Jamming-as-exploration: Creating and Playing Games to Explore Gender Identity

Leya George
UCL Interaction Centre, University
College London, London, United
Kingdom
leya.george.14@ucl.ac.uk

Aneesha Singh
UCL Interaction Centre, University
College London, London, United
Kingdom
aneesha.singh@ucl.ac.uk

Nadia Bianchi-Berthouze
UCL Interaction Centre, University
College London, London, United
Kingdom
nadia.berthouze@ucl.ac.uk

Lorna Hobbs
UCL Medical School, London, United
Kingdom
l.hobbs@ucl.ac.uk

Jo Gibbs
Institute for Global Health, University
College London, London, United
Kingdom
jo.gibbs@ucl.ac.uk

ABSTRACT

Games can be powerful vehicles for gender identity exploration and self-reflection but are often subject to designers' biases including gender representation, limiting such opportunities. Using a game jam as a research-through-design method, alongside qualitative interviews with the creators, this paper explores how the process of creating games and the games themselves can facilitate exploration of and reflection on gender identity. We highlight aspects of identity people want to explore; how different game elements can support processes of exploring these, and what aspects are missing in games. Further, the process of creating and playing helped participants reflect on and reframe their understanding of gender regardless of their identity/experience. Finally, we reflect on the process of designing an inclusive jam around the topic of gender identity, which can be sensitive and divisive. Our work results in implications for the design of games and other potential tools for gender exploration.

CCS CONCEPTS

• **Human-centered computing**; • **Human computer interaction (HCI)**; • **Empirical studies in HCI**;

KEYWORDS

Gender identity exploration, Game jam, Qualitative methods, Game design

1 INTRODUCTION

The rigid binary understanding of gender identity that many subscribe to can be restrictive and potentially harmful [7, 8], yet many contemporary understandings of human development and gender identity reinforce this perspective [4, 26]. Playful and imaginative activities, such as games, can provide a space for people to explore/develop their gender identity. Playful engagement with gender identity can challenge the idea and practice of gender as static, binary, biologically enforced, and universal [35] through mechanisms such as player characters and narratives, thus helping to explore and embody different aspects of gender identity.

Using games as vehicles of identity exploration is not new. Research has also explored the intersection of gender, identity and gaming, looking at various aspects such as gender representation and diversity in gaming, and identity construction especially in multiplayer roleplaying games (RPGs) [30]. RPGs have been used by many for the purpose of gender self- examination and exploration. They allow players to customize their face, features, clothes, and gender identity to suit their real-life, as well as alternative identities, and explore how it feels to be this character in the game. While games allow exploration of gender identity, little attention has been paid to the notion of investigating the elements within games that are used and appropriated for the explicit aim of gender identity exploration. Given the updated, nuanced understandings of the multidimensional nature of gender [15, 42] and the popularity of games, unpacking the elements that are important to people with different gender identities or a desire to explore is important. Further, there is evidence that games can support self-reflection on serious issues, however the design in mainstream games have been criticised for limiting such opportunities for reflection [25], potentially missing novel, creative strategies to support exploration.

As a first step to address this issue, we took an exploratory approach by using a game jam. Game jams are events for creating game prototypes within a short duration and can be seen as an example of research-through-design [10]. Through the medium of a game jam, we explored what elements and mechanisms in games

would be important to people in exploring their gender identity. We wanted to understand how people made decisions around the creation of games (considering elements such as characters, worlds, narratives etc.) and how they felt this related to the theme of exploring gender identity. In creating games and discussions with other creators and gamers within the jam we hoped to also investigate the opportunities and gaps in current games experienced by people who want to explore gender through games. Our aim with this work is not to replace offline gender exploration, but to enhance and improve opportunities to do so in a safe space to either augment offline experiences or provide opportunities where they may be lacking. Additionally, our aim is to provide an understanding of design principles pertaining to building blocks of identity exploration.

While game jams have been used in research for exploring sensitive topics such as mental health [40] and to inspire new types of gameplay [13] the present work is the first, to our knowledge, to address the notion of intentionally exploring gender identity by understanding which strategies can actually help people of all identities reflect on this. Hackathons and game jams have maintained an image as male-dominated spaces despite theoretically being open to anyone, in part due to intimidation and doubt arising from typical intensive practices of these events and perception of gender discrimination [18]. In designing our game jam, we made the decision to include all gender identities, making explicitly clear in advertisements that we were more interested in people's interests/experiences in exploring gender regardless of their identity. This is because exclusion criteria around gender identity run the risk of excluding people arbitrarily. In addition, many queer and transgender people may not be open about their identities and asking for proof of identity before people are allowed to participate can be considered another form of being oppressive or controlling [7]. It reinforces the idea of artificial labels and arbitrary decisions that we wanted to avoid. Further, diversity in the group can result in richer and more diverse ideas around gender as long as we can make sure everyone is respectful of each other's identities.

Thus, in this paper we explore how creating/co-creating games can lead to a process of exploration and reflection on people's gender identity. As part of this jam, participants developed eight games using different approaches and genres. We conducted a survey with all participants to understand their experiences regardless of whether they ended up submitting a game. A playthrough of all games with the research team (N=3) helped to develop an understanding of the games as well as a topic guide for follow-up interviews with participants (N=8) who submitted games. These interviews were conducted to understand the motivations, process of creation and reflections.

Our results show that different game elements were considered important in supporting exploration and reflection of gender including: the design and process of character creation, social aspects including the design of non-player characters (NPCs) or involving other people to collaboratively explore through play, and designing for different emotional experiences.

We contribute insights on how the design of jams and similar creative spaces can affect reflection on sensitive topics such as gender identity by involving participants of all identities with experience or interest in exploring gender, and discuss how different elements

of games and the context around playing can support or restrict exploration of gender identity. These insights can be used by game developers who are seeking to create game experiences that promote reflection such that players can better understand their and others' gender identities and related experiences.

2 RELATED WORK

2.1 Exploring Gender Identity through Games

Work in HCI and related fields has shown that while various categories of technologies, particularly social technologies, are used to support different aspects of gender identity development such as transition and disclosure [20] individuals experience difficulties due to the design perpetuating biases and contributing to incidents of harm [36, 39]. Less attention has been paid to the concept of using these technologies with the explicit aim of exploring gender identity (which may encompass intentionally experimenting with gender presentation, linguistic markers such as names/pronouns, and explicitly learning more about the concept of gender and gender diverse identities). However, games have been described as "*identity laboratories*" [23], meaning they are considered the ideal testing grounds for constructing and experimenting with aspects of identity such as gender. Games have several characteristics making them suitable for this purpose, providing a situated environment where exploring identity can happen in a particular context, instead of in isolation from other factors. For example, gamers have agency to explore identity through their own constructed avatar or pre-designed character, performing identity through different modalities (i.e. visual representation, linguistic markers, audio) often within a narrative and a social environment. Games can provide freedom to construct, perform and explore a role in an open-ended virtual space safely, sometimes anonymously, with the ability to replay/restart naturally thus supporting experimentation of new roles and identities.

2.1.1 Constructing identity through game elements. Identity is actively constructed in a social world, and games can simulate this. Roleplaying games in particular have received considerable attention as they are well-placed to encourage players to "*develop and explore identities through characters in ways that other genres do not*" [30]. Prior work has investigated gender representation through characters in games, and relatedly, the relationship between players and the avatars they embody. While games have come a long way from stereotypical representations (such as overly sexualised female characters), binary stereotypes still persist in mainstream titles, and the presence of trans/gender diverse characters is noticeably lacking. Even when players are given "*design authority*" [30] in for example being able to construct their own avatar, this is limited by how game developers design character creation screens, which are often restricted in the customisation options such that they perpetuate societal norms around gender and beauty [11]. This warrants further investigation; what elements constitute essential characteristics in the design of characters to enable players to conceptualise identity and more specifically, gender? Some studies have shown how individuals utilize avatar creation to experiment with gender – whether this gender play reflects their real- world gender identity or not. For some users, the ability to engage in such play is

profoundly important for enacting their gender identity [27]. Players also subvert the expectations of developers who may enforce traditional ideologies in the design such as only offering binary gender options, by playing as another gender, for various reasons including aesthetic preferences, novelty, and gameplay specific reasons [19]. Westecott proposed a framework to help designers think about how gender is represented in games (specifying third-person character-led games). This framework is a continuum running from "gender-free" at one end, i.e. an absence of gender signifiers, to hyper-exaggeration of gender at the other. They also include the notions of "distributed subjectivity" in-between these extremes, referring to approaches that allow the player to shift through multiple identities over the duration of gameplay. This framework is helpful in elucidating ways to think about the state of gender representation in games; as we apply it to mainstream games, we can observe that it is more typical to veer towards hyper-exaggerated gender representation [44], which may limit opportunities for exploring gender. Supporting this point, it has been noted that typically there is an asymmetry between the customisation options on offer within games for male and female characters, and female characters tend to be limited in their representation, pandering to the male gaze and presenting as hyper-feminine [1]. This especially limits exploratory work for feminine presentation for players.

Narrativity is another aspect gaming provides that is conducive to the exploration of identity. The concept of narrativity has received a great deal of attention with regards to identity formation; narrative identity posits that we come to form and understand our identity through constructing a coherent life story, bridging together past experiences [34], current actions, and desires for the future. [29] adapted the concept of narrative identity to outline the notion of ludic identity, placing emphasis on how the narrative dimension of games are fundamentally distinguished from other narratives (presented in other media) by their interactivity. Representation in the narrative is important; games offer the opportunity to play through a narrative embodying a pre-designed character or self-created avatar, and some games have incorporated LGBTQ+ content in the story – for example the Persona series, Life is Strange and The Last of Us. This can have the effect of exposing and educating audiences to diverse stories and normalizing different identities.

2.1.2 Aspects of gender identity. Ecenbarger observes that identity construction in gaming spaces has typically been studied through different, fractured lenses. Scholars have separately explored how games can provide a space for constructing identity; a space to identify with in-game characters; or how players can identify with groups within the gaming community [14]. This work does provide insight through addressing these aspects of video games and identity as separate research agendas; however studying these aspects in isolation may miss nuance of how the whole context of gaming holistically can impact one's identity, including any transformative effects such as increased self-understanding and reflection on identity. These layers should be integrated to examine the relationship between exploring and constructing identity with and through games, and there are potentially more aspects to this framework yet to be uncovered. While Ecenbarger discusses identity generally, this applies to specific aspects such as gender, where again research tends to narrow on specific elements as discussed i.e. characters

and avatar creation, roleplaying in MMORPGs). What is missing is a contextual exploration of how people can actually reflect on and understand gender with and through games in their current form. This includes examining how various genres can support exploration and reflection. After all, there may be unique affordances specific to genres/modes of play or games as a whole that have not yet been investigated that may support exploration of gender in different ways (e.g. comparing multiplayer and single player RPGs and other games, physical play etc.). To flip the script, exploration of gender may naturally happen in ways that can be incorporated into or enhanced by different games - involving individuals to share what they would *like* to explore or what aspects others might benefit from exploring, and how they envision games supporting that, may lead to interesting, novel opportunities for designing games.

Individuals with marginalized identities or anyone who is simply curious to explore, would benefit from spaces to experiment freely which can in turn support wellbeing. For instance, one study found that gaming supported the gender identity development of a few individuals with gender dysphoria, by acting as a psychological tool to increase awareness of their gender identity, providing a creative space to 'test out' their identity, and being able to disclose their identity to other people [45].

2.1.3 Using reflective game design. Thus far, we have discussed some common features of games that support exploration of identity in mainstream games, where designers are not necessarily thinking explicitly about this as a goal – it just so happens that the medium is well- suited for this, as they can tap into multiple dimensions including narrativity, multisensory aspects, and social aspects. However, games can be powerful, transformative systems that encourage reflection as a core outcome of design, not just as an afterthought and there may be strategies that actively promote exploration and reflection that are not intentionally designed for. A growing body of work in HCI concerns reflective game design. Mekler et al., (2018) investigated what specific types of reflection players experience, observing different levels, but not necessarily transformative reflection (which leads to the intent to change one's behaviour or reconsider personal assumptions) - though reflection was deemed a worthwhile activity/benefit of games [28]. Khaled has explored how games function as systems that can trigger and support reflection, and how speculative play can help us engage with complex social and cultural questions [25], which is relevant in the context of thinking about gender. They note however, that dominant tropes of conventional game design directly work against reflection. Experimental games often in indie contexts allow for more creativity to play around with the norms that player bases are acclimatised to in mainstream games. In the context of exploring gender identity, involving individuals who have actively experienced this or are interested in this process can lead to novel, creative ideas for designing playful experiences.

2.2 The Process of Creating Games

2.2.1 Game Jams: A Unified Design Approach. A burgeoning field of scholarship has examined the cultural phenomenon of game jams [17]. Game jams are organized events to develop game prototypes, in a specified (usually short) timeframe. These events allow people of all abilities, from experienced developers to individuals new to

game development to collaborate on developing game prototypes in a safe space, without the pressure to deliver a high-quality product. Game jams or game design workshops have been used as a research method to explore various aspects of the process, or to investigate how a particular theme can be explored through the lens of game-making.

Of particular interest to this research are game jams that focus on potentially sensitive topics. One example is the Games [4Diversity] Jams, which aim to foster diverse games by inviting participants from different backgrounds to create a game around a central theme such as cross-cultural play [13] and LGBTQ perspectives [11]. which are compelling case studies for demonstrating how jams can involve a variety of individuals with different experiences. In another example, [40] delivered a series of speculative participatory design workshops inviting participants to consider the relationship between games, self-care and mental health. The output from these discussions was a toolkit to guide the design of gameful self-care technologies. This is just one example of how thinking through the lens of games can help individuals to discuss a personal, sensitive topic with others.

These could be said to be examples of research-through-design (though they have not explicitly been described as such in these papers), in which design activities play a formative role in knowledge creation. Bayrak argues that game jams, being collaborative and speculative in nature, lend themselves well as a design model for speculative design, participatory design and research-through design – methods that are also well-suited to explore our questions around supporting exploration of gender. In the case of speculative design, they argue that the inherent interactivity and playfulness of games make them suitable for exploring potential futures. Furthermore, the ideation process of game jams which is driven by a theme "enables exploration of potential solutions similar to plausible futures" [3]. The iterative nature of game design and jamming they suggest could be considered an approach for research-through-design in which the findings through this refinement is just as important as the final artefact. These characteristics of game jams make them a suitable design approach for sensitively investigating a topic such as gender identity, and how this could be explored.

2.2.2 Inclusive Game Jams. Game jams have been criticized for their lack of diversity, being perceived as male-dominated spaces. Given their potential as a powerful research methodology to give insight into important topics that may especially impact marginalised groups of people, it is important to understand how game jams as a format can be designed as welcoming, inclusive environments. Fortunately, recent research has provided reflections on this. Ferraz et al., (2019) explored what aspects may encourage more participation in jams by women, suggesting that explicit messaging in advertisements targeting women can increase their registration [18]. Oliveira et al., (2021) explored the participation of LGBTQ+ people in the Global Game Jam in 2021, understanding their perspectives around potential discrimination faced during game jams [32]. The authors provided recommendations for organizing inclusive game jams, including: organizing jams that are focused on diversity; make participants aware of the code of conduct; fostering an environment of collaboration over competition; introducing

aspects that the LGBTQ+ community can relate to; and promoting learning activities.

3 METHODOLOGY

Game jams, as a playful approach to research-through-design are a compelling method to bring participants together to explore personal, sensitive topics though play and creation. For this study, we designed a virtual game jam to understand how games support exploration of and reflection on gender identity. Our game jam involved several stages and design activities to support design/speculative thinking, so that through the process of design we could gather insights into the following: how do people appropriate and envision games designed for gender identity exploration and what elements in games are considered important for the process of such exploration and self-reflection. In running a game jam, we further seek to encourage and be privy to the dialogue around how people with different gender identities co-create ideas about gender identity exploration.

The study had four stages: preparation, running the game jam, analysing the games designed in the jam and finally follow-up interviews with the participants of the game jam. We present details of these stages below.

3.1 Preparation of Game Jam:

As a first step, we familiarised ourselves with the typical organisation of jams. We perused current and upcoming jams being hosted on itch.io (a website that hosts game jams) and joined events on their website, including their Discord servers to gain experience and understanding of the organisation of virtual game jams and how participants engaged (for example, to find team members, to ask questions regarding game development, to elicit feedback etc.). In addition to consulting prior work on inclusive game jams, we designed the structure of our game jam for exploring gender identity, a potentially sensitive topic, through extensive discussions with individuals who had organised or taken part in jams (including academics and gamers). We particularly focused on the experiences of those organising research jams on sensitive topics to help inform our strategies for running the jam (such as refining a code of conduct form for participants, strategies for safety and inclusivity at the event and recruitment strategies).

3.2 Key Elements of Game Jam

It is typical of game jams to include a theme, and sometimes sub-themes to give participants inspiration for their game. We created a design workbook, also adapted into a Miro board presenting sub-themes related to gender identity (see Appendix A). We also included various brainstorming exercises to help individuals/teams reflect on the topic, and to think about game design elements (and how they could be more inclusive) – as shown in Figure 1. This approach was inspired by previous work showcasing how codesign methods can be adapted for remote engagement [21]. The following materials/elements were also established for the event:

- **Code of Conduct:** We adapted examples from other Jam organisers particularly where their themes were considered
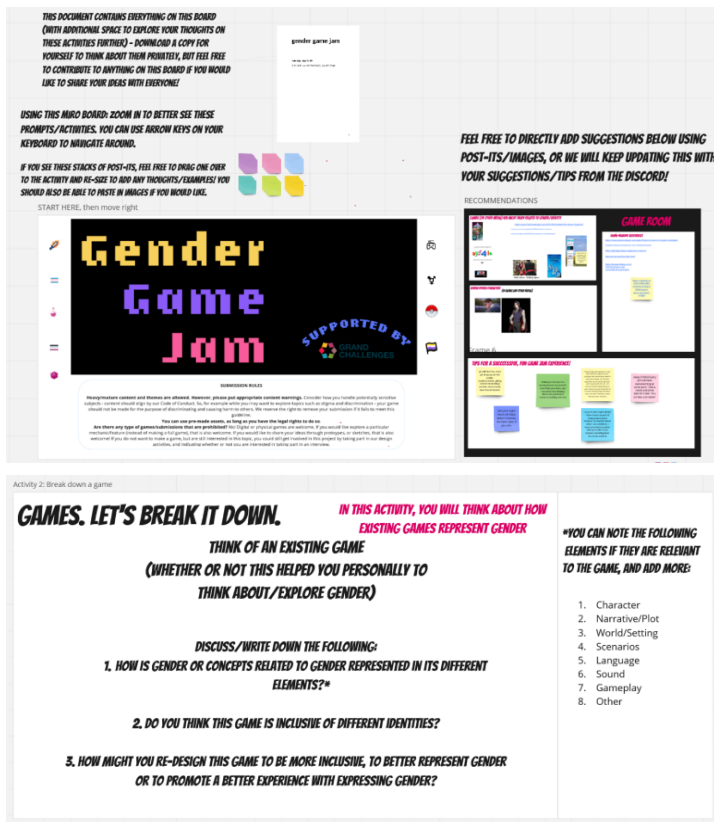
Figure 1: Some screenshots from Design Workbook/Miro board. Top: Introduction to Gender Game Jam, Bottom (left) Breaking down elements of existing games. Bottom (right): Personal reflections on gender.

sensitive. This document established best practices that participants were expected adhere to, to maintain a safe and inclusive environment.

- **Moderators and Mentors:** In order to make sure members were abiding by the code of conduct, a group of moderators (N=5) were on hand checking the Discord daily. Mentors (N=4) with previous game development and/or jamming experience were also involved to give advice to jammers particularly if they were new to this activity.
- **Discord Server:** This was the primary environment for interactions to take place between participants, mentors, moderators and organisers. The server included various channels serving functions typical of game jams. These included a general channel for announcements; a channel for all members to introduce themselves; a team-finding channel for individuals to describe their skillset or what skills they would be looking for in another team member; a channel for posting works in progress to elicit feedback; and a channel dedicated to mentors who could answer questions related to jamming and game development. We also had voice channels for members to socialise together.
- **Advertisement, Website and sign-up**: The game jam page was set up on itch.io with event details, more information

about the theme (being very explicit about its focus on gender identity exploration) and a link to sign up. The event was shared through the researchers' personal networks, social media (e.g. Twitter, Reddit), reaching out to LGBTQ+ charities and news outlets (e.g. Gayming Magazine), in addition to being active on itch.io, where anyone could access it by looking at upcoming jams. The only inclusion criteria was being over 18, and that otherwise anyone with an interest in and/or experience in exploring gender through games and play was welcome to join. This compulsory sign-up form included questions such as *'why do you want to take part in this jam'* to gauge individual motivation, and to filter out any responses that might be considered disrespectful. Participants were sent a link to sign a consent form confirming that by submitting a game at the end of the jam, they agreed for the research team to use this for research purposes and specifying how they would like to be referred if we shared these publicly. They were allowed to change this option upon submitting their game, in case they changed their mind.

3.3 Game Jam Event

The jam took place over the course of three weeks in September – October 2021. Participants (N=25) were invited to join a Discord

server once they filled in the sign-up survey and gave consent. Upon joining, they were provided the design workbook and link to the Miro board displaying the theme prompts and various design activities (as described previously) to help with ideation, though engaging with these was optional. Some participants joined in teams, found other members through the Discord, or worked alone. There was not a strict structure; participants were recommended to introduce themselves in the Discord and spend some time engaging with the themes and design activities before making their game, but this was not mandatory. The organisers, moderators and mentors checked the Discord frequently throughout this period to answer any questions, signpost people to resources and generally to prompt engagement and receive updates about the participants' games.

At the end of the jam, participants were linked to an exit survey, regardless of whether they submitted a game or not. This survey prompted participants to give their reflections on the event. If they submitted a game, they answered questions around how the game related to the theme, what they would have implemented had they had more time/resources and if they would be interested in a follow-up interview. Those who submitted a game received a £100 (or equivalent) Amazon or Steam voucher. All participants at this point gave consent again for us to share their games publicly for the next stage of the research. In total, eight games were submitted to the Jam. More information about these games will be presented in the Results.

3.4 Jam Games Analysis

The first author underwent a process of becoming familiarised with the games, playing through them multiple times – alone and subsequently with members of the research team, reflecting on game elements and mechanisms and how they reflected the theme. The first set of playthroughs was conducted using autoethnographic methods, using self-observation while playing the game with the first author as participant [9, 31] embodying the mindset of a player to understand the initial player experience. The autoethnographic study was used as a formative method to prepare interview guides tailored to each game for a follow-up interview with the developer/s. Autoethnography was adopted for three reasons: (i) to familiarise the researcher with the game, (ii) to empathise with experiences of the game as a player (not as part of the creative or organising team), and (iii) to simulate how the game reflected the research question of exploring gender identity.

In the first iteration, extensive notes were made to document researcher reflections on the player experience. Screenshots were taken at various points of the game and annotated. In subsequent iterations, a more analytical approach was adopted to understand how the game design related to the theme of the jam. The researcher carried out a thematic analysis of diary entries and screenshots. This started off with a bottom-up analysis – making notes on different elements of each game that were present. Guiding questions/prompts considered during these playthroughs included: what aspects of gender are portrayed/presented? What processes/techniques are implemented in the game design to facilitate reflection/exploration? Finally, we collected general impressions and notes on player experience. These reflections, alongside a top-down analysis of standard game design elements (i.e., character, environment, narrative, sound,

mechanics, tone, language etc.) allowed the first author to compare these elements and understand how each game approached the theme differently. Through embodying the player perspective, we noted the interaction aspects afforded by each game and how this affected the type of identity exploration. This step was done individually and collaboratively with other members of the research team.

Following the autoethnography study and subsequent collaborative analysis, a separate Miro board was created to document significant game features and related screenshots (e.g., in terms of demonstrating a certain element relating to the theme), to assist content analysis (as demonstrated in Figure 2). Furthermore, a section of the board was dedicated to future/ideal designs, to probe how certain elements of the game would have been designed ideally had there been more time, or ideas for how the overall design of the game could evolve. These insights were used to develop individual topic guides for interviews with the developers.

3.5 Jam Follow-Up Interviews

Eight participants took part in the follow-up interview, covering five of the eight submitted games (see Table 1). Participants were asked to familiarise themselves with at least one of the other jam submissions as well as their own, before the interview.

The actual session itself was conducted over Teams and contained several components. The general structure of the interview guide was sent to participants ahead of time, so they knew in advance of the session to manage expectations and so they had time to prepare. We focused on the following topics: general experience of the Jam, experiences of developing/ideating the game and of working in teams if relevant, a think-aloud which involved asking participants to share their screen and play through some or all of their game while describing different elements/decisions that particularly stood out to them; thoughts around the other game/s developed during the Jam; and thoughts/experiences/perceptions of using games and technology more broadly for exploring or reflecting on gender identity. Interviews ranged from one to two hours. Participants were compensated with a £20 (or equivalent) Amazon or Steam voucher. The demographics of interviewed participants are presented in table 1.

3.6 Interview Analysis

Interviews were video and audio recorded, and then manually transcribed by the first author. The interview transcripts were reviewed to become familiar with the data and subsequently analysed using principles of thematic analysis [6]. facilitated by the qualitative data analysis software nVivo. The process of becoming familiarised with the data and subsequent open coding was initially conducted inductively to identify codes driven by the data (i.e. bottom-up). An iterative approach to the analysis was then applied by the first and second author, whereby codes were interpreted, combined and refined (resulting in a final 45 codes) and constructed into themes using affinity mapping. The whole dataset was then re-reviewed to ensure cohesion. Themes were collaboratively discussed and refined amongst the first and second authors on a Miro board, and a document with an initial write-up of the themes and a table of their main codes was created and shared with other authors. A series of
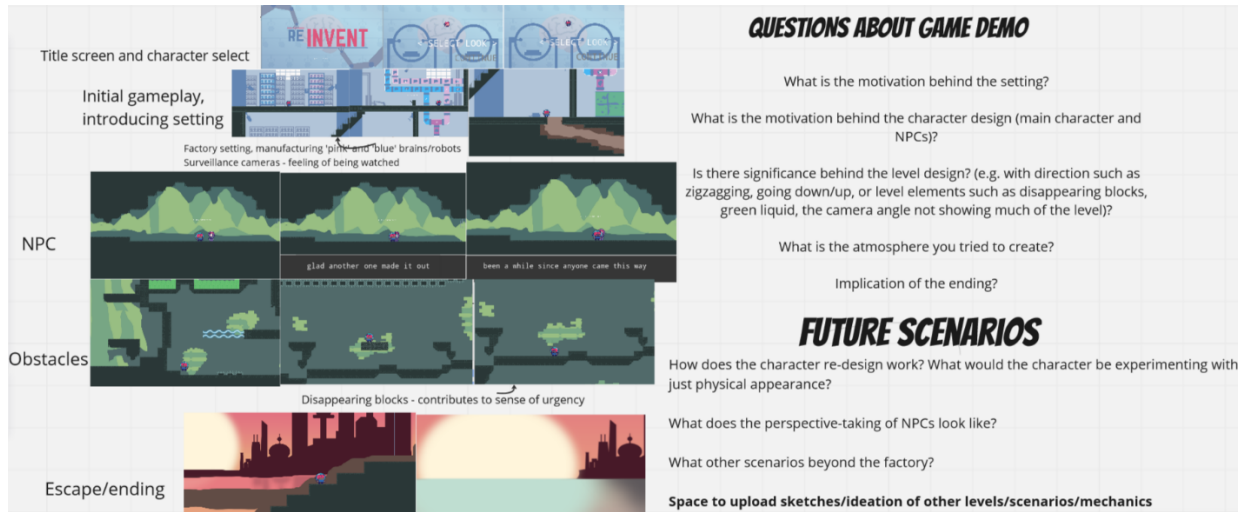
Figure 2: Miro board documenting screenshots showing different aspects of the gameplay for the Jam game, Reinvent.

Table 1: Table of interviewed participants. P# denotes participant numbers.

P#	Age	Gender Identity	Ethnic Group	Prior Experience with Games/ Game Jams
P1	25–34	Man	White	No prior experience.
P2	25–34	Man	White	No prior experience.
P3	25–34	Non-Binary	Mixed Indigenous, Latin American	Indie game designer, professional game writer. TTRPG streamer. First game jam.
P4	25–34	Non-Binary	White	Has run a game jam previously and participated in hackathons with game elements.
P5	25–34	Man	Japanese	Has participated in hackathons, but no prior experience with game development.
P6	25–34	Non-Binary	African-American	2D Artist and Multimedia Storyteller. Works with educational games. First game jam.
P7	25–34	Woman	White	Games design module at university. First game jam.
P8	18–24	Transmasculine	Chinese Dutch	Bachelor and Master degree in Game Design. First game jam.

1-hour long workshops was used to discuss these themes with all authors based on the shared materials and games walkthroughs. Final themes (n=11) were refined as presented in this paper.

3.6.1 Authors' Positionality.
The authors of this paper, while having diverse intersectional identities, do not encompass very diverse gender identities. However, collectively we have varying degrees of lived experience of playing and creating games and identity exploration in our personal and professional lives (for example, one of the authors works in child and adolescent gender care). This has helped to inform our understanding of gender identity and exploration of marginalised identities. Our work foregrounds the fluidity of identity, and that gender is something that can and should be explored away from stereotypical, binary norms. Our personal identities and experiences by no means represent the range of diverse lived experiences when it comes to gender identity, but we hope that by focusing our work on the experiential aspect of exploration instead of focusing on identity labels (as we have made clear in the recruitment for this project), this will account for fluidity and flexibility of definitions and experiences without the need for explicit identity-based disclosure. However, acknowledging the team's relative privilege in some facets of our identities, the authors took great care in the process of designing the game jam by getting advice from people with diverse identities (including sense-checking materials and the protocol), and inviting some to get involved in the organization/moderation of the event.

4 RESULTS

This section presents the results of the analysis (as described previously). First, we present an overview of the submitted games before presenting the results of the qualitative analysis.

4.1 Overview of Jam Games

Eight games were submitted by the end of the Jam (shown in Figure 3). We present the characteristics of the games and summarise the
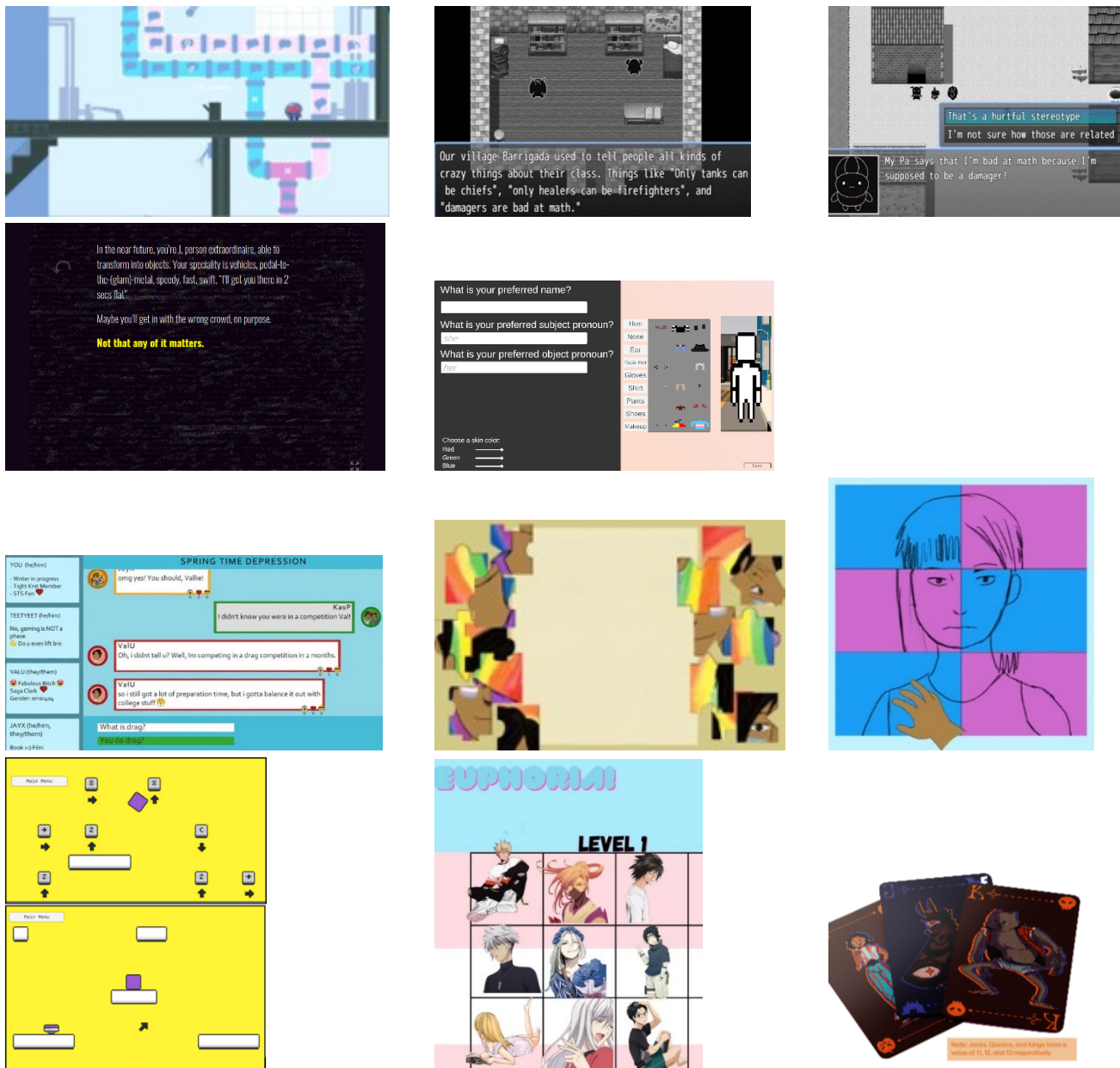
Figure 3: Screenshots of submitted games showcasing gameplay. In order from top left to bottom right. First row: ReInvent, You Choose. Row 2: Guilt/ Oil/ Altar, I am Me, Row 3: 3 Queers and a ?, Row 4: Norms, Euphoria, Hallow Unseen.

main features/characteristics intended to facilitate exploration of gender in Tables 2 and 3.

4.2 Qualitative Results

The main themes that were identified from a thematic analysis of the exit survey, interviews with jammers, the communications between jammers and organisers on Discord, as well from the content analysis of the games themselves are presented here. The main themes are organised by perspectives of participants when

exploring identity, as players or jammers, the elements of games that were identified as important for identity exploration and finally challenges. We discuss these next. The details (including setting, themes, and genres) of games created during the jam are in Tables 2 and 3. Screenshots of games can be seen in Figure 3.

4.2.1 The player perspective: Why games/play are good tools for exploring gender and identity. The first set of themes identified from this analysis revolve around the role of play for exploring

Table 2: Games created during jam and their aims, genres and main themes.

Game	Creators	Genre	Themes
Reinvent	P1, P2, P6	2D Platformer	Exploring gender norms, fluidity of identity (i.e. that identity is not fixed and can change over time), escaping the gender binary. Engender empathy by creating and reflecting on characters.
You Choose	Not interviewed	RPG	Critiques arbitrary stereotypes, roles and social expectations to conform.
Guilt/oil/altar	P4	Twine	Physicality of gender dysphoria (a term describing the felt discomfort/distress sometimes caused by the discrepancy between a person's gender identity and external body); Social expectations based on body type/ gender expression. Guilt/coercion to perform a certain gender identity. Reflecting on agency/ relating to other people with and through your body.
I am Me	Not interviewed	Inspired by character creation screens	Exploring gender expression through customisation. Affirmation of gender by others, fluid exploration by changing names/pronouns/appearance throughout.
3 Queers and a ?	P8	Text-based (chatroom simulation)	Exploration and education about different gender identities through the lens of a character who is figuring out their own identity. Relatable characters, familiar scenario, lived experience narrative.
Norms	P5, P7	Customisable platformer	Breaking the rules/norms by making your own.
Euphoria	P3	Physical, social card game in the style of Bingo	Joyful, collaborative exploration of inspirations of gender. Reflecting on sources of 'gender envy', referring to a phenomenon of envy/admiration for how someone expresses their gender.
Hallow Unseen	Not interviewed	Tabletop roleplaying game	Visibility of identity. Embracing self-identity. How others perceive evolving identity expression.

gender/identity. Participants described various qualities that made games and play powerful tools for exploration.

Play as a gateway for exploration. While reflecting on their previous experience of playing, it was noted that games explicitly provide a space to experiment with aspects of identity such as roles, expression and identifiers in a natural way. Since that is the point, the underlying layer of identity exploration becomes disguised in plain sight. *"You were exploring gender, you didn't know it but like you were naturally doing it in a way that felt safe and fun and you had control over versus trying out new pronouns in the wild."* (P3)

Both P3 and P4 observe that play is a safe and fun way of exploring gender compared to experimenting in the wild, which may lead to harmful consequences depending on the context. The context of play allowed for concealed exploration without explicitly having to tell others, as described in this quote. *"Do you know how many of us have tried out new pronouns under the guise of it being our character so that we would feel safe and not have to expressly like tell people that we were trying out new pronouns or new names?"*. Games lend themselves well as tools for exploration by exploring "identity by proxy" through a character or avatar. One aspect of P8's game *3 Queers* simulates a group chat, which 1) puts players in the perspective of someone who is questioning their identity, and 2) scaffolds respectful/supportive communication through the dialogue tree. Both these features provide a gateway for players to explore gender and talk about it more openly.

Play as Reframing Experience. P3 discussed how games can be powerful tools to process challenging and potentially painful experiences or feelings about one's identity. This could be a way of

getting control over challenging situations and contexts. *"You can make pretty much any facet of your experience you know that isn't traumatic, and frankly, some of those, fun and you can turn it into something that you can create joy from, either for yourself or like with your friends... You can make something joyous out of something other people might have tried to use against you."*

Specifically in the context of having a trans identity, they described the act of reframing as *"a really great healing tool"* and hoped that their game could give someone *"the framework to reframe your experience of being trans"*. P8 similarly hopes that their game *3 Queers* provides a *"positive, hopeful message"*, showing someone that *"there can be celebration in your own identity"* contrasting with the image in media that being trans is a negative experience.

Play as a Communicative Tool. Speaking about different use cases of their submission *Euphoria*, the bingo card style game, P3 discussed how it could function as a way to communicate experiences and feelings about one's identity to other people even if they do not share these experiences. *"You can play, you and your therapist or you and your friend group where some of you might be trans somebody might be cis or even if you were like the first person in your group to come out as trans, you can play this game with each other and it's a cool way to let them in and introduce people who might not have this like trans experience. It's a cool way to introduce some to the joyous aspect of taking pride and happiness in your identity."*

In this context, play can act as a shared language in which to communicate a complex experience or facet of identity. What could otherwise be a challenging conversation (for example, communicating thoughts about gender identity to a clinician or family member

Table 3: Games settings and processes of gender exploration used in the games.

Game	Setting and Premise	Processes/Techniques Facilitating Exploration and Reflection
Reinvent	A factory creating pink-/ blue- brained robots, of which the player is one. The player needs to escape the factory; they meet an NPC – a robot different to the others, that helps to escape.	Dynamic/evolving character design Perspective-taking of other NPCs Metaphors: the factory setting manufacturing gender-stereotyped robots, the character design of other NPCs who have escaped are noticeably different; every interaction with an NPC leads to learning a new mechanic/giving you the opportunity to change your own character design, mirroring how individuals may receive inspiration for gender presentation
You Choose	A fantasy world inhabited by monsters performing specific roles. There are expectations with each role, and not conforming to these can lead your character to being exiled/leaving the town.	Uses familiar game/fantasy tropes (e.g. RPG classes) as an allegory for gender roles Distancing from real world (i.e. the fantasy setting, the characters being monsters) Use of humour/satire Characters depicting societal roles, conforming or not and consequences.
Guilt/oil/altar	Cyberpunk, horror-esque text-based game in which you play as a shapeshifter in a dangerous occupation.	Evocative/visceral language and imagery (quite violent) Emotional experience from the narrative overall - sense of urgency, of being 'hunted down', Storytelling, play on emotions. Second person to immerse the player Use of metaphor shapeshifting/changing forms as a narrative device throughout to portray a sense of changing expression contextually/with different people
I am Me	A space where the player can customize their character at any time and interact with a variety of NPCs who refer to the player by chosen names and pronouns to experiment and see how they feel when being addressed by these, in an affirming manner.	Character creation screen (where you can set your name and pronouns, and customise your character's appearance) Perception by and interactions with other NPCs, affirming comments, being referred to by your chosen name/pronouns Use of real-life, everyday scenarios (e.g. shops, cafes)
3 Queers	Simulated chatroom with a group of online friends discussing diverse topics. Near the end is a vignette (presenting the background narrative of one character in the chatroom. Developer description: "*Play as Kasper, a young man still figuring out his own gender identity. With the help of other trans people, you explore the wild world of gender and expression through a group chat and a short vignette which dives deeper into the story of one of the other characters!*"	Roleplaying as someone questioning/exploring/considering coming out Educational - learning from the experience/identities of others. Framed as a supportive group of friends - use of chatroom banter/slang Talking through a situation with other people (e.g. about the process of coming out as trans). A familiar setting. Interactivity/narrative control- can choose different chat options to go down different topics, react to other comments Replayability - can replay to explore another topic in more detail Solving puzzles as an example of reflection through action – putting together puzzle of the character at different points, which reflects their identity/how they feel about their identity over time
Norms	Abstract game - set the variables for your character (e.g. speed, gravity), creating a unique game experience; the constitution of your character affects how you play and what you can access in the game map. On successfully completing a level, the player receives a code representing variables chosen for their character – this can be shared with others to embody the same character and try out the level with a new perspective.	Mechanic of setting the rules by customising your character's attributes Sharing aspect - saving your game rules as a code for someone else to try out Customise your character in different ways and explore. Promote experimentation and exploration of the environment.
Euphoria	Each player receives a blank chart. They fill each space with a character that gives them 'gender envy' or inspiration for gender presentation. Players alternate to guess who is on the other person's sheet. Whoever guesses correctly, like the game Bingo, wins	Reflecting on gender presentation inspiration, celebrating these sources of inspiration and generally celebrating this exploration with another person.

Hallow Unseen	Setting is a Halloween party: every player roleplays as a cryptid. Deals with visibility of identity – rewards the player (called an awakening) if they incorporate some aspect of their identity significantly during a situation. With each awakening, characters become more visibly cryptid affecting others' perception.	Collaborative storytelling Roleplaying a cryptid (as a metaphor for someone whose identity does not fit in with the norm) Being encouraged or rewarded to invoke aspects of your identity as part of the gameplay. As characteristics become more obviously cryptid people perceive you and react differently.

who may not be supportive due to a lack of understanding) becomes easier through the act of play. Play negates or minimises the stress associated with disclosing something so personal, making a potentially serious topic more playful. As discussions of trans identities in media perpetuate the idea that it is a struggle, using play can help reframe the conversation by showing them that it is not an inherently negative experience, but that struggles may come from external sources.

4.2.2 Elements of Games/Play that Facilitate Exploration and Reflection. This section focuses on how specific features of games and play support the functions discussed in the previous theme. We have focused on some these elements explicitly in our content analysis of the jam games, produced in Table 3. These represent the researchers' perceptions of game elements that contributed to reflection on gender, which we combine with participant perceptions of aspects they purposefully designed to facilitate exploration or would have ideally designed if they had more time. Some of these characteristics refer to in-game elements/interactions of jam games or other games mentioned by participants that helped them think about gender, and others refer to meta-game behaviours i.e., the context in which you play the game.

Game Elements. The most prevalent element to come up was character creation. Two of the jam games revolved explicitly around the concept of designing/customising your character and having the flexibility to do this over time. One of the developers of *Reinvent*, explained how the design of character creator screens in two games, *Dungeon Daddies* and *The Sims*, enabled more inclusive representation and helped them explore gender.

> "[About *Dungeon Daddies*]: *you can customize your character in the beginning and they had different options even for trans masc characters like to bind and I think that you have makeup options and stuff like that. I thought that was really cool. How I was able to like see myself and recreate ... my likeness in this game.*
>
> *But the biggest one [element that helped with exploring gender] that I would say thinking back on it now was The Sims because it kind of is... I've heard it be called... like a virtual dollhouse and you really get to just play with gender and even more so in the expansions and stuff. . .you can [play] regardless of your body type. Or gender or anything like that. You can let your Sims have a baby or wear different clothes and stuff so it's even less binary than it was before... thinking back like that really let me explore gender and play as other characters."* (P4)

P4 identified how these titles, compared to many mainstream games, do not constrain customisation to binary gender norms and stereotypes, allowing for a variety of representations. *Dungeon Daddies* explicitly allows for trans representation by including the option to bind. This is important because it showcases an aspect unique to the trans experience – by codifying this through an element of games as common as character creation, this has an impact as P4 describes of being able to authentically represent themselves. This can also simply show someone that this is possible, thus normalising different identities. This exemplifies how the design of character creation can be inclusive of diverse identities.

P8, criticising the plethora of binary character creation screens, suggested that developers wanting to design these inclusively should consider various identity elements that can be affected (e.g. pronouns, gender, voice, appearance) independently of each other, and not arbitrarily tie these to a gender label. For example, they criticised the design in *Cyberpunk 2077* which despite some trans representation, lacks nuance in character creation, such as through arbitrarily linking gender to voice: *"Cyberpunk 2077, like they kind of praise it because you can have a trans non-binary character with different sets of genitalia. But then in the end it turned out that your pronouns, the way you are perceived by the NPC is linked to your voice? And that shows again like the restriction of the voice depending where you are perceived as male or female. Which was a missed opportunity I believe."* This quote also touches on the social aspect of games in terms of how one's character is perceived by others – in the case, by non-player characters (NPCs). Flexible, non-binary character customisation is the forefront of the game *I am Me*, which allows the player to customise their names and pronouns at any point. After playing this, P6 spoke about the interaction of NPCs with their customised character in the game in *I am Me*. P6 enjoyed how the other characters called them by chosen name and pronouns, commenting on *"the positivity from each of the characters. As you go through, they're like 'oh, you're looking good', you know, just like that kind of validation."* Thus, social aspects can be important to exploring identity, with the design of NPCs playing a role in affirming and supporting this process.

Contextual Elements. When reflecting on their game *Euphoria* and how it could evolve, P3 discussed the idea of including reflective prompts or questions to guide identity exploration more holistically, as this could encourage players to consider different aspects of gender that they might not otherwise without a trigger. This idea could be integrated as a game element as well as a meta-game behaviour. *"... sometimes I'll see a character and be like this is cool and then I hear them talk and I'm like Oh my God, the gender. It's*

just awakening in me by everything of how you carry yourself, which is also an interesting aspect to ... see who gives you physical characteristics of gender envy. . ., or the behaviour you're socially allowed to exhibit in this piece of media that maybe I in life am not socially as welcome to exhibit."

This reflection is integral to P3's game, which is intended to give players insight into which characters give them the feeling of gender envy; adding a more reflective component through prompts would give them more insight into what characteristics in particular trigger this feeling. In P3's example above, such reflection can help someone identify concrete aspects such as physical appearance, behaviour or voice that they may then want to explore further themselves. In a similar vein, P8 commented on the value of having *"concrete talking points"* during exploration as opposed to the experience of exploration being completely open not being helpful: "*saying, 'oh you can be whatever you want to be' I feel can be as equally as distressing as 'there's only one thing to be'."*

Trackability of gameplay over time was identified as an aspect that could help someone reflect on how aspects of their identity and behaviour have changed (or stayed the same). For example, *Euphoria* derives from a natural process P3 went through of creating boards of characters that gave them gender envy. They discussed how they found older boards they had created, reflecting on how they have changed: *"just the other day I was cleaning out my phone and I found some of the prototypes for the game. Some of the original, little boards that I had made. And they have changed a little, which is cool... it's a fun thing to be able to track your own journey..."*

They go on to explain how having that record enabled them to process certain feelings that are difficult to make sense of in the moment, but retrospectively gives them more clarity about their identity. "*. . . looking at that over time helps me make sense of what in the moment are always just random feelings and then I got to see it change because I've played this solo version of this game. Because I would look at it, I was able to sort out how I felt about it. I was able to process it. I had people to talk to about it. . . And then through that process that was aided by these little mood boards. I was able to accept more pieces of myself. You become happier and more confident, more comfortable expressing your gender in a way that, maybe might have seemed intense or jarring at the beginning, I'm sure some of the people that are... on that board now are going to be different from who I might have allowed to be on the board the first time that I made this game."*

Another element that this quote touches on in how you play the game, is who you play with. The previous section identified communication as an important function of play. Whether playing alone, with friends or family, or as P3 suggests due to their streaming career, playing with their audience, this can affect the player experience and exploratory potential. On playing alone, P3 comments *"even if you just end up like playing this game by yourself by like just filling it out and staring at it like you know that's a fully valid way to play this game. And because the whole point is like did you spark joy? Cool, you fulfilled the win condition."* Their game is intended to be flexible depending on the needs of the player, not prescribing a right way to play with an end goal, unlike many games.

While they played it alone and with close friends who were familiar with the characters they would likely put on the board

(thus creating a positive experience through shared interests), P3 wanted to think about how to expand it to be playable with strangers and with a larger audience, including in a streaming setting. *"I'm trying to figure out a way to integrate it with my chat viewers where maybe they're guessing for me and I can uncover the fields and we can have a conversation about that. So that's the next step for the game, as I would like to develop it, and in a way that I can create this shared experience online or publicly."*

This would create a very different player experience, but one that can still support and even enhance the reflective and exploratory qualities of the game, by triggering streamer-audience conversations through gameplay, thus encouraging shared understandings.

4.2.3 The Jammer Perspective: How the process of Jamming/Creating Games Facilitates Exploration. Along with the act of playing, participants reflected on how being involved in the Jam itself or creating games generally enabled them to explore gender.

Creating as a way to explore and process feelings/prior experiences. Participants described how the process of creating a game enabled them to reflect on their experiences. P5 joined to learn new skills and learn more about the topic. The jam functioned as a space that allowed explicit reflection on this topic – as they reflect: *"it's not something that I've had to think about. So this was a really interesting opportunity to learn about these things."*

P5 also commented on the games produced at the end of the jam overall, reflecting on the different perspectives and approaches taken to this Jam theme and how this enabled them to conceptualise a journey of exploration and discovery, with each game representing a different part of that path. *"It made me realise... in thinking about gender as the theme, there's like different parts of a path to gender discovery... and we were looking at a very early like opening the door into one's path and I think that may have actually reflected at least for me where I am when I think about these things."*

The games seemed to reflect the developer's understanding or stage of exploration; thus, they gained an increased understanding that people have different experiences or ways of conceptualising gender, and that it is a not a unitary concept. This subsequently led P5 to understand how their group's game reflected an early stage in their own understanding.

Subsequently turning aspects of the journey of exploring gender into a game was an emotional experience that could be almost cathartic. P3 commented about the development of *Euphoria*: *"this is probably the most important game to me emotionally, I didn't get to explore gender until shortly before this game jam. And then when this game jam happened I was like I am going to ride these feelings out and create something from these feelings and specifically the process of this jam allowed me to really sit with it and sit with only the joy and none of the angsting [feeling extreme anxiety]."* The Jam provided a convenient opportunity to process emotions related to their own personal exploration of gender safely away from feelings of anxiety.

Translating gender/identity exploration into a game scaffolds thinking. Participants described how the act of ideating and explicitly translating concepts around gender exploration into gamified elements was itself a process of reflection. For the jammers, creating games provided a new framework/lens to scaffold thinking around gender. For instance, P1 reflects on one element of their group's

game, the design of the non- player characters (NPCs). *"... And so the NPC's you meet along the way represent people who have done some of the work before, you know? It's a sort of a progress is built on top of other people's progress. You know, that's the case for a lot of things in life."*

This is just one instance of jammers drawing parallels between certain game elements and gender in the real world. In this example, the NPCs have been designed to represent people who are further ahead in their journey of identity exploration and discovery, who have paved the way to help others like the player character break free from the rigid norms and discover their own way/nurture their own understanding. The structure of the game is that new mechanics/abilities to aid exploration and appearance customisation options are introduced once the player character interacts with new NPCs, mirroring the process how of people might get inspiration in real-life (as people might get inspiration for gender presentation through being exposed to others modelling different ways of presenting).

In the game *Norms* developed by P5 and P7, the developers drew inspiration from an article discussing the writer's experience of speedrunning (a phenomenon where players attempt to complete a game as quickly as possible, using various hacks to override standard gameplay and facilitate quick completion) [37]: *"in the speedrunning community there was this concept of breaking all the rules and like exploiting glitches and making your own goals. So if the goal of the game was to unlock the magical sword, actually you don't care about that, you're trying to get to this place as fast as you can, and so everything that the game is trying to make you do doesn't matter anymore. You're setting your own rules, and they basically said that was incredibly like empowering in terms of them understanding their transgender identity in like a society that maybe has these rules that they're now justified in breaking and so we kind of wanted to build upon that kind of essence of questioning and setting your own rules."'*

Thus, the concept of speedrunning itself has parallels to the idea of breaking societal rules by going against a fixed, linear pathway, an ethos that the developers wanted to build on in their game.

4.2.4 Challenges to exploring gender through games. Participants discussed why there might be limits to games facilitating exploration through the lens of their own challenges in making a game relating to the theme, and challenges observed generally to exploring gender through games.

Too subtle vs. Too reductive: Navigating Nuance. Participants discussed the tension between trying to create their idea of a game with fun mechanics, without trying to take away from or undermine the message. A concern brought up by cis participants in particular when translating aspects of the theme into a game, is that gamifying gender runs the risk of being simplistic by reducing gender, a rich but arguably abstract component, into a game element or mechanic. *"I was trying to work out what the mechanics of a game like that might be while avoiding gender itself as a mechanic because that is probably quite difficult to do well in a way that's not like... reductive."* (P2)

Factors such as game development skill level, time and the game genre they had decided upon may have contributed to this tension (as for example a genre heavier with mechanics such as platforming

compared to a more narrative-based game requires more consideration to the balance between difficulty of playing and actually experiencing what the game set out to achieve in terms of reflection on gender identity).

A related challenge was engaging with the nuance of different aspects of gender. P2 describes the difficulties their team had when thinking about the difference between gender identity, expression and how to present this. *"We struggled a bit with coming up with ways to you know, give the player opportunities to redesign the character, but also delineate between like gender identity and just their appearance and their expression."* (P2)

Sanitisation of content in mainstream games. When thinking about the portrayal of gender or queer themes generally in mainstream games, some comments alluded to the kinds of content that is allowed, reflecting on how certain narratives are prevalent which are quite simplistic and polarised. This means there are limited opportunities to explore alternative narratives. *"Maybe people like engaging with things more if they're not. Uhm, gross?... Grossness is like a bit of a negative connotation, but the organicness of it all. I think sometimes I'm missing this some places."* (P4)

P4 discusses how mainstream content is likely to be designed to be more palatable to a mass audience and help them engage more, at the expense of a more authentic *'organic-ness'* that they feel is missing from media portraying these themes. This discussion led on to then compare how indie (independent) games tend to be more authentic, with developers in these spaces more willing or able to show different narratives/tones (including more sexual/violent content). This mirrors the game P4 submitted, *guilt/oil/altar*, described as *'visceral'* by a few participants and themselves. The language and imagery used throughout the game, inspired by the cyberpunk genre, contributes to an emotive, horrific tone that may cause discomfort to the player – though it is this emotional experience that facilitates reflection on themes such as physicality, gender dysphoria (which *is* a discomforting phenomenon), and expectations/pressures from other people.

Beyond the state of existing game content, P4 reflected on wider discourse in the industry and player communities around gender and queer themes. Namely, due to the politicised nature of the topic and media exacerbating polarised views on what is allowed, this presents a challenge to making and releasing interesting/varied perspectives such as queer characters who are more complex, thus making it difficult to explore alternative narratives. For example, P4 observed how even in queer communities there is backlash to certain content created by queer developers. *"there was this one game I think made by a queer creator. And there was one person in there who had a bit of stalkerish behavior who was also characterized as a queer person. And there was a lot of community backlash of having this kind of evilish uncomfortable person being queer in a queer game. This conversation, this discussion, it really blew my mind. I guess this feeling comes from wanting to have nice representation and for once you have like people look at this and it's like you know, being queer being gay is a good thing is a normal thing is, it's a mundane thing. But then at the same time I think it is a character in a game. . .. We have straight people murdering each other all the time in games. And you don't have straight people write to the developers. I don't know. Maybe there are some writing this. Personally, I don't*

feel my sexuality or my gender is being misrepresented because this person murders."

They touch on the double-standard between what is allowed to exist uncritically for queer and non-queer content, such that queer representation is viewed under a close lens and held to a high standard, at the expense of allowing queer creators to make the content they want. This implies that certain games are filtered out of awareness, limiting opportunities for people to explore different narratives.

Games/Digital Spaces as a Bubble vs. Perpetuating Harms. Two conflicting ideas about the relationship between games (and virtual spaces generally) and the offline world were identified. The first strand related to the idea that games perpetuate existing harms, including gender norms and stereotypes. Digital spaces especially in social contexts are another environment for existing negative behaviour to be reproduced, sometimes even enhanced due to affordances like anonymity.

However, in contrast to this point is the notion that sometimes there is a stark difference between online and offline contexts, such as games, which can be positive and act as a safe space for individuals, thus becoming a bubble. The point that the participant below makes is that if this difference is significant, this could potentially cause more harm as someone may not be in the right environment offline, with the right support systems and resources.
". . . for some people it's better to not explore their gender. As depressing as that sounds. Uh, because I feel like what is being offered [in terms of support] in an actual person to person environment is sometimes really dire, so I'm very ambivalent about it. I think of course it's nice if people break up like gender definitions that constrict them . . . if this is broken up. This is a positive thing culturally I think. I think if the spaces that you may encounter online are very open and very welcoming, very comfortable, very safe and then you go to a gender identity clinic and they're like 'so tell me how you masturbate? What's your childhood trauma' and you're like? OK, so it's a different vibe."

The value of games and virtual spaces in supporting exploration only goes so far if the offline world is such a bleak contrast with little available support.

Contextual factors affect impact of game. A related point is that there are multiple factors that the game developer cannot control when designing a playful experience. No matter the outcome they try and design for, for example if they are wanting to change someone's mindset or encourage more nuanced thinking around a topic such as gender, personal factors or the social environment of the player may exert a stronger influence or change the impact – a similar point is made in *4.2.2.2* to argue that the immediate context around playing the game and *how* you play can affect player experience in different ways to achieve different purposes; here, the point is that that personal, social and larger socio-cultural forces can limit how receptive someone may be. For example, P4 reflects that if someone is not in the right mindset to receive the content of the game or be open to change, there will not be much of an impact. *"I think these things wouldn't resonate with [some] people. . . like a Teflon pan it would just slip right off, and I feel like you have to have some openness in yourself or some stability in your personality or how you go through life.. Maybe some psychological safety to say*

oh, maybe you need to have the energy to do that? And if you don't have that, I think it's easier to default to normative things"

This point of getting into the right headspace to be able to explore such a topic or reflect on oneself links to the notion of playful identity [12].The idea that someone may need to feel psychologically safe and have energy to engage with some types of content or exploratory spaces may relate to the need for content warnings and support resources, for example an explicit statement suggesting the right conditions in which someone may benefit from such a game. P3 also emphasised the need for *"decompression tools"* such as follow-up questions in their game *Euphoria*, particularly if playing with other people who may need guidance in how to approach this topic. Their game also provides an example of explicitly promoting the need for self-care and the need to be aware when someone is not in the mindset to play the game.

5 DISCUSSION

This work has connected individuals who are passionate about games and their potential to provide opportunities to explore and reflect on gender through a game jam. As a result of this collaboration, we have been able to explore how participants engage with the process of creating games that facilitate exploration of gender, and what elements of play they deem important for this process. Our empirical contribution, to be discussed first, is the range of game prototypes developed by participants of various backgrounds and identities that in different ways and utilising different game elements, allow players to reflect on gender identity. Second, is how the very process of jamming and creating the game itself functioned as a mechanism of exploring gender for participants. Finally, we reflect on our method of designing a game jam as an approach to research-through-design to support reflection and collaboration around sensitive and personal topics such as gender identity.

5.1 Reflective Game Design for Identity Exploration

Participating in the jam provided an opportunity for individuals to relay their ideas of how a game can provide a space for exploration by reflecting on what aspects of gender identity were important to explore and what themes and mechanisms could be applied in the process of exploring it. Participants approached this brief in very different ways, resulting in various game genres, a focus on different elements, and designing for different emotional experiences. While some design decisions may have been informed/constrained by factors such as experience with game development, time constraints, and as some reflected on during the interviews, the identities constituting the teams, the core design reveals compelling strategies to support exploration and reflection and priorities therein. We embed and contextualise these insights with previous literature exploring reflective (game) design.

5.1.1 Game elements for Identity Exploration. We first highlight a few key game design elements brought up in the qualitative analysis of jam games and interviews, before looking closely at how these exemplify and extend mechanisms of reflective design as articulated by others.

- **Genre**: Jammers utilised a range of genres to frame their game for exploring gender. These ranged from the more mechanic-heavy such as platformers, to more story-based. The developers leaned into different characteristics inherent in these genres so that players can engage with the theme in different ways. Previous work has suggested that roleplaying games are particularly suited to performing identity, as it inherently privileges certain strategies of feminist game design [30]. RPGs certainly seem to provide the ideal exploratory space as they often feature open-ended worlds allowing players more agency to perform identity through actions especially towards other players and characters. The difference is that RPGs are not necessarily designed with these strategies in mind as Nielsen suggests – they may naturally allow for certain interactions that happen to be fruitful for exploring identity, although they may potentially come with negative repercussions such as harassment by others. This may then limit one's motivation to explore. What if this consideration was already taken into account by intentionally creating a game for the purpose of facilitating exploration of gender? As evidenced by the jam, given the prompt, developers can utilize all kinds of genres in creative, subversive ways, but some also considered aspects such as safety with their game, such as *Euphoria*, which explicitly states the need for playing with someone you trust in a safe space, and to prioritise self-care.
- **Character – Representation and Creation**: The jam participants considered this component in different ways. An interesting design decision was the inclusion of non-human characters (e.g., robots in *Reinvent*, monsters in *You Choose*), which had the effect of examining issues related to gender from a broader perspective by creating distance away from a more life-like world. The design of NPCs in terms of how they interact with the player was also an important choice – affirming dialogue by NPCs was core to *I am Me*. Finally, the design of fluid character creation screens was a significant component brought up by several participants, and especially focused on in *I am Me.* This can be achieved through more control over what to customize, including aspects such as name, pronouns, and physical appearance, and importantly, not arbitrarily linking characteristics together (such as gender and voice). The idea of shifting between multiple identities as with *Reinvent* and *I am Me* reflects the notion of distributed subjectivity [44], increasing the exploratory potential.
- **Social aspect** – Across games there was a mixture of modes, from playing alone, sharing an aspect of individual gameplay with others (as with *Norms*), to actively playing/exploring with others, like with *Euphoria* and *Hallow Unseen* which facilitated collaborative exploration. Characteristics inherent to the game genre e.g., TTRPG provided strategies for exploring identity with others; further, characteristics of exploring gender naturally (as with the case of *Euphoria*) provided game inspiration, as the gameplay was basically unchanged from the natural exploration process.

- **Emotional experiences**: Various emotional experiences were designed for. Some games were more personally affirming (such as *I am Me and 3 Queers*), some overall hopeful in the tone and message (*Reinvent* and *You Choose*) as well as eliciting negative emotions (*guilt/oil/altar*). These emotional responses helped to convey something in relation to the theme and prompt reflection. These games also made use of different modalities such as music and colour to achieve these emotions.
- **Context:** This has an impact on the player experience [16] including the social context such as solitary or social play [43]; this can facilitate different methods of exploration. Sometimes contextual factors were directly tied into a participant's personal experience of exploring gender. This was the case of *Euphoria*, in which the submitted game was a direct and natural progression from P3's own gamified exploration with friends as already described, and meta-game elements such as keeping a record of gameplay allowed for their reflection of identity over time.

This discussion of context partly invokes the concept in game studies of the 'magic circle' [22] – the notion that players upon inhabiting the world of a game enter a reality bounded by time and space, thus creating situations of immersion such that the world outside play ceases to exist. This contributes to the idea of games functioning as a safe space for many, an escape from the offline world. Discussions with jam participants complicate this rigid separation of the play space and external world – not just in that this may be inaccurate to what players do experience, but that such separation is *necessary* or *helpful* in this context of exploring your identity. Rather than games functioning purely as an escape, play can offer a lens through which to reframe experiences/concepts that translate outside of the game. Ian Bogost's notion of 'playgrounds', furthers the concept of the magic circle by arguing that through a process of defamiliarization, we can will ourselves to see the potential for meaningfulness and engagement in mundane situations [5].

5.1.2 Reflecting on Reflective Game Design. Previous work has developed frameworks for reflective design. For example, Sengers et al., articulated six reflective design strategies [38], some of which can be mapped onto the game design elements/strategies from the jam games.

The first strategy, providing for interpretive flexibility, argues that users ultimately should have ownership of the meaning-making process, which can be accomplished by building open-endedness into the system and designing for ambiguity (a value also articulated by others e.g. [30]). From discussions with participants about their own games, their experiences with other games, and our own experiences playing the jam entries, we found that some games acted as probes through which players could interpret various aspects in different ways. For example, a group playthrough of the game *Norms* with members of the research team led to a discussion of what different aspects of the game could be referring to; as a more abstract entry compared to the other games, there was less direct clarification of how the game related to the theme without the context offered by the developers in the summary. When asked what they would like to know about the player experience,

they answered that they were curious if the connection to the theme was evident, or whether it was too ambiguous. However, the ambiguity served to prompt discussion and meta-reflection in a group context.

A discussion with a participant about another jam entry, *You Choose* involved the interviewer and participant offering different interpretations of what the metaphors of different tropes in the game represented. Harking back to the themes of 'translating gender/identity exploration into game elements scaffolds thinking', and 'play as reframing experience', this reflection was a result of using games and game tropes as a lens through which to interpret some aspect of gender. This also connects to the second strategy, giving users license to participate, which Sengers refers to as providing a scaffold for "bridging from the familiar to the unfamiliar" [38].

The third strategy, providing dynamic feedback to users, is explained as presenting information from users back to them to stimulate reflection. This maps on the theme of contextual elements of a game that facilitate reflection, particularly focusing on P3's game, *Euphoria*. The focal point of their game is to create a visual board representing characters that give the player 'gender envy' – thus the gameplay/outcome involves the overall presentation of information that players can reflect on. The collaborative aspect enhances this, giving prompts to aid reflection. P3's comment on keeping a record of boards over time, that is, the aspect of trackability of gameplay over time, is a way to give further feedback to the player of how their behaviours/thoughts/preferences have evolved, providing another dimension to this reflection.

The examples given thus far on how individuals (the developers, other jammers, and the research team) have interacted with the games and how they have stimulated reflections on the games themselves is also relevant to the fifth strategy of building technology as a probe.

Work on reflective game design has not mapped game elements onto these strategies to our knowledge, but in the current context this provides a framework that helps to clarify *why* these games may be effective at helping people to explore aspects of gender and gender identity. We suggest that future work investigate how existing games, and game developers engage with these strategies, and otherwise recommend that developers incorporate these strategies if they consider reflection a worthy goal. To gain more insight into how different game elements lead to reflection on and exploration of gender, we will need further investigation into how different players interact with these games, which is our next step for this project.

This section summarises one important contribution of our work that can be taken forward by game designers, or even beyond game contexts, those looking to design tools to support exploration and reflection of identity. Namely, we have begun to identify aspects of games that support exploration, including designing characters and character customisation such that players have more flexibility/control, with no predetermined associations between characteristics (such as gender and voice). Beyond games, this is also relevant for the design of platforms which incorporate technical identity; some allow users to create self-representations through for example avatars, but often perpetuate gender stereotypes. Embracing queer values such as flexibility in this design allows for more freedom in expression – even if designers aren't intentionally designing for

it, users may explore their identity through appropriating tools, or serendipitously understand themselves through interacting with design.

5.2 Reflections on the Jam

Finally, this section lays out the participants' reflections on creating games as a method of exploration, and the researchers' reflections on organizing jams for a topic as potentially sensitive as gender identity. These reflections embody the research-through-design approach, in that the knowledge gained through the iteration and refinement of the game design/jamming process is just as important as the actual prototypes [3]. We were interested in the co-creation and thinking arising from designing a game as well as the resultant artefacts.

5.2.1 Jamming-as-exploration: Participant reflections. Jams are not a novel research method; prior work has utilized game jams to investigate a specific topic; or to reflect on some aspect of the process of game jams (e.g., how the make-up of teams affects the resultant games produced [11].

An important contribution of the current work is a blend of the two; how jamming itself functioned as a method of identity exploration. Participants reflected on how different aspects of the process of jamming facilitated reflection on gender identity. For example, the very act of ideation and explicitly translating aspects of gender/identity exploration into game elements prompted participants to clearly and considerately think about how to conceptualise gender (for example, in a way that isn't reductive as revealed by one of the themes). This echoes what Bayrak writes about jamming as research-through-design, as "creation of a game decomposes new information whilst composing a new experience" [3] Furthermore, post-hoc reflections on the outcomes of the jam such as observing the gallery of games produced prompted some participants to reflect on how different people conceptualise the notion of gender, revealing that it is not necessarily universally constant and stable as a construct – as participants had different identities and levels of experience/prior reflection on gender identity, the diversity of games in a sense also represented the concept of a journey of exploration. Thus, the act of jamming, and reflecting on the resultant artefacts, contributed to identity exploration.

A benefit to developing these games within the constraints of a jam meant that they are potentially more accessible to play for people with limited game experience, who may benefit from experiencing them. This is because jam participants did not have much time, and in some cases not that much experience with using complex software – but as the gameplay is not complicated, this creates a low-entry point so that players can immerse themselves into the exploration.

Of course, if given access to other tools and technologies, participants could employ a variety of other modalities and strategies. The multimodal nature of many games means that they are uniquely positioned to explore a construct such as gender, which itself is multifaceted and can be expressed/constituted through various modalities. For example, [41] explored the impact that changing the sound of participants' footsteps had on their body perception in the context of physical activity. They found an interesting interaction between the frequency condition and gender perceptions/aspirations

(i.e., one's wish to be more masculine or feminine). The high frequency condition led participants who wished to be more feminine to perceive their body as lighter. Integrating auditory cues with visual cues, for example in virtual reality and gaming, may lead to a more immersive and accurate sensory experience, helping people explore their gender identity.

5.2.2 Designing Inclusive Jams: Researcher Reflections. We aimed to design an inclusive jam that, through our methodological decisions, championed research-through-design through paying consideration to the actual design process of jamming. Here we reflect on these decisions, including recommendations for the following elements when exploring a sensitive matter such as gender identity, as well as limitations of our approach. Game jams in their standard format have received criticism for perpetuating exclusive practices evident in game development culture such as an accelerated timeframe and high competitiveness [24]. However, learning from the reflections of others who have engaged with game jams through a feminist lens in prior literature [18, 24] and discussions during the preparation, we have developed an approach that is inclusive and conducive to speculative thinking around sensitive topics.

- **Virtual and Asynchronous**: While the mode of the jam being run remotely was primarily in consideration of the covid-19 pandemic, this option allowed for participants to access the event more easily. The asynchronous aspect removed the pressure for participants to engage at fixed times, but they could still learn from and contribute to discussions at their own pace.
- **Flexibility**: We designed for flexibility in several aspects of the jam. The format being virtual and asynchronous lent itself to flexibility, as this meant participants could engage with the event in different ways, in their own time. This meant that even with other commitments, participants could fit the Jam into their own schedule. Communications took place over Discord, with some prompts for participants (i.e., giving updates on their status). We also championed flexibility by emphasizing that we were more interested in the design thinking of participants whatever form this took – so they could choose to submit a game design document or rough sketches instead of a prototype. We wanted to remove the pressure to submit a polished game, although this was a goal some participants set for themselves.
- **Design Prompts:** The presentation of design prompts on both a shared Miro board and sent individually in a personal design workbook meant that participants could reflect on the theme and their own identity privately and choose what to share publicly. We took great care in designing these prompts, which were a result of previous work/discussions we held with people with lived experience of or professional experience of supporting those exploring their identity [17].
- **Teams vs. Individual Jammers**: We had a mixture of games submitted by groups versus individual participants. All games created a unique experience that met the aim of facilitating an exploratory experience regardless, but it is interesting to note how team compositions affected the game. For example, reflections from participants who were

cis indicated that they were at the beginning in their journey of understanding/exploring identity, and their limited knowledge affected the type of game they thought they should/were allowed to make (i.e., not a narrative game). For some participants who submitted a game themselves, the nature of their game seemed incredibly personal and sensitive – such was the case with *guilt/oil/altar*, which may have been difficult to make with others unless adequate trust was established. Something to consider is that people may feel too overwhelmed/intimidated to participate in online discussions or to work with others – there is especially a need to consider dynamics between members with different identities/understandings.

While some of these organizational decisions served to create an experience that was flexible, they also had constraints. Namely, the nature of being completely remote did not work for everyone, as this was not as engaging. While in some cases it could improve accessibility (i.e., due to no travel), it did still require the right technology to take part; organisers of such online/hybrid events should consider how to mitigate disparities in this context by providing access to technology to enable participation. We offered participants reimbursement for childcare while participating, if needed, paying for data used to participate or certain software if needed. This was advice given to us by our public engagement team. Involving teams that work in public engagement can be a good way to get advice to make such events inclusive and thinking of more pragmatic aspects of reaching people.

Finally, this project has embraced the approach of research-through-design throughout. Aspects of research and design took on different dynamics in their interaction, echoing notions of inter-weaving and coupling [2]. Much work went into the preparation of the event including the materials such as prompts (through drawing on previous research and sense- checking materials with individuals with personal and/or professional experience of exploring, or supporting those exploring gender). This was to support the design phase by stimulating participants' reflective/speculative thinking [17]. The process and result of jamming led to research insights into game elements/interactions that can support exploration of gender. Engagement with the jam games from the participants during the interviews allowed us to compare creator and player perspectives; reflections on the varied approaches different jammers took provided not only the researchers but participants with insight into how others may think about gender and how this thinking is not monolithic, which itself proved to be a valuable process for exploring gender. Finally, we had different forms of documentation at all stages, which is recommended in the literature as good practice for research through design [33]; this included initial materials, design workbook, researchers' documentation of game playthroughs, participants' documentation during jamming, such as notes and diagrams of different iterations of the game design and Discord discussions during the jam.

6 CONCLUSION

We designed a remote game jam to understand how participants of all identities with experience or interest in exploring gender envision the design of playful tools to support this process. Using

jamming as a research-through-design approach was insightful through foregrounding the knowledge gained from creation of games as well as playing the resultant prototypes, offering multiple understandings of exploratory game experiences. This work contributes different perspectives on how gender exploration can be translated into a game, demonstrating how different elements of games and the context around playing can support or restrict this process. Further, the process of jamming itself constituted a method of reflection and exploration. These insights can be used by game developers who are seeking to create game experiences, or designers generally aiming to create tools that promote reflection such that players can better understand their and others' gender identities and related experiences.

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A   APPENDICES

A.1   Game Jam Sub-themes

Sub-Theme	Description
Wellbeing	Gender identity has an emotional/wellbeing component. While the process of exploring/discovering one's gender may involve negative experiences and emotions, it can also contribute to happiness, euphoria, building resilience, and a sense of pride as a person works towards self-understanding.
Gender Presentation and Expression	Gender/identity is multidimensional and can be expressed or experienced in different ways. Many attributes of the self are considered to be gendered. This may include appearance, voice, behaviour etc.
Perception	How are you seen by others? How do you see others? Given the performative, social aspect of gender, how others perceive your identity especially according to social norms can be an important part of exploration or validation.
Social	Social influences such as inspiration from others, and social support are really important factors that help us to understand ourselves. But stigma persists, and it can be hard to know who to go to for support and what reactions they might have.
Queerness. . . Fluidity. . . Ambiguity. . .Multiplicity	When the concept of queerness challenges dominant norms and categories (such as static, binary gender labels) it gives space for 'queer qualities'. Perhaps exploration of one's gender need not mean finding a fixed label, but instead allowing space for fluidity, ambiguity and multiplicity as part of one's journey and/or identity.
Intersectionality	Intersecting aspects of our identity interact and lead to fundamentally very different experiences. Constructs like race, class and gender do not operate on their own, but by individuals existing at these intersections. Under a society that especially privileges white heterosexual cisgender males, groups of people can be multiply burdened/disadvantaged/erased.
Stereotypes	Although in recent years understanding and respect for gender diversity has improved in many countries, there is still a long way to go. Most societies promote heterosexuality and being cisgender as the 'normal' or preferred way of being, and people still make assumptions about people's gender and sexuality based on outward appearance and harmful stereotypes.
Destigmatising and Celebrating Diversity and Exploration	There is still little visibility of diverse gender identities, expressions and experiences. Everyone has their own unique journey relating to their gender – how can we represent and celebrate this?