

# Toward a Design Theory of Game-Mediated Social Experiences - A Study of Among Us

Derek Haqq  
Department of Computer Science,  
Virginia Tech  
Blacksburg, VA, USA  
dhaqq@vt.edu

Morva Saaty  
Department of Computer Science,  
Virginia Tech  
Blacksburg, VA, USA  
morvasaaty@vt.edu

Jonathan Thomas Rukaj  
Virginia Tech  
Blacksburg, VA, USA  
jrukaj@vt.edu

Saylee Marulkar  
Virginia Tech  
Blacksburg, VA, USA  
msaylee@vt.edu

Justin Israel  
Virginia Tech  
Blacksburg, VA, USA  
justinis@vt.edu

Emily Newton  
Virginia Tech  
Blacksburg, VA, USA  
emilyrn18@vt.edu

Rudra Patel  
Virginia Tech  
Blacksburg, VA, USA  
rpatel30@vt.edu

Stephen Tan  
Virginia Tech  
Blacksburg, VA, USA  
stephtan@vt.edu

D. Scott McCrickard  
Department of Computer Science,  
Virginia Tech  
Blacksburg, VA, USA  
mccricks@cs.vt.edu

## ABSTRACT

The COVID-19 pandemic has greatly affected face-to-face social interaction with and among relational partners - relatives, friends, and others. Prior to the pandemic, many people relied on face-to-face social play experiences to help them maintain relationships and satisfy relatedness needs. However, growing coronavirus-related concerns have made such activities unwelcome or inaccessible, leading many to turn to technology-mediated experiences, as a safer alternative means of supporting recreational play with non-proximal relational partners. But how does one design technology-mediated recreational play experiences to satisfy a diverse range of user needs, interests, and preferences? To explore this area of interest we study the social experience afforded by the multiplayer game, **Among Us**. We conduct a diary study with students enrolled in an undergraduate HCI course and report on the findings of a post-study reflective activity. Our findings highlight that casual interdependent games that explicitly and implicitly foster social interaction among players, do provide opportunities for satisfying remote play social experiences when augmented by rich communication technologies.

## CCS CONCEPTS

• **Human-centered computing** → **Computer supported cooperative work**.

## KEYWORDS

Digital Games, Remote Play, Social Casual Games, Among Us, Social Recreation

### ACM Reference Format:

Derek Haqq, Morva Saaty, Jonathan Thomas Rukaj, Saylee Marulkar, Justin Israel, Emily Newton, Rudra Patel, Stephen Tan, and D. Scott McCrickard. 2021. Toward a Design Theory of Game-Mediated Social Experiences - A Study of Among Us. In *Extended Abstracts of the 2021 Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '21)*, October 18–21, 2021, Virtual Event, Austria. ACM, New York, NY, USA, 6 pages. <https://doi.org/10.1145/3450337.3483469>

## 1 INTRODUCTION

The COVID-19 pandemic has greatly affected day-to-day social interaction with and among romantic partners, relatives, friends, and others. For many, the COVID-19 pandemic, and the accompanying health and safety measures and concerns, introduced barriers that limited face-to-face social recreation activities with loved ones [12]. Long-distance relationships and the onset of physical ailments are two other examples of barriers which may impose similar constraints. Regardless of the nature of the barrier, studies have shown that relational partners often consider face-to-face social recreation activities to be a critical part of their preferred relationship maintenance strategy, i.e. the actions and behaviors people adopt to help them maintain their relationships with loved ones and fulfill relatedness needs [2, 4]. Limitations imposed on such a critical aspect of daily life often motivate relational partners to consider alternative means of engaging in social recreation, likely triggering a transition from relational maintenance strategies which rely on face-to-face social interactions, to “socially distant” or remote interactions. Prior research has provided evidence that digital games can foster social recreation experiences and support the fulfillment of relatedness needs [9, 10, 20, 21]. However, much of the work in this area focuses on examining the effect of specific digital game

---

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

CHI PLAY '21, October 18–21, 2021, Virtual Event, Austria

© 2021 Copyright held by the owner/author(s).

ACM ISBN 978-1-4503-8356-1/21/10.

<https://doi.org/10.1145/3450337.3483469>

characteristics on the play experience [9, 21]. Little work has been done exploring the design of social recreation experiences which may include social casual gaming as part of the greater whole. This research aims to explore this area of interest by examining the social experience created through play of the multiplayer game, **Among Us**. We conducted a diary study of the online multiplayer game **Among Us** to identify the elements of such experiences that participants felt best support a shared social recreation experiences with remote friends. We hope to derive useful insights to inform the future design of game-mediated social recreation experiences.

## 2 RELATED WORKS

While some studies have provided evidence that technology usage may negatively impact feelings of connectedness and relatedness [1, 5, 11] there are other bodies of work that illustrate that technology use could also have positive effects on relationship health and feelings of social closeness and connectedness [7, 16, 20, 24]. Prior studies have demonstrated that people often choose to play digital games as part of their efforts to satisfy basic psychological needs associated with Competence, Autonomy, Relatedness, among others [17, 23, 25]. In their research work, Schell et al. [20] explored if and how the playing of digital games affected the levels of social connectedness and social isolation experienced by older adults. Using a mixed-methods research approach the authors studied the social play experiences of 73 older adults who participated in an 8-week Wii Bowling tournament. Study participants were organized into teams of 3 to 4 players each. Weekly in-person play sessions were then arranged for the teams of participants, with each session supported and observed by members of the research team. Quantitative and qualitative analysis of collected data revealed a significant increase in the social connectedness scores following the 8-weeks of play, when compared against pre-gameplay scores. The authors also observed a significant decrease in loneliness scores following the 8-weeks of play. In related work, Seah et al. [21] explored the experience of older adults who participated in a 4 week study involving playing a multiplayer, educational digital Bingo game. Seah et al. [21] observed similar improvements to social connectedness, reporting that social co-play, interactivity, collaboration, the ability to talk to other players, the ability to make new friends through play, all contributed to participants' enjoyment of social game-mediated play experience. Wang et al. [24] investigated the effects of playing video games among on family satisfaction and family closeness. The results of this study revealed that family members who played video games together more frequently achieved greater family closeness. Depping et al. [8] probed how in-game friendship develops and how it influences individual well-being. The authors also illustrated that highly interdependent play with or without competition and low in toxicity facilitate the creation of in-game friendships. They concluded that games with mechanics and design elements that foster cooperation and interdependence among players, could be used to improve play experience and increase social bonds [9]. Collectively, such work highlight the potential benefits afforded though explicitly designed social experiences which leverage digital games.

## 3 AMONG US

**Among Us** [15] is an online multiplayer social deduction game developed by InnerSloth LLC [6] and playable across multiple platforms including PC, iOS, and Android devices. Though initially released in 2018 [6] the game saw a sharp rise in popularity during the COVID-19 pandemic near the latter half of 2020.

In **Among Us**, players find themselves traveling on a spaceship bound for home, with players assigned to the role of crewmate or secret alien impostor. Crewmates perform maintenance tasks to keep their failing spaceship in working order, all while trying to figure out the identity of the secret imposter(s) masquerading as part of their crew. Imposters masquerade as crew members, they pretend to perform the duties of a crewmate while covertly attempting to sabotage the spaceship's systems and kill other players. **Among Us** utilizes "social deduction" as one of its main game mechanics. Players meet periodically to deduce and vote on the identity of potential imposters. Imposters use meetings to divert suspicion onto innocent crew members. The game provides a built-in text-chat to support player communication during these meetings. Players vote on the identity of the imposter at the end of a meeting. The player receiving the most votes are then ejected from the ship into space. Gameplay continues if the ejected player was not an imposter or if there are other imposters still on the crew. Imposters win if there remains an equal number of imposters and crewmates or if sabotage destroys the ship. On the other hand, crewmates win if they eject all imposters out of the spaceship or complete all maintenance tasks [6].

## 4 METHOD AND ANALYSIS

Our primary interest was to explore the social experience afforded by casual social games [13] like **Among Us** [15]. We wanted to develop a better understanding of whether or not participants felt that the game was an enjoyable, technology-mediated social experience, and the factors that contributed to such feelings. To accomplish this, the researchers crafted, tested, revised, and published a diary study assignment and post-study reflective activity for 92 students enrolled in an undergraduate HCI course. Amidst the COVID-19 pandemic, during the period spanning the end of October 2020 into November 2020, students were asked to use **Among Us** for a period of at least one week (7 days), for a minimum of 20 minutes per play session, and to provide daily self-evaluation reports using either the in-situ logging or snippet technique [18]. To conclude the diary study assignment the first and second author conducted a series of post-study focus group sessions with all student participants. The insights garnered from review of diary data informed the approach and questions used during the post-study focus group sessions. These sessions were recorded with participant permission, each session included 5 to 6 participants and were approximately 30 to 45 minutes in length.

The first and second author noted that discussions from two of the focus group sessions captured many of the sentiments expressed by other participants within their diary entries and focus group feedback. We subsequently invited the members of these two groups to participate in this research study and to engage in a follow-up focus group session with the first and second author. Six participants gave consent.

Of the six participants, three were experienced and regular **Among Us** players, while three had not played the game before the diary study assignment. These six participants typically played the game with members of their social circle; they also occasionally played with strangers. Additionally, participants were only marginally familiar with each other at the time of the study.

The first and second author transcribed the focus-group contributions made by each of these six participants, as well as any feedback captured in subsequent discussions. The first and second author then performed thematic analysis [3, 14], a method for arranging large amounts of unstructured qualitative data, to analyze these transcriptions. We first applied independent open coding [19] to transcriptions to categorize participants' responses. We then used axial coding [19, 22] to identify connections between and among the coded data, then extracted emergent themes. This research paper reports solely on the themes derived from the analysis of feedback captured from the transcripts of these six undergraduate students.

## 5 FINDINGS

The following are the themes and sub-themes that emerged from our analysis of collected data.

### 5.1 Augmented-Communication rules and play provide enhanced opportunities for social connections

Most games include a single set of rules and a system for playing which direct game play in the manner intended by the designers/developers. Analysis of transcribed data revealed that most study participants adopted two distinct but interrelated sets of rules to guide the social-play experience.

The first set of rules adopted were those defined by the **Among Us** designers/developers. An example of one such rule, specifically addressing player communication, is succinctly expressed within the following quote: "While everyone is fixing up the ship, no one can talk to maintain anonymity. Once a body is reported, the surviving crew will openly debate who they think The Impostor is." [15]

The second set of rules adopted by participants, we will refer to these as augmented-communication rules, were those inspired or defined by game experts, social media streamers/content creators, or by groups or communities of players – who use out-of-game third-party Video and/or Voice conferencing technologies, such as Discord and Zoom, to support player communication, instead of the text-chat feature provided within the game. These augmented-communication rules both echoed and supplemented the formal **Among Us** rules, defining boundaries of etiquette and communication behaviors, while at the same time ensuring that the additional affordances provided by these third-party technologies support rich social interaction between and among players, without detracting from the fairness and fun aspects of the experience.

**5.1.1 Adoption of augmented-communication rules and play as the new "normal"**. Most participants indicated that they augmented their play experience by using third-party Video/Voice communication software like Discord, Zoom, and Google Meets.

These participants felt that **Among Us** play naturally included the "augmented" communication and coordination affordances provided by such technologies. Participants adopted this "augmented" approach for a variety of reasons; some were inspired after watching streaming video of social media and online influencers playing **Among Us** with the aid of such third-party Video/Voice communication software. These participants observed how popular social media personalities played the game – the technologies they used, the setup and configuration of the "play" environment, the actions and behaviors exhibited and considered normal, and how the technology supported communication and gameplay. Study participants then adopted similar norms within their gaming groups and play sessions.

*"We took off most of our ruling for how the game should be played based off of what popular streamers did..."*

In other cases, participants deferred to communication and coordination practices previously established within their own gaming groups or communities, practices which were already second nature prior to playing **Among Us**. These participants noted that such practices became so ingrained that they transcended across most games. However, participants did admit that members of the group/community made allowances for refinements, acknowledging that the needs of each specific game, and the norms established by the wider gaming community for that game, as exemplified by popular gamers and streamers, could influence the practices adopted by their collection of players. This augmented-communication play approach was so well established that a few players could not envision playing **Among Us** and other multi-player games in any other way.

*"I personally would refuse to play with people if they were not using voice[channels to communicate]...all the people in my games would have to be in Discord"*

**5.1.2 Rich Communication options are favored for game play involving deception.** **Among Us** is a game about communication and deception, players routinely meet in-game to discuss, debate, and identify imposters. The game does not natively support voice or video chat, players are therefore expected to use the in-game text chat for in-game communication. Most participants found the text chat option to be unappealing, with some highlighting poor usability of the feature on mobile devices. Participants also noted that some of the excitement, tension, and "mystery" was lost when using the text chat, when compared against using voice or video chat, as it limited player expression, sense-making, and interpretation of player dialog. Elaborating upon this point one participant noted that deception was an important part of the play experience and the fun. They expressed frustration that the text-chat reduced the challenge inherent in convincingly deceiving fellow players, as well as the challenge in discerning if other players were being deceitful or not. On the other hand, participants expressed delight that voice or video chat enhanced the play experience and fun.

*"the introduction of a voice chat in that sense, almost adds to the experience of the game, because anybody can lie over text, but it's difficult to lie and sell it through your teeth. You know what I mean? ... especially while someone's talking to you and you have to come up with*

*something on spot... I think it's a lot more difficult and I think it adds an element of... an almost dynamic element in the game."*

We did not explore the distinct effect of voice vs video chat any further within this study. However, participants did indicate that voice chat was used more commonly, with video chat being relegated to play experiences with close family and friends.

**5.1.3 Interdependent game mechanics serve to mediate a rich social experience when augmented by voice and video communication.** By design **Among Us** leverages cooperative and interdependent play elements [9], requiring players to engage socially, with rules governing when and how players should communicate, when they should not, and the focus of the ensuing conversation - the debate regarding the identity of the imposter(s) and discussions on what crewmates were doing, or claimed to have been doing, prior to the meeting. Communication within **Among Us** is primarily governed by the rule that players should only debate the identity of the imposter(s) during team meetings and that ghosts (killed crewmates) should not contribute to these discussions. The rules discourage communication outside of these specific times.

In actual practice however, study participants alternated between two types of conversations. Participants used meeting-times for conversations related to **Among Us** play, while also taking the opportunity afforded by non-meeting-times (during rounds, between rounds, and after being eliminated) to engage in casual conversations with fellow players. Non-meeting conversations typically involved players discussing everyday things, learning about each other, catching-up, expressing amusement, recalling amusing experiences, and the like. The game's embodiment of Casual Game Design Values [13] - Acceptability, Accessibility, and Simplicity (low cognitive exertion, familiar game maps, etc) - provided opportunities to connect by allowing players to split their attention between playing the game and socializing with fellow players. Participants found this "switching" of conversations, to be a routine, yet enjoyable and critical part of the social experience afforded by **Among Us** sessions which utilized third-party conferencing technologies for player communication. Some noted that the built-in text chat option was less appealing because it did not effectively support opportunities for such forms of social interaction. While reflecting upon this point some participants came to the realization that their true motivations for continuing to play **Among Us** came from the enjoyment derived from the social experience mediated by the game, not the game itself.

*"the point of me playing this game was not really to enjoy myself, more to catch up with friends; and that's where I got my enjoyment from."*

Participants admitted, in retrospect, that the game was "simple" and did not adequately satisfy many of the common non-social motivations for playing online games [25]. In concluding these discussions some participants indicated that the social experience mediated by the game was not always a satisfactory one, highlighting that experienced satisfaction depended significantly on group composition, the motivation of individual players within the group, and other factors related to player, group, and game dynamics.

*"it's not really enjoyable if you're not playing with friends."*

*"it [playing Among Us] was also really competitive at times, depending on which group of friends I played with. My fraternity is just a group of guys my age. So they were... at each other's throats playing the game. But other friends, they were more ... chill about it, and more like an actual social endeavor instead of a competitive gamer just trying to win. So it was really interesting."*

Most study participants agreed the **Among Us** game only partially contributed to the social experience and the experienced satisfaction, that a great part of the experience was due to the combination of play and opportunities to communicate and socialize. Some participants suggested that the game was entirely "swappable", that such social experiences could be fostered by any game that provided opportunities to interact socially with relational partners. Another participant found that the social experience fostered by the game, provided new opportunities for them to share a common interest with friends, family, and other relational partners. Such opportunities were even more cherished when changing circumstances - the introduction of COVID-19 safety measures (self-isolation, social distancing), the passage of time, life changes, distance separation - disrupted established relational routines.

**5.1.4 Communication + Play.** Noting that participants repeatedly referenced the opportunities for social interaction afforded by **Among Us**, we asked to participants to compare a voice/video call with remote friends, against engaging in a recreation experience like an **Among Us** play session. One participant provided the following response:

*"It [daily life during the COVID-19 pandemic] was kind of getting boring just sitting home all day, we would talk but there would be without purpose. So we were talking but...what would we talk about? People were sitting home every day just doing their work and there was no new entertainment, and then playing this game, in a sense, connected us by giving us a general purpose. Playing while having conversations that related to the task sometimes or just having a random conversation while having a purpose to the game, that's how I felt during the game."*

Other participants echoed similar sentiments, that routine conversations with friends had the potential to become "boring" because there was no recent event, new shared experience, or everyday item-of-interest to discuss.

One participant remarked -

*"it's better to play a game when you're hanging out online instead of just sitting around chatting. It [Among Us] kind of gives you this nice medium to kind of play over, where as opposed to kind of sitting on Discord and being latent and sitting in a chair and talking to someone, you're kind of doing something, and you're being active, and you're being mentally active while you're doing it."*

Other participants alluded to similar concerns, that conversations with remote friends, though pleasant and desirable, were not always

mentally engaging, that they needed more stimulus to satisfactorily support the social experience. This could be due to participants having experienced extended periods of low-mental-stimulation due to their adherence to social distancing practices stemming from the COVID-19 pandemic. One participant remarked that the in-game play experience could provide such added stimulus.

*“There’s usually something going on in the game that will give you something to talk about so it kind of allows you to keep perpetuating that conversation”*

## 5.2 Game characteristics mitigate barriers to shared social recreation

Many commented that they found **Among Us** to be a simple game but that this simplicity - low end graphics, simple game play, no requirement for special gaming equipment, free versions available across multiple platforms - actually made **Among Us** more “accessible” [13], allowing them to play with others from a wide variety of different age groups, backgrounds, and interests. One of the participants informed us that she took the opportunity provided by the assignment to play the game with co-located family members. The participant remarked that the game brought them together more than other options. Some participants indicated that they appreciated the readily available community of players who were open to playing the game with strangers. They observed that it was not always possible (or desired) to play with loved ones. They felt that having such a community of people with a shared interest provided opportunities for social interaction where “people did not need to wait for their friends to be available”.

## 5.3 Connection through deception

**Among Us** is a game of deception, where the imposter attempts to deceive members of the crew by pretending to be one of them, hiding their actions and building trust, fabricating and relaying stories of their whereabouts and actions, while misdirecting other players into believing that another player is the imposter. Central to the game for the imposter, therefore, is the “art of the lie”, establishing a credible cover story while convincingly accusing others. Central to the game for the crewmates is to gather sufficient information to discern which players are telling the truth vs which are not. Participants found these elements to contribute significantly to the fun, even more so when the game is played with third-party video and voice conferencing software which augments player communication. Participants described that this element of the game prompted them to think deeply about what they knew or believed about their fellow players, in order to ascertain who was telling the truth in discussions about the imposter or to convincingly craft a means of deceiving other players. Participants expressed amusement when recounting experiences where their deceptions were successful or when they were successfully deceived by friends.

*“When I played the game with them and I was like ‘I didn’t know you could think like that’ so that was the biggest surprise for me and I got to know more about people.”*

## 6 DISCUSSION: DESIGNING SUCCESSFUL GAME-MEDIATED SOCIAL RECREATION EXPERIENCES

Our findings reaffirms that there is still much to be explored in the research space encompassing the design of game-mediated social recreation experiences. Based on our limited findings we believe that designers of social game-mediated experiences should consider more deeply the overall social experience intended for users when games may be used in conjunction with other technologies. Furthermore, designers should consider how players adopt or appropriate games, and opportunities to integrate player-preferred communication technologies, rules, and norms, into gameplay. A key takeaway is that a multiplayer game may provide a reason for players to meet, a common “spectacle” that can be discussed, and a medium to support somewhat stress-free social interactions; yet the game may only minimally contribute to the experience outcomes desired by players. While social interactions during and after gameplay - catching up, conversations about everyday life, post-game discussions about moments during the game - may often be perceived as secondary to the experience, our participants reflected that this benefit was what drew them to the game and kept them playing. We observed that game mechanics which subtly facilitated player cooperation and interdependence did support the social experience. This was similar to observations made by Depping and Mandryk [9] in their study of the effect of those game mechanics on social closeness. The first and second author found the aspect of gameplay involving deception to be an interesting area for future study, with specific focus on game mechanics which prompts introspection of one’s knowledge of a peer player and/or reflection on a peer player’s character, not necessarily centered around deception. In the context of **Among Us** this cycle of introspection and reflection centered around a player evaluating if the claims made by a peer players was in fact true. It would be interesting to explore to what extent such a cycle of introspection and reflection on the characteristics or knowledge of a player who is a friend, contribute to the feeling of connection among players, the sense of a shared social experience, and the overall interest in playing the game. Participants expressed their belief that successful social games should leverage rich forms of communication and motivate players to engage in game-related discussions, rather than strictly engaging players to coordinate strategy to accomplish a mission. To support social connections such games should also offer “downtime”, periods where play provides opportunities for the player to split their attention to engage in out-of-game social interactions.

## 7 CONCLUSIONS AND FUTURE WORK

This paper presents preliminary findings derived from the analysis of focus group discussions with select participants of an **Among Us** diary study exploring the social experience afforded when users play the game while using third-party video/voice conferencing technology. We observed that the casual nature of the game (easy-to-use, low cognitive demands, familiar maps, minimal technology requirements) [13], combined with interdependent game mechanics requiring players to collaborate and communicate [8, 9], and the ability of players to augment the play experience with preferred

voice/video conferencing software and communication rules, offered a recreation experience that participants found to be enjoyable, dynamic, and socially meaningful.

Our findings illustrates that online multiplayer gameplay can provide enhanced social opportunities and benefits when combined with technology that supports rich player communication. Further, our investigation found that third-party video/voice conferencing technology; augmented-communication rules and norms; game mechanics which leverage interdependent play and promote communication between players; all have a positive effect on player enjoyment and contribute to a player's sense of shared social-experience. The results of this study highlight opportunities for further more-directed exploration of designed recreational play experiences which leverage digital games; avenues that we plan to explore with the goal of developing a design theory of game-mediated social experiences. The authors plan to further study such forms of technology-mediated play and to use established instruments for evaluating player experience under specific conditions

## ACKNOWLEDGMENTS

Sincere thanks to all our participants and to our reviewers for their helpful feedback!

## REFERENCES

- [1] Helmut Appel, Alexander L Gerlach, and Jan Crusius. 2016. The interplay between Facebook use, social comparison, envy, and depression. *Current Opinion in Psychology* 9 (2016), 44–49.
- [2] Arthur Aron, Christina C Norman, Elaine N Aron, Colin McKenna, and Richard E Heyman. 2000. Couples' shared participation in novel and arousing activities and experienced relationship quality. *Journal of personality and social psychology* 78, 2 (2000), 273.
- [3] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative research in psychology* 3, 2 (2006), 77–101.
- [4] Daniel J Canary, Laura Stafford, Kimberley S Hause, and Lisa A Wallace. 1993. An inductive analysis of relational maintenance strategies: Comparisons among lovers, relatives, friends, and others. *Communication Research Reports* 10, 1 (1993), 3–14.
- [5] Hui-Tzu Grace Chou and Nicholas Edge. 2012. "They are happier and having better lives than I am": the impact of using Facebook on perceptions of others' lives. *Cyberpsychology, Behavior, and Social Networking* 15, 2 (2012), 117–121.
- [6] Wikipedia Contributors. 2018. Among Us. [https://en.wikipedia.org/wiki/Among\\_Us](https://en.wikipedia.org/wiki/Among_Us).
- [7] Marianne Dainton. 2013. Relationship maintenance on Facebook: Development of a measure, relationship to general maintenance, and relationship satisfaction. *College Student Journal* 47, 1 (2013), 113–121.
- [8] Ansgar E Depping, Colby Johanson, and Regan L Mandryk. 2018. Designing for friendship: Modeling properties of play, in-game social capital, and psychological well-being. In *Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play*. 87–100.
- [9] Ansgar E Depping and Regan L Mandryk. 2017. Cooperation and interdependence: How multiplayer games increase social closeness. In *Proceedings of the Annual Symposium on Computer-Human Interaction in Play*. 449–461.
- [10] Nicolas Ducheneaut, Nicholas Yee, Eric Nickell, and Robert J Moore. 2006. "Alone together?" Exploring the social dynamics of massively multiplayer online games. In *Proceedings of the SIGCHI conference on Human Factors in computing systems*. 407–416.
- [11] Nicole B Ellison, Charles Steinfield, and Cliff Lampe. 2007. The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication* 12, 4 (2007), 1143–1168.
- [12] Derek Haqq and D Scott McCrickard. 2020. Playing Together while Apart: Exploring Asymmetric and Interdependent Games for Remote Play. In *Extended Abstracts of the 2020 Annual Symposium on Computer-Human Interaction in Play*. 253–256.
- [13] Annakaisha Kultima. 2009. Casual game design values. In *Proceedings of the 13th international MindTrek conference: Everyday life in the ubiquitous era*. 58–65.
- [14] Jonathan Lazar, Jinjuan Heidi Feng, and Harry Hochheiser. 2017. *Research methods in human-computer interaction*. Morgan Kaufmann.
- [15] Innersloth LLC. 2018. Among Us. <https://innersloth.com/gameAmongUs.php>.
- [16] Carman Neustaedter and Saul Greenberg. 2012. Intimacy in long-distance relationships over video chat. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. 753–762.
- [17] Richard M Ryan, C Scott Rigby, and Andrew Przybylski. 2006. The motivational pull of video games: A self-determination theory approach. *Motivation and emotion* 30, 4 (2006), 344–360.
- [18] Kim Salazar. 2016. Diary Studies: Understanding Long-Term User Behavior and Experiences. <https://www.nngroup.com/articles/diary-studies/>.
- [19] Johnny Saldaña. 2015. *The coding manual for qualitative researchers*. Sage.
- [20] Robyn Schell, Simone Hausknecht, Fan Zhang, and David Kaufman. 2016. Social benefits of playing Wii Bowling for older adults. *Games and Culture* 11, 1-2 (2016), 81–103.
- [21] Erik Tiong Wee Seah, David Kaufman, Louise Sauvé, and Fan Zhang. 2018. Play, Learn, Connect: older adults' experience with a multiplayer, educational, digital Bingo game. *Journal of Educational Computing Research* 56, 5 (2018), 675–700.
- [22] Anselm Strauss and Juliet Corbin. 1998. *Basics of qualitative research techniques*. Sage publications Thousand Oaks, CA.
- [23] Jukka Vahlo and Juho Hamari. 2019. Five-factor inventory of intrinsic motivations to gameplay (IMG). In *Proceedings of the 52nd Hawaii International Conference on System Sciences, Hawaii, USA, 2019*. HICSS.
- [24] Bingqing Wang, Laramie Taylor, and Qiusi Sun. 2018. Families that play together stay together: Investigating family bonding through video games. *New Media & Society* 20, 11 (2018), 4074–4094.
- [25] Nick Yee. 2006. Motivations for play in online games. *CyberPsychology & behavior* 9, 6 (2006), 772–775.