG sort of thing. Uh, you know, like they just join like one or two games just cause they need to or they’re trying to find a group to do something, uh, like right then and there. So they barely give anyone any time. But uh, the nature of our group [...] we’re more like a bunch of close friends than just like a sort of um, pass by [in the night] sort of deal. So that usually turns away a lot of people that are just trying to get something done right then and there versus actually trying to find like a, a homestay or like a main group to play with” (George).

Those who were turned off wanted something quick and easy to accomplish, and often did not realize that the rest of the group intentionally planned further ahead in order to work together better.

The goal of finding like-minded players could become very specific. Dianna, for example, sought to join a female-only community:

“I was very specific when I started looking online because I wanted to find a group of females, female gamers, but also I’m an older gamer. I’m not quite as young as probably the demographic generally is. Um, in fact, I’m probably old enough to be all of their mothers. So, uh, so I was kinda, you know, there was a little bit of trepidation that I approached it. But, um, ultimately I did find [female-only clan name], um, for the 100 in order to make my gaming experience better” (Dianna).

Her motivations for this were that, in addition to being hesitant to join a group in general, she was also hesitant to spend any significant amount of her time playing online with any groups that might be hostile toward her or diminish her experience.

For some, a “like minded” player also included being “similarly skilled.” Neal, for instance, had friends who played Destiny 2 that were significantly below his perceived skill level. He found himself looking for a group that better suited his level of play because *“the difference in skill level with friends is also just a point of contention when it concerns more difficult activity. So I would look specifically for a clan that was active that would be willing to help or needed help with these kind of activities”* Neal was able to use the100 to discover groups that took a more serious approach to the game. These groups gave Neal a place where he could develop synergies with other players

to complete higher levels of content, and save the more casual content for when he was with his friends.

5.3.2 Theme: Productively Fuzzy Group Boundaries. One consistent element of our interviews that surprised us was how our participants discussed their groups in flexible ways, often so naturally that unpacking where each group was “located” took intentional digging. For our participants, when they discussed their “group” they were most often including anyone who participates in their Discord spaces, rather than limiting that word to describe only those who participated in the100 or within the in-game Destiny 2 clan. Ron explains this best:

“We’re so much more than the in-game clan. We’re this big group. We’ve got like 300 people in our Discord. Um, and so when we say the group, we’re talking, the big group. ‘Clan’ is a Destiny necessity, is basically all it is. But it doesn’t drive anything we do” (Ron).

In this and similar ways, participants clearly indicated that their group or community was not contained to a single platform, but instead existed across multiple online spaces.

In contrast to Ron’s group, which primarily engages through Discord, Greg’s group’s ‘homestay’ was the100 and within the game, with most but not all of the members also engaging in the Discord. When we asked him what he thought the members who chose not to participate on Discord were missing, he explained:

“They still join games, you know, we still talk to them on, uh, Xbox party. So they’re still part of the group. (Interviewer: What are they missing out on?) They just might not be in the, uh, the day to day shenanigans. Um, um, just stupid stuff we talk about back and forth. Um, oddly enough as a, as a thing, for some reason though, people will always in the morning say ‘good morning’ to everyone or things like that. So, you know, good, good little wholesome moments” (Greg).

When later asked about the other kinds of conversation his group has on Discord, he explained that even though he tries to cut down on having too many channels:

“There’s the general chat and that’s where everyone kind of just goes back and forth. Um, there’s, uh, a dank memes chat [...] There’s one for a group of people we call the degenerates. There’s a Skynet, there’s a lore and spoilers. So, like when Game of Thrones was going on, you know, this is where Game of Thrones discussion happened. It was not allowed anywhere else except in this channel” (Greg).

These extra, off-topic channels were where the extra relationship-building moments often took place for our participants.

A challenge with these fuzzy group boundaries across a few different platforms is that each platform has its own limits to how large the group can be. The100 has a soft cap at 100 members and a harder cap at 300, in-game Destiny 2 clans have a cap of 100 members, and Discord groups have no practical limit. The concern with a group’s size(s) and how it could be maintained was echoed throughout our interviews. Many of our participants mentioned that the size of their 100-clan is typically maintained below the 300 hard cap (and usually much lower) to help ensure some baseline of activity level among members. Brian speculates that when clans go above 100 people, they start getting “lazy” people who join just for the in-game perks of being part of a clan, rather than to actually participate in the community. Cindy similarly describes large groups as being potentially detrimental to community:

“Larger groups I think, I mean, it’s nice in some ways because you have more people to pull from, potentially. But on the other hand, with a larger group, it tends to actually splinter more, I think because there’s so many people that you don’t know. We’re

human. And we get comfortable with people we know and then you stop, you know, you say, well I don't know who that is. I'm going to join this group because I know that person" (Cindy).

For groups that became too full, the size of the group was typically maintained through some pre-defined metrics within each group. For example, many groups established that their members must meet a baseline of activity level (determined using Discord bots that connect to Destiny 2's API to pull out data for each player's characters) in order to maintain membership in the clan on the100. Frank illustrates the complexity here:

"We actually have uh, one of the private 100 groups. So it's actually closer to 300 people in that group. Um, in the Discord we have 376 people. Um, in the of the Destiny division, like, like 200 of them are in the Destiny division. At one point in time, we had two Destiny clans in game, cause you know, Destiny, they can only have a hundred people. But lately we've just decided to um, have rule-based, um, activity-based plan management, meaning that hey, you can be in the clan but if you're active, but you know, if you're not active for a while, we're gonna have to remove you to make space for more active people. So we set a activity quota. You have to play, you know, at least, um, it's, it's, you have to maintain an activity score of 30 for the month and you get one point for each clan mate and in each activity" (Frank).

Cleaning up these rosters becomes a job performed by a community manager or by other senior members of the group. As Jerry explained, "they keep spreadsheets. [...] they have a minimum quota every month of like, how many company activities you need [to participate in]" so that they can remove non-participating members in order to replace them with people who had been regularly playing with the clan more recently.

For groups with the opposite problem, maintaining a group that is large enough to be able to reliably fill player spots for some people was such a core motivation that some clans, once they noticed a dip in their activity, would attempt to merge with other clans in order to continue ensuring that they were regularly able to play:

"Um, we had a lot of people from clans that were becoming, not to say dysfunctional, but um, maybe they just weren't playing anymore. They were getting tired with the game, people had left. Um, so they really had nobody to play with. They couldn't even do three player activities with their clan anymore. So we actually migrated almost 20 people into our clan" (Brian).

5.3.3 Theme: Community Attachment, Loyalty, and Drama. We use this theme to capture some of the heightened emotions our participants referenced during their descriptions of moments when their communities underwent somewhat dramatic transformations. When describing instances where they had to consider leaving their groups, for any number of reasons, many of our participants compared such a change to what it is like to move to a new country. One of the main reasons for leaving a group that we encountered was because a participant changed which platform they played the game on. Ethan described this transition as a tough one, but that he had to switch to PC because, "I'm a PC guy, tried and true." When Destiny 2 released for PC, after he had been reluctantly playing it on a console, he said "it turned into a situation of 'where do I go?' I couldn't play with all these people on the100 that I had been playing with for years."

Another reason for leaving a group was if participation numbers began to slow down. This decrease in engagement was typically blamed on Bungie for releasing poor content updates during a season, as was the case for Hank, who described one of his struggles as,

“leaving those guys behind that I’d been playing with for almost three years. Um, it’s kinda hard. I mean, it wasn’t an easy decision. [...] People weren’t very happy and they were very disappointed with how the season was going and things were, they just, there was a lot of negativity that everybody was mostly talking about [playing other games]” (Hank).

Thankfully for Hank his prior group allowed him to stay in their Discord and they occasionally get to play together.

Other participants faced the decision to leave one group for a group that might be better suited to their play style, such as with Isaac, who explained that they would rather stick with their friends: “I don’t want to leave my buddy Bob behind. We’ve made our clan, we’ve got our funny name. That’s a good joke to us. And I’m reluctant to give it up out of nostalgia.” Rounding out this range of experiences, we heard from Dianna an account of what it is like to splinter off with a smaller group, only to return to the original group later. She initially left with the group of individuals who played the game well and accomplished the tasks she enjoyed accomplishing. However, she quickly realized that she missed the social atmosphere of the original group, despite her original assumptions about her goals, and moved back.

Ultimately, what our participants reported when discussing the impact of the100 on their social lives was similar to what Isaac told us:

“The exposure to other people and the connections that I’ve made through the100 completely changed the way I view video gaming. And that’s somebody who’s had 40 plus, you know, 40 years of video games. So that’s been a big deal. Um, and then the other part is discovering that just from my own personal satisfaction, the100 has again opened me up, changed the way I looked at gaming in terms of being a teacher, as a guide, and surprising myself with the amount of time and energy I was willing to sink into or am willing to sink into it” (Isaac).

These strong connections with others often proved to be more important to our participants than they originally thought they would be.

6 DISCUSSION: MULTI-SPACE ONLINE COMMUNITIES

In this section, we discuss the layers of responsibility we have seen throughout our data, including the responsibilities that are taken up by individual members and moderators of specific groups, as well as the responsibilities that we believe community platform designers and the creators of Destiny have for these communities that depend upon their platforms. We then discuss the impact that multi-space community configurations have on participation modalities, group maintenance, and the ability for groups to signal activity to outsiders through traces. Finally, we draw together our participants’ descriptions of how they experienced accountability and dependence to highlight how multi-space groups are able to support a wide range of interpersonal interactions and relationships through their configurations. We propose opportunities for future research and design throughout this section.

6.1 Multi-Space Community Management and Community Responsibilities

Our findings so far have opened up an opportunity to discuss who is responsible—and in what ways are they responsible—for the health of the multi-space gaming groups we have investigated in this study. In this section, we explore the relationship between these communities, the members who take on some of the management labor, and two additional actors who have some part to play in this responsibility: the creators of the content the community focuses on (in this case Bungie) and

the community platform designers (e.g., for the100, Discord, and other communication platforms). Throughout this section we propose potential avenues of future research and design in this area.

To help us think through the responsibilities group leaders and members, Bungie, and community platform designers have toward these communities, we reflect on our findings by leveraging Kraut and Resnick's proposed community design alternatives [28] as lenses: *structure*; *content and activities*; *sorting and filtering*; *external communication*; *feedback and rewards*; *rules and roles*; *access controls*; and *presentation and framing*.

The *structure* of these communities is determined in part by all three actors. Bungie impacts community structure through certain design decisions related to the game, such as the inability for players to play across platforms (e.g., Playstation players can only play with other Playstation players). At the time of data collection and analysis, "cross-play"² was still an anticipated feature by the Destiny 2 player community, but a much earlier implementation of this feature could have prevented many of the traumatic community "breakups" we heard about from our participants. Bungie and community platform designers also influence the size limitations of various spaces associated with the groups, which impact community behavior. As Crenshaw and Nardi [11] and Braithwaite [6] highlight in their analyses of how World of Warcraft's socializing affordances have changed over time, the developers of these kinds of multiplayer games have a responsibility for how people socialize within them. Group leaders and managers, meanwhile, wield a significant amount of power in deciding how other platforms and tools are interleaved to create the community's multi-space ecosystems [26], which we explore in more detail in the next section.

Each group's ecosystem, in turn, influences the types of *content and activities* in which participants can engage. We saw how some of these activities encouraged commitment to the community, such as events scheduled ahead of time, upon which members could depend. Group-led events also encouraged contribution to the community, such as with in-game events flagged with "beginner's welcome" or ice breakers planned every Friday. These group-focused events are deeply entangled with the *content and activities* that Bungie makes available to its players. Through stories about groups that experienced periods of low activity, our participants highlighted a responsibility that Bungie has to not release frustrating content that relies too heavily on game mechanics that players find tedious or unexciting. This relationship between in-game content and community health or community sustainability is worth further exploration in future work.

Sorting and filtering responsibilities can be viewed from all three actors' perspectives as well. Bungie's built-in matchmaking functions operate as a kind of sorting and filtering of the other players who are looking to engage in the same kind of content at the same time. Community platform designers rely on sorting and filtering to make it easy for members to find events that interest them or fit with their play style. Community members and leaders can lean on how they have structured their communities across multiple spaces to help sort and filter the kinds of social activities their members may or may not want to participate in, such as by separating gameplay organizing into one space (e.g., the100) and socializing into another (e.g., WhatsApp or topic-specific channels in Discord). In each of these cases, how well activities are sorted depends on several levels of actors, especially when access to those activities requires navigating multiple spaces (no matter how smoothly that navigation might be). This kind of conversation decoupling, including establishing norms within a community for how to use specific spaces for specific conversations, aligns with the call from Nouwens et al. to support flexible uses and inter-uses of communication channels [33].

The ability for the communities our participants spoke about to attract new members depends on how well that group can *communicate with external others* about what they do, how they play,

²Crossplay functionality was introduced in August of 2021

and how active they are. For our participants, this external communication seems to be handled primarily through their group’s webpage on the100, which allows them to *present and frame* information about the group’s goals, who they are, what activities they are currently organizing, and where the social action is (such as through links to their Discord server). These webpages occasionally also communicate a group’s identity through the merchandising they have available [45]. Bungie has built a platform that allows players to browse through clans as well, which similarly supports the need for groups to communicate with external others. However, our participants did not mention using this system, likely due to the limitations of clan representation within Bungie’s system which we explore more in 6.2. New “Looking For Clan” platforms are regularly announced, but are outside of the scope of this analysis. In each of these cases, the responsibility for sharing clan information is taken on by the community members, and the responsibility for providing a place for that information to be shared—and even for sorting and filtering it—is taken on by the community platform designers and by Bungie. This aligns with the community leader responsibilities described by Kiene et al. [26], and also includes a consideration for how that responsibility extends beyond community leaders to platform designers.

The remainder of the community design alternatives are decided primarily by the community members and leaders, the labor of which often blend the emotional and social labor involved in managing online communities [13] with the labor involved in creating and maintaining the technical infrastructure supporting the group. While the Karma system allows players to give each other *feedback* within the100 (more on this in 6.3), managers play a role in ensuring that players are engaging enough with the community. They are able to enforce community *rules* and expectations, such as those related to how active a member needs to be, through *access-controlled* mechanisms such as removing members and inviting wait-listed players. This is facilitated with a collection of bots, spreadsheets, and external tools. *Roles* across these multiple spaces could become quite tricky, as there are different role mechanisms baked into each of the group’s spaces. Most groups likely recreate their role structures across the multiple spaces they occupy, but how that happens is a question that is worth exploring in future studies.

By using these design alternatives to reflect on our findings, we are able to see how the overlapping and *ad hoc* interleaving of multiple spaces can both simplify and complicate community management efforts and community responsibilities. Questioning who owns the responsibility for maintaining the health of these communities has helped us better-understand the role that the community designers and content creators have in the lives of those who use these platforms. It is clear that many relationships depend on these tools, and exploring what that means for community platform designers is an important next step in this project.

6.2 Fuzzy Space, Group, and Participation Boundaries

In this section, we build on our understanding of how our participant’s groups exist across multiple online spaces to discuss the impact this multi-space configuration has on how group members can engage in their groups, how the boundaries of these groups are negotiated and maintained, and how the groups signal where the social action takes place.

6.2.1 Participation and Maintenance. The combination of collaboration mechanisms built into Destiny 2, the group-specific and LFG-like scheduling functions of the100, and the use of a group-based communication platform enabled our participant’s gaming groups to support a multiplicity of participation modalities. This aligns with online community recommendations from CSCW scholarship, e.g., [26, 28, 31] and is also reminiscent of Nardi and Harris’ [32] multiplicity of collaboration types among players in World of Warcraft. Across these multiple spaces, each group can define for itself how their members should or can participate. Kiene et al. [26] highlight the

importance of the kinds of activities that are facilitated by virtual *third places*. In our study we can see how members who want to primarily focus on the gameplay and seek only to accomplish specific tasks may do so, and members who want to share memes, discuss spoilers, and engage in “wholesome moments” with each other through such a virtual third place are also free to do so. This flexibility is particularly welcomed by those who are not always able to participate as much in the gameplay elements of their community as they would like. In those instances where they would normally be kicked out of their groups for lack of in-game activity, they are often encouraged to continue engaging in some, but not all, of the community’s spaces. As a result, what it means to be a member of a clan or group can often be ambiguous.

These fuzzy membership boundaries across the group’s spaces represented a fairly common maintenance issue for our participants: trying to keep track of who is “actually” in the clan. This seemingly simple task is complicated by the limits (or lack of limits) imposed on other spaces these communities use to maintain their player base. While the size limitations imposed on groups are not necessarily flexible, they are still largely seen as useful by participants in that they can keep the group to a manageable size, which aligns with findings from [16, 41] about the impact of group size on a community. For example, many of our members consider their “clan” to be those individuals who interact with each other through the clan’s communication platform (their Discord server, Slack workspace, WhatsApp groups, etc.), which often have no size limit. However, because the built-in “clans” maintained within *Destiny 2* have a hard limit of 100 people, groups have had to cobble together spreadsheets, Discord bots, and other player-tracking mechanisms to determine who should be able to participate in which spaces. These membership decisions impact the multiple spaces the community depends upon, similar to the “ripple effects” described by DeVito et al. that can occur when an individual takes actions in one platform of their social media ecosystem that impact the platforms that are interconnected within that ecosystem [12].

6.2.2 Spaces and Traces. In addition to the maintenance issues described above, groups that operate across multiple spaces also run into a challenge with signaling to potential new members that the group is active, depending on which space the potential new member finds first. Each group makes their own determination about which of their spaces is their “homestay,” or which of their spaces to imbue with more “place-ness.” Groups that use the chat on the100 appear more obviously active to an external audience, whereas groups that primarily chat through Discord or another service are less obviously active, especially if the Discord server is not publicly visible. In either case, groups that use the100 to coordinate their events can still demonstrate to outsiders that they regularly play with each other, which helps signal some level of continued engagement. One support the100 has in place for ensuring this activity level is visible is through its support of Discord and Slack bots through its API: when participants post events on the100, they can have them automatically also show up with links in their communication platform of choice. This enables flexibility for members to participate across a range of spaces and places, while also ensuring that a group’s activity is visible to outsiders. These signals of activity are, effectively, “traces” in the online space that can improve the legibility of that space’s role for the group that uses it. The flexibility afforded by bots, here, also aligns with design recommendations to decouple conversations from specific channels [33].

We can build on Hwang and Foote’s [24] analysis of small subreddits to hypothesize that these traces likely work in tandem with the traces that exist in the more public side of the100, too. They suggest that subreddits which might otherwise be too small “to survive on their own are likely sustained by the larger community” [24]. In their analysis, the ecosystem that comprises the small subreddits and the existence of each user’s front page creates blurred boundaries between a subreddit and Reddit as a whole. In our analysis, we can see how this can be extended to also

describe the fuzzy boundaries we observed between spaces within a single group—such as between recruiting players within one’s 100-clan and from the 100 more broadly—as well as the fuzzy boundaries between the multiple platforms each group uses. Future work can investigate to what extent these blurred or fuzzy boundaries can be leveraged as strengths, rather than complications, for online communities.

6.2.3 Research and Design Opportunities. The fuzziness of these boundaries supports multiple modes of participating in the group, where access to specific group spaces is entangled with the participation modes available to group members and non-members. Through their engagement across multiple spaces (Discord, Slack, WhatsApp, GroupMe, Bungie clans, PSN, Xbox Live, the100, etc.), we can see that these communities are represented more by their *collection* of tools, spaces, and places than they are contained by any one platform.

We argue that this multi-space community engagement has significant implications for CSCW scholarship and for the design of online community support tools. Future research on multi-space communities should continue to explore the boundaries, as they are experienced and as they are codified, between group spaces, platforms, and tools. This includes how members and non-members interact across those boundaries, and maybe also how different non-use desires of community members might be accommodated through these types of multi-space arrangements. Future community platform design work should consider how multi-space community managers could be supported in their need to track members across spaces, while still allowing for flexible group memberships across those spaces. A mechanism for keeping track of a group’s roster, for example, might need to be able to conceptualize multiple representations and size limitations of that group, as well as make it clear how members are or are not able to participate based on the spaces they can access. Additional research and design work could also explore how the traces of social activity are represented across a group’s multiple spaces and places, which is especially important for potential new members [9].

Additional research and design could also build on Griggio et al [21] to understand the impact of customization in these spaces. They explore how users of communication apps who spend time to customize their messaging apps (e.g., through creating custom emojis, naming the chat, or changing the background) sometimes do so in order to represent the relationship they have with the other person. In our context, this might be extended to further understand the customizations from a group perspective, such as how a group might customize their Discord server or their homepage on the100. This group or community perspective adds an additional layer of complexity to customization by highlighting how community members’ roles and responsibilities might intersect, foregrounding questions such as “Who gets to customize the space?” and “How can we capture how the group, as a whole, might feel about participation in this community?” Juxtaposing this with Kiene et al.’s [26] findings also highlights how these customizations extend to the kinds of third place activities that each group adopts into their community culture, which can make or break the experiences for new members as they learn how to interact with established community figures. All of these points can be further explored in relation to social media ecosystem work about how users consider their identity presentation across multiple platforms (e.g., [12, 30, 34, 37]) to consider both how members present themselves to their group across the multiple platforms that group uses as well as how the group is able to represent *itself* across those spaces to potential new members.

6.3 Relationships and Layers of Accountability

For many of our participants, the100 changed the way they approached playing with other people online. A distinguishing tension throughout our participants’ responses was between the utilitarian

descriptions they provided for why they wanted to become part of a group and the relationship-oriented descriptions they provided about their fellow group members. The evolution from extrinsic motivations (e.g., group membership as a gateway to productive gaming experiences, as in the friends list discussions in [51]) to intrinsic motivations (e.g., community participation as valuable in its own right) was not lost on our participants. We heard from players who were surprised about how connected they felt to their gaming communities, players who felt deeply conflicted and sad when deciding to leave a group for pragmatic reasons, and players who would go out of their way to support and manage various aspects of their community. These relationships were discussed in contrast to their prior gaming experiences; one telling quote we included above was from Paul about how “you’re not expected to invest in this person” from the LFG site, with the implication that you *are* expected to invest in your group members. Freeman and Wohn’s participants described a similar phenomenon as using matchmaking tools to find friends in a more “passive” way [20]. In these ways, while the practical benefits of being a part of a group often came first, they could lead to a broader understanding of the social value of participating in such a community of “like-minded people.”

A large part of this contrast between who to invest in and who to not invest in aligns with the level of accountability in a given player experience. On one end of the spectrum are the experiences where players who do not know each other are matched through LFG tools for one-off activities. One can expect to not encounter those other players again. The other end of the spectrum includes experiences where one is playing with individuals they interact with regularly, either “real life” friends or group members. A group’s use of multiple spaces helps to support these layers of accountability and multiple types of relationships.

One additional layer that the100 adds in between these two ends of the spectrum is the ability to easily blend groups made up of members and non-members. It might seem that the job of the100 would be “finished” once a gaming group decides to communicate primarily through Discord, especially in light of the way our participants were able to talk about being able to depend on other members of their group being around when they needed them. However, the ability to navigate the seams between the individual clans and the broader population of players who use the100 is an important part of how groups are able to rely on a steady stream of players to fill spots in their planned activities, similar to the relationship between small subreddits and Reddit in general [24]. We saw this playing out in the sections above with the ability to mark a group-focused event as ‘public’ if too few group members sign up for it in time. Without the100, groups would have to replicate this feature by recreating their event on an external LFG platform.

A second layer that the100 adds in between encounters with strangers through LFG and encounters with one’s group is the ability to hold otherwise-anonymous other players accountable for their behavior through profiles and the Karma system. Where Wallner et al. [49] highlight the role of this Karma system in identifying central players in these social networks, we see an interesting use of the Karma system in incentivizing this sense of accountability among the100 users. Our participants described using these features to reward players they interacted with as well as to find new groups to join based on how much Karma a group’s members have earned. While this system only supports positive accumulation of Karma points (it is not possible to negatively rank another player, only to give points or not), it was still able to provide our participants with an increased sense of comfort because they knew that even their encounters through public events posted on the100 were with players who cared about how they would be interpreted as Destiny players.

6.3.1 Research and Design Opportunities. Groups that incorporate multiple tools, platforms, and spaces into how they coordinate their game sessions and their community interactions are able to enjoy these flexible types of interactions, from casual interactions with strangers to the deeper

relationships we heard about our participants forming with their group members. However, these deeper relationships and dependencies do come with a cost: when members had to leave their groups, either because they were changing platforms or because they were seeking more active groups, those transitions often felt to our participants like life transitions. Fiesler and Dym explore a similar community transition [17], but their focus is on an entire community that must transition, and here we are interested in individual members who must transition. Future work in this area may wish to explore just how similar moving away from one's online gaming community could be to other life transitions, like decoupling one's digital life when going through a breakup [23], becoming a new parent, [3, 46] or seeking social infrastructure when moving to a new country [29]. This area is ripe for platform design work that considers additional ways to connect multiple platforms together. Our participants used the100 as a kind of glue in their multi-space ecosystems, but the100 was not originally designed for that use. How could future platforms be designed even more flexibly to support connections between multiple group spaces?

Future research and design in this space should also consider how the accountability mechanisms represented here are able to be translated or incorporated into other social platforms. The Reddit Karma system, for example, operates similarly, but allows for negative Karma to accrue. A similar system does not exist explicitly for Facebook, Twitter, or other prominent social media, but other metrics such as the number of followers or connections one has could be used as secondary measures for filling this gap. In each of these cases, these metrics are occasionally used to verify or "vet" other individuals online, despite the wide range of potential negative consequences [1]. In considering the multi-space role of these accountability systems, future work could explore how different types of profile metrics are used by community members *across* spaces. For example, how are members of Facebook, Twitter, TikTok, or Instagram communities vetting an individual's trustworthiness or likeability by consulting their multiple profiles on other platforms?

7 LIMITATIONS

This paper comes from a project that began as an instrumental case study about Destiny 2 players who use the100.io. As a result, all of our participants are individuals who use the100, and their experiences with multi-space online communities include the100 and the Destiny 2 game environment as at least two of those spaces. Future work that builds on this project should explore a more cross-sectional approach in order to account for multi-space communities that do not include the100 or Destiny 2 as at least one of their group's spaces. Additionally, we are limited in this project to individuals who have had mostly positive experiences with multi-space communities, because the multi-space community participants we encountered were those who stuck around within their groups. Stories that are missing include those who did not feel that they could keep up with, were not supported by, or simply did not enjoy the multiple tools and platforms that their group needed in order to function. Such stories of multi-space community failures will help to round out this area of scholarship.

8 CONCLUSION

In this paper, we presented an empirical account of how our participants' online gaming groups incorporated multiple platforms and online spaces into how their communities function. We found that gaming groups benefited from the use of multiple spaces as a way to navigate around the limitations of other spaces, to support multiple modes of participation within their groups, and to find new ways to connect with each other. We built on this empirical account to describe the concept of multi-space communities, and to discuss the implications that multi-space configurations have for how online communities signal where they socialize to outsiders, how community members negotiate fuzzy boundaries between and surrounding the online spaces, and who is responsible

for the management and success of these multiple spaces. Future CSCW research and community platform design opportunities can build on this project to further explore the current and potential impacts of multi-space communities and the tools or platforms that connect those spaces.

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