If Only I Had Someone to Play With: Sociality in Single Player Board Games

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Abstract

Since 2004, the tabletop board game market has seen a surge in solo compatibility. COVID-19 restricted multiplayer board gaming, attracting new players to the world of solo play. Despite that, games research has somewhat overlooked explanations as to why solo board gaming is a growing phenomenon. This paper takes a multidisciplinary approach, considering scoresheets, gaming capital, and chores, to examine whether sociality exists in solo board games. The importance of sociality in solo board games is also brought into question, highlighting benefits and flaws of group presence, including negative effects of social influence. Motivations of solo players are explored through a questionnaire and session report, presenting three themes: social reasons, genre preferences, and playstyle choices. Conclusions drawn provide practical applications for tabletop designers, outlining how they can more effectively approach the design of solo games or solo variants.

Keywords

Board games; single player; gaming capital; sociality; *Scythe.*

Introduction

A solo, solitaire or single player board game involves one individual assuming the role of the sole player in the game, with no other participants. In the 2010s, single player compatibility emerged as a feature with newly published board games. According to BoardGameGeek (Pedersen, 2018), one of the largest and most utilised forums for tabletop games (Kritz et al., 2017), 24% of board games published in 2018 provided solo compatibility, an inflation of 11% from 10 years prior (Pedersen, 2018). In 2018, the 1 Player Guild for solo board game players, ranked as the second most popular guild on BoardGameGeek (Hernandez, 2018), where it continues to gain popularity, attracting over 10,000 guild members between 2015 and 2020 (Hernandez, 2020). Although trends depict solo board gaming as a growing phenomenon, there is little research about the social dynamics of solo board games, nor the social dynamics embedded within them.

Hromek and Roffey (2009) reviewed existing literature on the use of multiplayer board games in social and emotional learning. They emphasized the positive advancements multiplayer board games provide in developing socioemotional skills among young people, including regulating negative emotions, taking turns, sharing, acting fairly, and showing respect. However, there is a lack of research exploring whether socioemotional skills can emerge from solo board games, and if solo board game players value socioemotional skills.

Blogger Soltis (2017) identified a solo gaming stigma within the tabletop hobby community, suggesting that solo board games are frowned upon as antisocial because they lack the presence of other individuals. Another blogger, Nonnenbroich (2018), highlighted that solo board gaming is stigmatised as an out of place activity despite other activities, such as playing video games or watching movies, being normalised and not as harshly frowned upon, whether enjoyed individually or socially. Nonnenbroich also noted that most gamers are introduced to gaming in social settings, through board game sessions with family or friends. This is supported by Taparia's (2023) survey findings, that showed 82% of Americans partake in family game nights, introducing younger generations to tabletop play. However, this may create associations that board games necessitate a social presence, an assumption solo board gaming does not conform to.

This study challenges the antisocial stigma associated with solo board games, aiming to explore whether solo board games truly lack social elements. Furthermore, the paper investigates whether solo board games require social aspects, and how significant social aspects are as a motivation for solo play. This paper intends to provide insight into the importance of solo variants in board games and to improve development strategies for single player variants of board games.

Background

Throughout this paper, sociality refers to connections to other social groups (Alexander, 1974). Sociality can manifest through indirect actions, like writing something down that someone may read later, or direct actions, such as learning something that gets shared with others in a subsequent play session. The distinction lies in the eventual presence of a social group.

Gaming Capital

Stenros et al. (2009) contended that "few single player games are completely devoid of a social element" (p. 84), explaining that games serve as a source of status and that playing a multitude of games contributes to the development of status among peers in gaming communities. Their work aligns with Consalvo's (2007) idea of gaming capital, an adaptation of Bourdieu's (1984) theory of cultural capital. Consalvo argued that "even the most linear game can be experienced in multiple ways, depending on a player's knowledge of past games . . . all of that knowledge, experience, and positioning helps shape gaming capital" (p. 4). Walsh and Apperley (2009) noted that "gaming capital marks the movement of knowledge and skills from one form of capital to possibly obtain leverage or capital in another" (p. 10). This is not confined to specific games. Playing a particular game not only increases your expertise when playing the same game again, but also develops knowledge and skills that contribute to understanding when playing other games. Joorabchi and El-Nasr (2011) reported that players with prior experience playing first-person shooter games outperformed participants with no prior gaming experience in a 3D puzzle game. For solo board games, playing solo games increases understanding of board game mechanics which, in turn, provides an internal understanding that can be applied to playing multiplayer board games. This transfer of knowledge acquired through solo play within a social context supports instances of sociality in solo board games.

Based on Bourdieu's (1984) notions, capital in itself is social; it increases the sense of belonging to a certain social class. Gaming capital mirrors this, heightening the sense of belonging to a gaming community. Molyneux et al. (2015) discussed "a spillover effect from gaming social capital to social capital in the real world" (p. 393), noting how the sense of community formed within gaming capital contributes to social capital outside of games. If players can obtain gaming capital through solo board games, they can support a form of sociality.

Chores

Xu et al. (2012) highlighted the importance of "chores"; these are aspects of board games which could be considered unenjoyable. Xu et al. argue that chores are the foundations of social play. They include "enforcing the rules through social agreement," "interactions around object manoeuvring," "communication when waiting for someone to take a turn," and "collaborative learning" (Xu et al., 2012, pp. 8–10).

"Enforcing the rules through social agreement" pertains to instances where a player is accused of breaking them. Typically, players engage in a discussion, with players arguing that their intended action adheres to the rules, while others may disagree, leading to a consensus being reached. "Interactions around object manoeuvring" refers to monitoring another player's turn whilst they take it. "Communication when waiting for someone to take a turn" encompasses discussions that occur between turns. "Collaborative learning" encompasses teaching the rules to fellow players. Xu et al. conclude that "chores are integral to social play" (2012, p. 12). Without discussions about rule breaks or discussion between turns, board games lack crucial aspects of social interaction and become less enjoyable. This contradicts the notion that solo board games have sociality, as chores require other players to be present. Discussions between turns fail to occur when only one person is present, and neither can rules be explained or debated. So Xu et al. would seem to suggest that single player board games lack this form of sociality. It could be argued that board game setup is a form of chore due to the time it takes, which occurs in both solo and multiplayer board games, but setting up does not require social interaction and thus does not fit among social chores. Yet Xu et al.'s focus on chores might be considered reductionist. Seeing chores as the sole determinants of social aspects within games ignores the emergence of sociality through non-chore aspects such as gaming capital and other alternative social aspects, such as asynchronous multiplay through scoresheets.

Scoresheets

Scoresheets are ways players can track and compare their high scores in a board game. They form part of Bogost's (2004) argument about "asynchronous multiplay," a concept involving playing a game with multiple players, but not at the same time. Bogost stated that "persistent scoring is a long standing, even if seemingly obvious, kind of asynchronous multiplay" (2004, p. 6). His assertion is that when a game has a high score display, that game effectively becomes a multiplayer experience: it creates competition between two players even though they play at separate times. For solo board games, many solo variants encompass a beat-your-own-score mechanic which, when a game is passed between players, entails asynchronous multiplay if players try to beat each other's scores. So solo board games can generate multiplayer sociality when a scoresheet is present.

Effects of Sociality

This paper has focussed so far on the presence of sociality in solo board games and will now proceed to explore whether sociality's presence in solo board games is beneficial. A recent meta-analysis found that board games have positive effects on educational knowledge, cognitive functions and physical activity, and can aid in coping with various mental illnesses (Noda et al., 2019). Specifically, the authors note that "board games can be an enjoyable and motivational method for learning content and enhancing group interactions, competitions and fun" (Noda

et al., 2019, p. 3). They argue that there are many positive social outcomes from board games, which supports the necessity of social aspects within tabletop games.

However, Consalvo et al. (2018) exposed the adverse effects of social influence when playing games. They conducted a study in which participants engaged in a decision-based narrative game in pairs, followed by a reflection on the choices they made. The results showed that players made decisions differently as a group than they would have individually. When playing alone, individuals tend to base their choices on what they themselves would opt for if they were truly in the scenario. However, when in a group, players were more inclined to make "evil" choices or pick options that did not represent who they were. This can be replicated in solo board games, particularly those involving narrative decision making. In such cases, playing solo could allow players to express their authentic selves through their choices, without fear of social judgement. Noda et al. (2019) and Consalvo et al.'s (2018) research counterbalances the perks of sociality. The latter shows how sociality can sometimes be unfavourable, encouraging players to not act as their authentic selves, and the former shows how sociality can be beneficial, by enhancing education and group interaction. If similar dynamics occur in solo board games, particularly those involving narrative decision making, playing solo could allow players to express their authentic selves through their choices, without fear of social judgement.

Solo Motivations

What drives solo board gamers to play alone? Leorke (2018) asked questions to members of the 1 Player Guild on BoardGameGeek, aiming to uncover their motivations for solo play. He categorised solo player motivations into three categories: social reasons, genre reasons, and play style reasons. Social reasons included the absence of playing partners or a preference to play alone. Genre reasons pertained to solo games being a different experience compared to multiplayer games. Both social and genre reasons prompt questions about the significance of sociality in solo games. Players who are introverted and prefer being alone may not care for social aspects. Conversely, players who perceive solo gaming as a unique genre may appreciate both solo and multiplayer board games for their differences, implying sociality may not be essential for their use of solo games. Finally, play style reasons involved the desire to achieve a better understanding of the rules, supporting Consalvo's (2007) previous notions of gaming capital (p. 4). Leorke's findings indicate that players' perceptions of their own motivations support the idea that sociality is not always necessary in solo board games. Social aspects can both be irrelevant factors and important reasons (under certain circumstances and for certain types of players) for playing board games solo.

The mentioned prior research helped shape the methodological approach to the present research. The questionnaire included questions relevant to gaming capital, chores, scoresheets, and solo motivations. When note taking for the session report, I focussed on noting my experiences that were relevant to the discussed research. The goal of the study was to explore if sociality was present in solo board game through gaming capital, chores, and scoresheets, and if sociality was a determinant factor in players' motivations to play solo.

Methodology

A mixed methods approach was taken within this research, combining a questionnaire with a report from a solo game session. This helped provide in-depth qualitative perspectives from a group of solo gamers, and an individual account, along with group quantitative data to back up analysis with statistics.

Questionnaire

Questionnaires were chosen as a time efficient method of collecting lots of data. Convenience sampling was utilised by posting an online questionnaire on the 1 Player Guild forum on BoardGameGeek (https://boardgamegeek.com/). This forum was chosen because it contained a large population of solo gamers, offering a high likelihood of attaining a significant number of responses. The participants were over 18. Prior research has found BoardGameGeek user demographics cover a predominant representation from the United States, United Kingdom, and Canada (Alden, 2013), with 73% of users identifying as male (Similar Web, 2023). These demographics correspond with Booth's (2019) demographic survey of board gamers (not specific to BoardGameGeek users) and hence are representative of the target population.

Participants acknowledged their right to withdraw at any time and that by filling in the questionnaire they were giving consent to use their data. To preserve the confidentiality of the participants, their names have been kept anonymous throughout this paper. Canterbury Christ Church University granted ethical approval with minimal risks to researchers and participants.

Two hundred and twenty participants responded to the questionnaire, all of whom had played a solo board game at least once. The questionnaire consisted of twenty-three questions, encompassing both open-ended and closed-ended questions, with the intention of providing varied data. The questions were designed to target the research questions in relation to the topics outlined in prior theories. Bogost's (2004) insights into asynchronous multiplay were targeted in a section dedicated to score/achievement sheets. Participants were asked if they had played solo games with scoresheets, if they preferred when a solo variant includes a scoresheet, and the reasons underlying their preferences. Other sections touched on using gaming knowledge learnt in solo games

to help in multiplayer games (gaming capital). Certain questions addressed the existence of gaming communities in relation to gaming capital. Questions also included whether participants felt solo versions of board games influenced their knowledge when playing multiplayer games, and reasons as to why. Solo motivations were also considered through questions asking participants why they play solo board games, and whether they would place solo and multiplayer board game versions in separate genres. Lastly, a section investigating social discussion about games outside of play was included, asking players if they posted scores online or engaged in discussions about solo board games (see Appendix for a full list of questionnaire questions).

Session Report

Scythe (Stegmaier, 2016) was played solo over a one-and-a-half-hour play session by the researcher, with notes taken after. *Scythe* was chosen for three reasons: familiarity to the researcher, its scoring system, and its capability as a single and multiplayer game. The game does not have a scoresheet for its solo version but does use a scoring system, which players use to boast on BoardGameGeek, so could help to gain an understanding of Bogost's (2004) asynchronous multiplay. The game's multiplayer version had been played by the researcher several times in the past, so prior knowledge was used to comprehend gameplay rules and strategies. The following note taking categories were used: scoresheet, socialness, multiplayer knowledge, motivations, and general comments, which were based on the prior research mentioned in the literature review. The session report was used to help provide a deeper understanding into solo board gaming. It would be difficult for a researcher to fully engage a topic having never experienced it themselves. Matthews (2021) highlighted that "immersive research enables closeness to experiences, behaviours and people's thoughts about the world . . . this can enrich our ideas and provide more coherent evidence to either support or reject them" (p. 41).

With a mixed methods approach, this research provided a balance of quantitative and qualitative data. The results from closed questions in the questionnaire provided an overview of trends present amongst solo players which are presented in graphs throughout the analysis. Thematic analysis was applied to the open-ended questions and session report to explain trends, through emerging themes, and participant quotes.

Results

Analysing Gaming Capital

To assess whether players were aware of knowledge gain (a component of gaming capital), they were asked whether and how they felt playing solo versions of board games influenced their knowledge when playing multiplayer variants. The results, which can be seen in Figure 1, showed that 72% of respondents thought playing solo influenced their knowledge when playing multiplayer, 24% were unsure, and 4%

believed the two did not affect one another. The figures alone support the notion of gaming capital, as most respondents believe playing solo impacted their multiplayer board game sessions.

Do you feel playing solo versions of board games influences your knowledge when playing multiplayer versions of the same game?
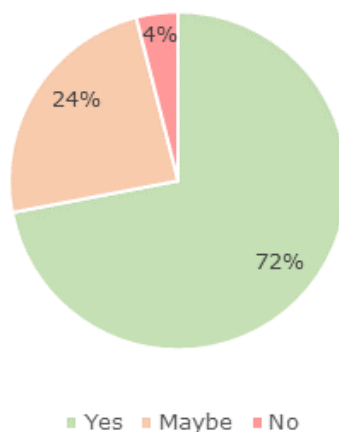

Figure 1. Pie chart showing the perceived influence of solo sessions on multiplayer sessions.

Players had varying reasoning as to why solo play impacted their multiplay. Key themes from the open-ended question were understanding mechanics and rules better, and increasing gameplay experience. A particular respondent pointed out that "when playing solo, you can retract a move and play it out a different way, allowing you to understand different strategies." This is a key point that could be used to argue that solitaire board games provide gaming knowledge at a faster rate than multiplayer board games and provide more opportunities for practice. In multiplayer games, players may be less inclined to allow players to retract moves and attempt alternate strategies, so players may require more playthroughs before they comprehend the array of gameplay choices available. In contrast, playing solo allows players to simply undo their actions in a single playthrough, allowing exploration of strategies faster.

Another participant mentioned that playing a game solo can "make them less self-conscious when playing with other people." This contributed to a different aspect of gaming capital, a sort of gaming confidence, whereby playing solo games results in a feeling of being more confident when play shifts to a multiplayer setting. This gaming confidence allows the participant to feel more relaxed when playing multiplayer games as part of the gaming community.

The results presented so far have supported the existence of Consalvo's (2007) gaming capital, and therefore supported the presence of sociality in games, but some responses differed. A key theme that arose was game dependence. There are different types of solo games, some

drastically different from their multiplayer variants, and some similar. A solo game drastically different from its multiplayer variant affords little knowledge transferability to its multiplayer version. One participant said that solo play hinders multiplayer gaming: "coming from a pure solo background can make the multiplayer game more difficult to understand." This could be because the variants are so different that a solo strategy may make for a poor multiplayer strategy. This could be argued to still support gaming capital as it teaches gaming knowledge, the knowledge is just not applicable universally.

In the session report, I found that solo play skills were transferrable. I felt I relied on my prior *Scythe* knowledge, so I could understand how it worked in reverse, despite my multiplayer strategy not working in solo as I lost to the AI. This shows a transfer of gaming capital in reverse: taking knowledge picked up through multiplayer games and applying it to solo play. However, I lost the game using a multiplayer strategy, which emphasizes how gaming knowledge can sometimes be a hinderance. Perhaps, if I had played Scythe solo for the first time with no prior knowledge, my strategy would have differed and resulted in victory.

Analysing Scoresheets

Scoresheets are another aspect of sociality that were explored in this research. In the session report, the game I played, *Scythe*, did not include a scoresheet, and I was embarrassed with my result, so I did not end up posting my score online. A point can be raised from this that undermines sociality in solo board games. Not every solo variant contains a scoresheet, or even a score system for that matter, so for players who do not post scores on online forums, this form of sociality fails to exist. Where designers attempt to afford asynchronous multiplay through the inclusion of a scoresheet, it is ultimately the player who chooses whether to engage with it. A designer can never be certain that inclusion of scoresheets will increase sociality within a solo board game, especially if players feel embarrassed or ashamed of their results. However, embarrassment could be caused due to players comparing their score against what they deem a socially acceptable score which ultimately supports the existence of sociality within solo board games.

In the questionnaire, participants were asked whether they prefer a solo board game including a score/achievement sheet and why. This question posed issues for respondents. Within the tabletop genre, there are two types of scoresheets players are familiar with, the first being what Bogost (2004) believes contributes to asynchronous multiplay: a sheet used to track scores between matches, such as an achievement sheet or a high scoresheet. The second is a sheet used to help players calculate their final score. These are typically in a pad with sheets discarded after each game. Because of the confusion, participant responses to the follow up question "why" were reviewed, and only data which corresponded to achievement or high score sheets were included in the

findings. From the remaining 129 responses, 33% felt it was better when a solo board game included a score/achievement sheet, 33% were neutral, and 34% felt it was not (see Figure 2). These results imply that scoresheets as a social aspect are neither favourable nor unfavourable amongst solo board games, but when asked why, responses provided varying reasons. The most common response was that preferences in favour or against scoresheets depend on the type of game. Participants highlighted that beat-your-own-score games are only one type of game, and other game types, such as those that have only win or loss conditions, do not require score comparison. Interestingly, some participants labelled solo games with scoresheets as beat-your-own-score games, implying that players are comparing scores not against other players, but against themselves. This is backed up by comments such as: "I can keep track of my own scores and compare different games," and "I like to keep scores to track my improvement at a game." If players are not passing on or comparing scoresheets with other players, it could be argued that asynchronous multiplay is not occurring. There were no participant comments that implied players were comparing physical scoresheets with other users of their board game.
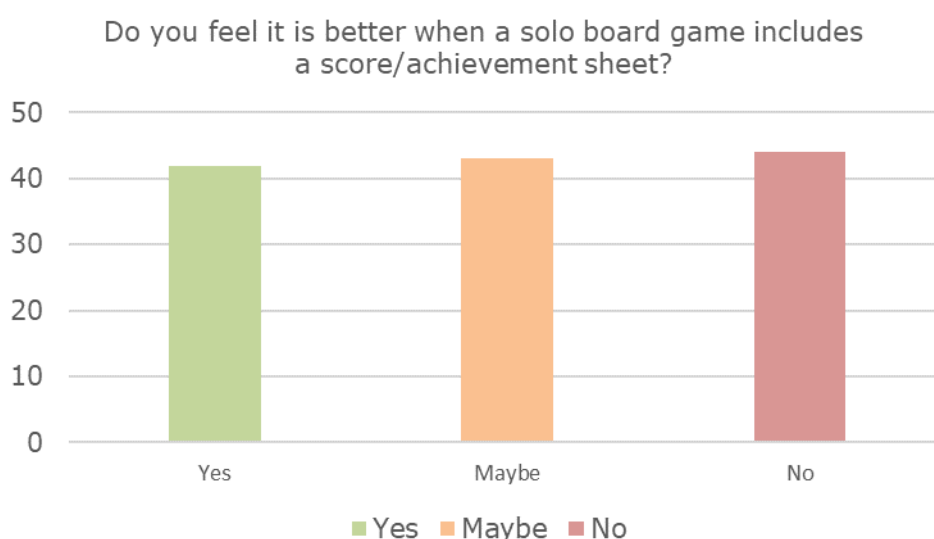

Figure 2. Bar chart showing player preferability of scoresheet inclusion in solo games.

A striking theme among BoardGameGeek users was how they used BoardGameGeek to compare results. Participants commented: "I log all my games on BG stats app [Board Game Stats App] which in turn logs games on BGG", and "many solo players log their results on online forums." Participants were sampled from the BoardGameGeek website, skewing results as solo board gamers who do not use BoardGameGeek cannot use BoardGameGeek to compare results. However, the very fact that players communicate online either to discuss solo games or compare scores supports the presence of sociality in solo games and reinforces Bogost's (2004) notion of asynchronous multiplay existing in

solo board games. Walsh and Apperley (2009) emphasized that "even when players are playing in isolation, they are connected to the media ecology of videogames through a variety of paratexts including FAQ, cheats, hacks, other players, magazines, MOD chips, conversations about the game, and other mass media" (p. 5). The existence of the 1 Player Guild requires solo board gamers forming online social communities, exemplifying sociality formed through solo board games. Although Walsh and Apperley (2009) applied gaming capital to videogames, this research supports its existence in solo board games as well (see Figure 3). When asked if they had ever performed actions from a list provided, 59% of the respondents said they had posted a solo board game score online, 95% had discussed solo board games with another person at least once, 95% had recommended a solo board game to someone else, and 90% had received a solo board game recommendation. All these activities lie within Walsh and Apperley's forms of social interaction. This heavily supports the presence of gaming communities, and thereby gaming capital within solo board games, supporting that there is sociality to be found in solo board gaming experiences.
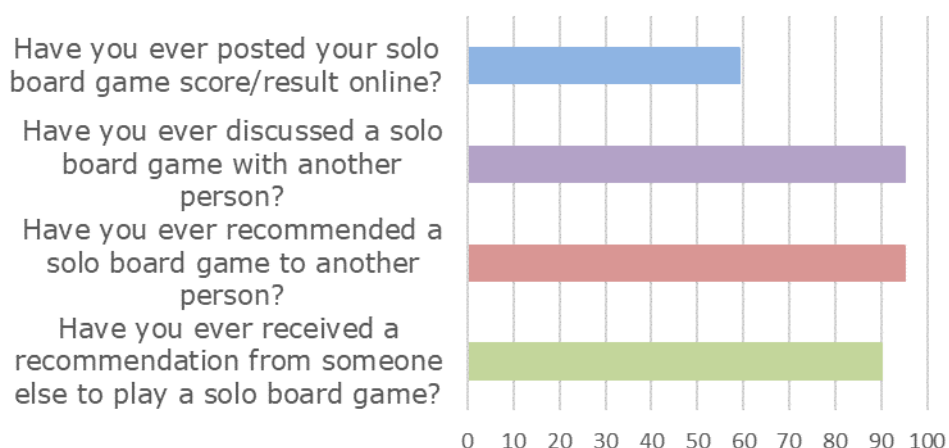

Figure 3. Bar chart showing participant interactions with solo gaming communities.

Analysing the Necessity of Sociality

This article previously discussed the importance of sociality within solo board games, reflecting on the positive advantages of social presence. The questionnaire did not directly ask people if they disliked being in a group, and instead asked whether they preferred multiplayer or solo games, why that was, and why they play solo games. To determine how beneficial or detrimental sociality can be, responses involving social reasons were further analysed. Of the 63 participants who preferred solo versions of games, 57% stated relaxation as a reason for their solo preference, particularly because the presence of other players adds

pressure. One participant summarises: "I control the pace, I can take time on my turns, I understand all the strategies and do not have rule explanation breaks." This relates back to Xu et al.'s (2012) notion of chores, arguing that chores are sometimes boring and not in everyone's interest. This participant does not want to have to explain rules to people, so perhaps chores as a social aspect are not needed nor wanted in solo board games. Another participant stated: "there is less pressure to think and act quickly [in solo board games]," highlighting that the interactions around object manoeuvring that occur within chores can actually put pressure on active players, causing uneasiness as players are watching their moves.

In contrast, another reason for solo play that arose was a desire to play multiplayer, but not having people to play with. From the responses, 76% of participants ticked lack of people to play with as something that influences them to play solo games. This suggests a desire for social presence when playing board games. Individuals may prefer to play with other players but have no choice, so sociality may be an important aspect in what they look for from board games.

Participants vary in solo and multiplayer preference, represented by the results in Figure 4. Some solo gamers play because they have no one to play with and simply have no other option. Others play because they prefer not to be around people. And the middle ground enjoy both equally for different reasons.

Would you rather play a solo or multiplayer version of a board game?

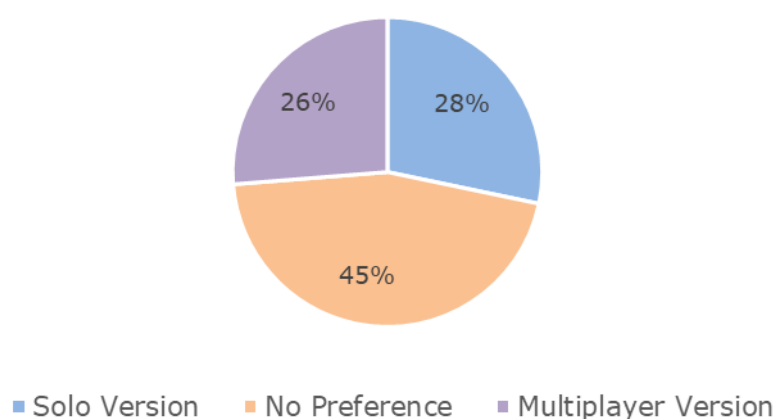■ Solo Version   ■ No Preference   ■ Multiplayer Version

Figure 4. Pie chart showing participant game version preferences.

Whether solo board games need sociality comes down to preference. Some people like to be alone, so the presence of gaming capital or scoresheets may not be necessary, as they have no intention to transfer what they gain from solo board games into a social setting. Other people would rather be with friends, and so value learning gaming knowledge and imbedding themselves as an established member of the tabletop

community. Their reason for playing solo is to better play with other people. Middle ground players, without a preference, may be unphased either way and merely want a game to be enjoyable, regardless of whether they feel they are gaining social benefits from playing or not. A participant who chose no preference wrote: "I just enjoy playing board games whether solo or with others," showing that some tabletop players are not concerned with whether games have or do not have sociality but are instead concerned with the game's entertainment value.

Within the session report, I felt I could play at my own pace, without distraction or other players pushing me to hurry up. I also felt I could enjoy some peace and quiet. It was captivating to be engrossed in the game. I would certainly play solo again as it felt like a unique experience compared to playing multiplayer board games. This reiterated what participants said and falls into the no preference category, where players appreciate both solo and multiplayer tabletop games for different reasons. Solo presents a unique experience, and that unique experience might not require sociality to be desired.

Analysing Solo Motivations

When considering solo motivations in the session report, playing solo felt different to playing multiplayer. I would be inclined to play again to try to beat the AI. It was challenging enough that I lost but the game did not seem impossible to beat. My motivations to play again would fall into the genre reasons category presented by Leorke (2018). I am motivated to play solo again due to the unique challenge solo board games present. Multiplayer and solo variants of the same game felt like distinctive genres that each present their own sense of enjoyment.

When asked in the questionnaire to select all reasons that influence participants to play solo board games, 71% believed solo board games present a unique experience, backing up Leorke's (2018) genre reasons as a key motivation in solo board gamers. When asked "Why do you play solo board games?" 30% of the respondents mentioned genre reasons, including challenge and immersion. One participant stated: "I want to face a challenge but have an experience where I can throw myself into a world and focus on it." These provide further support for Leorke's (2018) genre reasons but highlight immersion as a persistent theme; due to the lack of distraction from irrelevant discussions or downtime, players can immerse themselves completely into a game when playing solo, something that may be harder to achieve in multiplayer games. This could highlight a flaw in Xu et al.'s (2012) chores: debates about rules and discussion between turns can hinder players' immersion in a game, as discussions act as a reminder that the experience they are in is in fact a game, with rules that need to be followed alongside metagame discussions. A participant summarised: "adding more players does not improve the game experience, it just adds a social element," showing that the addition of social elements does not necessarily improve the game experience for players.

Figure 5 shows that what Leorke (2018) grouped as social reasons are prominent motivators of solo play, with 77% of participants choosing "lack of people to play with," and 89% picking "I can play the game I want to play when I want to play it." While the former implies that players play solo because they have no other choice, which implies players have a desire to obtain sociality from their solo gaming experiences, instead, the latter implies players play solo out of convenience, removing burdensome social aspects like scheduling a play session time that works for multiple players.
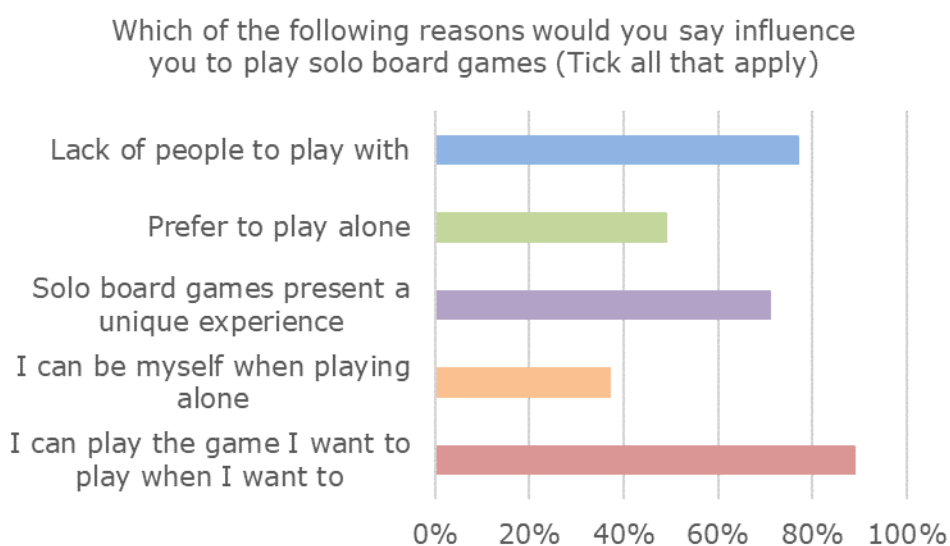

Figure 5. Bar chart showing participant motivations for solo play.

Leorke (2018) also highlighted play style reasons as a category, and these were present amongst participant responses to the question "Why do you play solo games?" though not as prominent. In responses, 6% of respondents included play style reasons, encompassing playing to gain a better understanding of gameplay rules and strategies. A participant expressed: "solo variants are a good way to learn how to play a game before playing it with others," which supports not only Leorke's ideas, but also brings back to mind Stenros et al.'s (2009) gaming capital, gaining knowledge in solo gameplay to apply in multiplayer gameplay.

Overall, Leorke's (2018) categories were present within the questionnaire and session report results, but can be further specified. Social motivations can be negative or positive, either playing solo because you have no other choice or because you prefer to play alone. The pandemic demonstrated this: social restrictions have made multiplayer board gaming difficult, so players may have been more motivated to try or play solo board games. One participant supported this by saying: "I did not realise till earlier this year [during the pandemic] that there were games designed to be played or could be played solo."

Limitations and Future Research

This study used a questionnaire, which has its downsides. A questionnaire is susceptible to personal interpretation, meaning that participant answers may not be true reflections of what was asked. This was noticed in the study when participants misunderstood what was meant by a scoresheet. The use of alternative research methods in future research could result in alternative data.

Furthermore, as this study was conducted during a global pandemic, this may have skewed results within this paper. Participants could not necessarily meet up to play multiplayer board games, so solo player motivations could be swayed by this due to players having no other choice but to play solo. Repeating this research in the future could show alternative results, when there are no social restrictions pushing players towards solo play.

Participants were all active on BoardGameGeek, so their responses about posting solo scores online and discussing board games could lack representation of solo players who are not active on this website. In addition, the site's users typically consist of game enthusiasts with computer skills, potentially leading to an underrepresentation of younger and less experienced player demographics. Using alternative sampling methods in future research could provide insight into solo players outside of BoardGameGeeks's demographics.

Members of the 1 Player Guild, used to sample participants, are dedicated solo players who could have skewed opinions that are not representative of all solo players. Implicitly excluded were solo board gamers that stay offline. This type of offline solo gamer would likely provide insightful information into non-social motivations for solo play. Despite the lack of offline solo gamer responses, this study still yielded non-social motivations from those that did respond, suggesting how an offline solo gamer might have responded. Future research could prove fruitful if it were to target solo gamers who are not present within online communities. It would be interesting to understand whether these offline solo gamers are motivated by social reasons. However, a solo board gamer that stays offline would be hard to target for research, which could pose complications.

This study highlighted that solo board games come in different forms, such as beat-your-own-score games, and the player base of each form can have different motivations. Future research would benefit from delving deeper into specific types of solo board games, to give more precise insight into the solo gaming market and the individual groups within it.

Conclusion

The questionnaire and session report used in this study shed light on personal motivations of solo board game players. With this now growing

trend, it is important that board game developers cater their games for the solo board game market and comprehend what solo board gamers enjoy about solo play. Some participants expressed being displeased with developers when solo variants are a "mere afterthought." If developers' intention is that players use the solo variant to gain experience for multiplayer gameplay, an AI or Automa could be used to represent a diverse array of strategies and simulate a real player as best as it can. If, however, the target audience is instead those who do not enjoy multiplayer gaming and solely enjoy solo gaming, the solo variant should differ from the multiplayer variant, perhaps including a win/loss condition and using alternative mechanics. This would have the added benefit of catering to players who enjoy solo games but do not want to put opponents off by being too experienced when playing multiplayer.

It is naïve to stigmatize solo gamers as anti-social when motivations for play can be socially driven. Sociality can appear in solo board games in many ways, the most obvious of all being the discussions, forums, and websites that lead people to discover solo board games. Social aspects such as gaming capital can be seen to exist in solo versions of games when players play solo to improve their multiplayer knowledge.

Social influence can cause people to feel uneasy, pressured, or not themselves, so sociality may not be required within solo game design. On the other hand, solo board games provide unique experiences for players, and without chores such as discussions around rule breaks, it can be easier for players to immerse themselves in solo games without distraction. If designers seek to create immersive experiences, they should consider whether sociality could hinder this experience for some players.

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Appendix

List of questions used for questionnaire within the study.

Basic Questions
Key Study Points: This survey is intended for people who have played solo board games. When the survey refers to solo board games this includes playing a single-player version of a board game that has the potential for more players.

1. Have you ever played a board game by yourself?
2. Have you ever played a board game multiplayer?

Score/Achievement Sheets
3. Have you ever played a solo board game that has a score/achievement sheet included?
4. Have you ever filled in a score/achievement sheet after playing a solo board game?
5. Do you feel it is better when a solo board game includes a score/achievement sheet?
6. Why?

Social
7. Have you ever posted your solo board game score/result online?
8. Have you ever discussed a solo board game with another person?
9. Have you ever recommended a solo board game to another person?
10. Have you ever received a recommendation from someone else to play a solo board game?

Multiplayer
11. Have you ever played both a solo version and multiplayer version of the same board game?
12. Do you feel playing solo versions of board games influences your knowledge when playing multiplayer versions of the same game?
13. Why?
14. Would you rather play a solo or multiplayer version of a board game?
15. Why?

Motivations
16. Why do you play solo board games?
17. Which of the following reasons would you say influence you to play solo board games? (Tick all that apply)
18. Would you place solo versions of board games in a separate genre to multiplayer versions?
19. Would you be more likely to buy a game if it has solo compatibility?
20. Do you feel relaxed when playing board games?
21. Have you ever taken a break (over 1 hour) from a single-player board game and returned to the game after the break?

22. What influenced you to first play a solo version of a board game?
23. Any other general comments about answers/solo board games