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Character Immersion in Video Games as a Form of Acting

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We examine here the proposal that playing video games is akin to a form of acting, in other words, a type of informal character portrayal in which the player not only controls the actions of the character but *enacts* the character's narrative and emotional arc. Informal acting in video games is a mentalistic process in which the player embodies the character by empathizing and immersing with the character. To examine the extent to which video game players "become" the characters that they are playing, we had 45 experienced video game players complete an online survey in which they reported on their psychological states when playing character-based versus self-based video games. Their responses demonstrated that players immerse themselves in the emotions and thoughts of the main character in character-based games, but do so far less in self-based games. These results support the hypothesis that, when there is a contextualized character in a game, the player views this character as a separate entity whom they identify with and act as, as opposed to being merely an avatar that the player projects themselves onto.

Public Policy Relevance Statement
There has been little psychological research on how people engage with video games, despite their mainstream popularity. As such, this study aims to shed light on the psychological process of gameplay by investigating the extent to which a player engages in role playing to become a sort of actor when playing character-based video games, much as in theater.

Keywords: video games, immersion, projection, character, acting

Video games can be considered as an interactive narrative medium that offers players the agency to effect change in the story through their avatar. A player's avatar can be a fictional character from a film franchise (e.g., *Batman*), an anthropomorphic being that the player designs (e.g., *The Sims*), or a graphical representation of an object that the player manipulates (e.g., a virtual chess piece). The type of relationship that a player has with her avatar therefore varies widely, depending on the game (Banks, 2015). Some types of avatars demand more emotional involvement and immersion than others. Avatars that are characters in narrative games will have distinct psychological traits, compared with non-psychological avatars in non-narrative games, such as *Pacman*.

As such, video game players can experience a double consciousness between their own self and their character (also known as "aesthetic doubling"), a phenomenon similar to the psychological experience of dramatic actors (Bowman, 2018; Chekhov, 1953/1991; Konijn, 2000; Østern & Heikkinen, 2001). Just as actors have to balance their own emotions with those of the character that they are portraying on stage, so too video game players have to simultaneously manage their own goals and emotions alongside those of the character they are playing as in the game (Hefner et al., 2007; Schneider et al., 2004). However, video game players, unlike dramatic actors, do not perform the gestures or facial expressions of their characters, nor do they continuously portray a character for an extended period of time. The primary objective of the present study is to examine the extent to which video game players engage in a process akin to acting—what we will refer to as "proto-acting"—by probing whether they align with their character through a psychological process of immersion, or whether they merely view the character as an extension of themselves onto which they can project their own traits.

Ludic Versus Narrative Games

Video games offer challenges that any player must overcome by using her technical skills and understanding of a game's mechanics (Aarseth, 2012; Caracciolo, 2015). The player therefore has a ludic (i.e., game-related) interest in effecting change in the game and in succeeding within the game's given constraints (Aarseth, 2012; Caracciolo, 2015). Some games present these ludic challenges within a narrative context in which the player's choices and actions have consequences for the protagonist and plot of a story. The degree of "narrativity" of a video game varies based on the

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narrative elements included in the game, such as the storyworld, characters, and plot (Jenkins, 2002; Juul, 2001), with plot being one of the most influential factors contributing to narrativity due to the organizational structure that a plot imposes onto a game (Brooks, 1984).

At the basic narrative level, most video games have a storyworld, whether it be a virtual game board, such as in virtual chess, or an elaborate fantasy world, such as in *The Witcher*. At the next level, a game's storyworld can be populated with characters. Some games have stock characters that the player can select to play as, such as in *Mario Kart*. Others have characters that the player can personalize, such as in *The Sims*, while more plot-structured games can have a well-defined character (i.e., a protagonist) whose main goal drives the progression of the game's story. Depending on the "characterness" of the game, a plot may or may not be present. Tu and Brown (2020) developed a model of plot structure in which the plot arc of a story is viewed as being isomorphic with the protagonist's emotional trajectory in the story. According to this embodied plot model, it is the presence of a protagonist having goals and reacting to obstacles in achieving these goals that gives rise to plot structure. A game with a well-defined and precontextualized protagonist will thus have a high degree of narrativity, since the game will have a plot by dint of the protagonist's emotional journey.

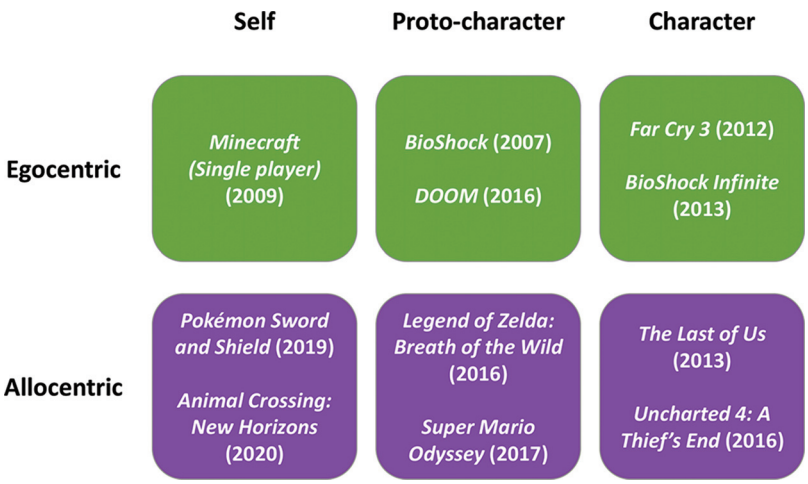
It is not only the protagonist of the game who experiences an emotional journey during the game. The player does as well. However, the emotional journeys of the player and protagonist are invariably linked. The player experiences an emotional journey by *playing as* the protagonist, while the protagonist experiences an emotional journey in the story by *being controlled by* the player, similar to a puppeteer controlling the gestures of a puppet (Calvillo-Gámez & Cairns, 2008). The player's experience is thus a balance of ludic and narrative interests (Caracciolo, 2015). This is similar to an actor, who has to balance the performative task of being mindful of their stage environment (including their acting partners) with the narrative goal of conveying their character's emotional journey to an audience (Konijn, 2000). A non-narrative game with nonpsychological characters and no plot, such as *Pacman*, will emphasize ludic interests over narrative interests. By contrast, a narrative game may potentially give equal consideration to narrative and ludic interests.

Because the narrativity of a video game varies as a function of the presence of plot and character, games can be classified as being low in characterness (i.e., high in ludic interests) or high in characterness (i.e., high in narrativity). Categorizing games based on their level of "characterness" is similar to Francesco Alinovi's (2011) four types of avatar personalities, which includes a-dimensional, one-dimensional, two-dimensional, and three-dimensional avatars. To examine whether the characterness of a game influences a player's cognition, we explore three basic types of games based on their increasing level of characterness, from self-based games, to proto-character games, to character-based games (Figure 1). These three game types mirror Alinovi's a-dimensional, one-dimensional, and three-dimensional categories of avatars, respectively. Self-based games are those in which there are no characters and where players play the game as themselves, such as in *Minecraft* or virtual chess. Proto-character games have characters, but they are very basic or "prototypical" stock characters, such as in *Mario Kart* and *BioShock*. Proto-characters often have limited facial expressions and verbal utterances, which prevents the player from being able to infer the character's emotionality and thought processes. Finally, in character-based games, there is a well-defined protagonist that the game designers have created and therefore a predetermined plot arc as well. The player has the agency to effect change in such games and to embark on side quests, although the room for significant plot deviation is limited.

Each of these three categories of games can be further subdivided into two categories based on the spatial perspective afforded to the player: egocentric (first-person perspective) or allocentric (third-person perspective). In an egocentric game like *BioShock*, the player sees the actions of the game through the eyes of the character who they are playing as, whereas in an allocentric game

Figure 1

Six Game Categories, as Organized According to the Two Game Dimensions of "Characterness" (From Left to Right) and Spatial Perspective (From Top to Bottom)



Note. See the online article for the color version of this figure.

like *Super Mario*, the character is an external token that exists within the gameworld. A 3 × 2 crossing between the game dimensions of characterness and spatial perspective results in the six game categories that will be explored in the present study. Figure 1 provides examples of games in each category. It is important to note that we are not proposing a new typology of games. Rather, we would like to determine whether players experience a character-based game differently from a noncharacter-based game (i.e., self-based game), and to do so, we need to consider the effect of a first-person versus third-person perspective.

Video Games and Role-Playing: A Dramaturgical Perspective on Game Studies

As the characterness of games increases, the player is more likely to perceive the avatar as an independently thinking agent or character (Banks, 2015). This creates the possibility for players to form a relationship with the character. This relationship may lead players to *empathize* with their character's emotions and experiences (Zillmann, 2006), as if interacting with a real person. The player's empathy can stimulate them to become immersed and invested in the character to the point that they play the game *as* the character (Sierra Rativa et al., 2020). This process of players emulating the emotions of characters and carrying out the characters' actions is a form of role-playing, even when the players are not physically enacting the characters (Dormans, 2006). Video games can therefore be considered as a type of "cyber-drama" in which games have similar narrative elements to drama, but where the players are given more agency to effect change in the story than is possible by a traditional actor (Murray, 1997).

Character Immersion Versus Self-Projection

To determine whether video game players role-play during gameplay, we first need to differentiate two possible, but not mutually exclusive, processes of player/avatar interaction. If the player views her avatar as a "neutral container" lacking a personality, then she is likely to *project* her own moods, desires, and goals onto it (Papale, 2014). In other words, the avatar becomes an extension of the player. However, if the player is able to empathize with the mood states presented by the avatar as an agential character, then the player is more likely to *immerse* herself in the experience and emotionality of the avatar. The player is able to adopt the character's thoughts and emotions through an empathic process of immersion (Gee, 2008). Brown (2020) described the process of projecting the self onto an object as being an "other-as-self" mechanism, whereas the process of immersing oneself into and portraying a character as being a "self-as-other" mechanism.

At first glance, projection and immersion appear to have opposite player–character directionalities. In projection, the player overtakes the character, whereas in immersion, the character overtakes the player. However, it is important to note that these processes can overlap. The player performs actions in a game, but when these actions are being attributed to a character, the player is also performing the actions *as* the character and thus playacting the role of the character (Yee, 2006). A hybridization between projection of the self and immersion into the character is therefore possible, as well as other varying relationships (or nonrelationships) between avatar, character, and player (Banks, 2015). In addition, a video game player, similar to an actor, experiences a double consciousness in which she balances two states of mind: her own subjectivity and that of the character (Bowman, 2018; Konijn, 2000). Therefore, when we talk about character immersion, we must acknowledge that the player does not completely lose herself when immersing with the character. Rather, the character has a greater influence over the player than would occur if the player only engaged in the process of projection onto the character.[1]

Character immersion differs from the ludic, spatial, sensory, emotional, and narrative types of immersion that are often described in game and narrative studies (Bowman, 2018; Lankoski & Järvelä, 2012). Game immersion broadly refers to the degree to which a player is absorbed and engaged in the gameplay (Michailidis et al., 2018; Ryan, 1999) and is sometimes compared with a flow state that an individual might experience when they are deeply focused on an activity (Csikszentmihalyi, 1990; Michailidis et al., 2018). Game immersion is dependent on a variety of factors. Video game designers can simulate *spatially* immersive experiences by creating a heightened sense of realism through complex world-building, detailed visual graphics, emotional musical scores, and easy-to-understand game control mechanics (Ryan, 1999). They can also induce a high level of *narrative* immersion—otherwise known as narrative transportation—by developing elaborate and meaningful story plots (Green et al., 2004). Narrative immersion is sometimes referred to as emotion immersion, because the player is emotionally reacting to the story and characters (Ryan, 2001, 2008). *Character* immersion is related to a player's sense of narrative immersion since characters are an integral part of narrative. In cognitive film studies, character immersion can be described as embodied simulation, since the film viewer embodies the character by imagining the character's perspective (Gallese, 2009; Tversky & Hard, 2009). However, when video game players are immersed in a specific character whom they are playing as, they are engaging in role-playing in addition to embodiment (Bowman, 2018; Yee, 2006). When players experience character immersion, they are *enacting* a character, which goes beyond simply empathizing with a character in the way that a film viewer does (Bowman, 2018; Harviainen, 2003). In other words, they are not only engaging in a process of theory-of-mind (ToM) to infer the mental states of the character, but are also engaging in an embodied process of becoming the character (at least partially) the way an actor would.

The informal nature of role-playing during video game play makes it more similar to informal "proto-acting" (Brown, 2017) than to dramatic acting. Proto-acting is a form of brief and casual

[1] We would like to acknowledge that immersion and identification are not entirely distinct phenomena. The definition of identification often overlaps with immersion and empathy (Brown & Cairns, 2004; Busselle & Bilandzic, 2009; Shackleford, 2020). Cohen (2001) defined identification as a sharing of emotions, thoughts, and goals with a character. Likewise, Van Looy et al. (2012) found that avatar identification was associated with role-play, with embodied presence in the character being a significant contributing factor. As such, immersion is commonly referred to as identification. However, we have opted to use "immersion" as an alternative term to describe a player being temporarily engulfed by the thoughts and emotions of the character during gameplay because it is related to the concept of narrative immersion and transportation (Green et al., 2004; Ryan, 2001, 2008).

role-playing that people engage in on an everyday basis, such as when a speaker quotes a coworker in a conversation, or when a parent quotes Mama Bear while reading *Goldilocks and the Three Bears* to their toddler before bed (Brown, 2017; Matharu et al., 2022). When someone imitates or quotes another person or character, they are temporarily role-playing as that person and are able to easily switch between being themselves and acting as the other person. This differs from dramatic acting, where an actor formally portrays a character within a story for an extended period of time to an audience as part of a stage performance. While video game players do not quote characters or imitate their gestures like an individual would when proto-acting, they engage in a similar cognitive process of switching between themselves and the character they are playing as, which is also known as double consciousness, as was discussed in the previous section. Double consciousness is much more observable in proto-acting than in dramatic acting because a viewer can see the individual alternate between being themselves and the character.

Objectives and Predictions

The principal objective of the present study was to disentangle the processes of immersion and projection in order to determine the extent to which a player role-plays a character (i.e., proto-acts) during gameplay. To do this, we conducted an online survey study in which experienced video game players had to recall and report on their psychological states when playing two self-based, two proto-character-based, and two character-based games in the past, where *Pacman* served as a nonpsychological baseline condition. We hypothesized that four key psychological processes—namely, character immersion, projection, ToM, and spatial immersion—would differ based on the varying degrees of characterness of the games. First, we predicted that the degree of self-reported character immersion in games would increase with increasing levels of characterness of the games, spanning from self-based to proto-character-based to character-based. Regarding projection, we predicted that players would be more likely to project themselves onto their avatars when playing self-based games compared with character-based games due to greater self-similarity. Overall, we predicted that proto-acting would preferentially occur when gamers played character-based games, but not when playing self-based games that are often nonnarrative and that lack in characterness. In like form, we predicted that players would engage in ToM processing if they viewed the character as an agential and psychological being, as compared with a nonpsychological character like *Pacman*. Finally, we predicted that both character immersion and spatial immersion would be more pronounced when players played games from an egocentric, first-person perspective compared with an allocentric, third-person perspective due to the more embodied experience provided by the first-person perspective, regardless of a game's characterness.

Method

Participants

The sample consisted of 45 participants (six female, 26 male, one other, 12 preferred not to disclose) having a mean age of 20 years old (range: 18–32). They were required to have played video games for a minimum of 10 hr/week. Their actual mean playing time was 19 hr/week (range: 12–60 hr). Participants were recruited through online video-game-focused social media groups and forums. Thirty eight participants were from Canada, four were from the United States, two were from Europe, and one was from India. Each participant was compensated $5 (Canadian currency) for their time. Participants provided informed consent before beginning the survey. The study was approved by the McMaster Research Ethics Board.

Procedure

Google Forms was used to create the rating survey for this study. The survey's web link was distributed to social media groups and forums on Discord, Facebook, and Reddit. The survey consisted of 12 statements about seven game categories, resulting in a total of 84 items. The seven game categories include the six categories shown in Figure 1 as well as *Pacman* as a control game, due to its low characterness but high familiarity and popularity among gamers. Participants were eligible to participate in the study if they had played at least five out of the seven game categories. A total of 59 participants met this eligibility criterion. However, 14 of them were subsequently removed from the data set because they either did not play *Pacman* or did not play any of the character-based games. For five of the six game categories outside of *Pacman*, participants were given the option to choose between two games, as shown in Figure 1.[2]

The seven game categories were presented in a fixed order in the survey, and were selected based on the following criteria: (a) they must be single-player games, (b) their release date must have been within the last 15 years, and (c) they must be commercially successful, having sold more than 10 million copies in North America. We avoided multiplayer games and games with ambiguous or branching plotlines because these game-traits would introduce additional variables for consideration. We also excluded self-determined games that allow the player to design and personalize their avatar, such as in *The Sims*, because the characterness of the created avatar cannot be controlled and thus varies depending on the player's choices.

Measures

Participants were asked to respond to 12 statements per game. The first statement was a knowledge question that probed a participant's game-specific knowledge about each game in order to ensure that they had played the game to a sufficient extent. For the subsequent 11 statements, participants had to indicate the degree to which they 1 (*disagreed*) or 5 (*agreed*) with a statement on a 5-point Likert scale. The higher the Likert rating, the stronger the participant's psychological experience of that variable when playing the game under consideration. Three of the 11 statements were lure statements that were not analyzed, while the remaining eight statements measured one aspect of the four psychological variables being investigated: character immersion (i.e., proto-acting),

[2] There was only one game that fit our selection criteria for the self/egocentric category, which was *Minecraft*, and no other self/egocentric game is comparably as well-known as *Minecraft*. As such, we determined that *Minecraft* would sufficiently represent the self/egocentric category and only included one game option, instead of two.

ToM processing, projection, and spatial immersion. Each of the four scales had moderate internal consistency. The reliability score of each scale, which was assessed using Cronbach's α, is as follows: character immersion, α = .55; ToM, α = .60; projection, α = .79; and spatial immersion, α = .68. The 11 statements were ordered in such a way as to ensure that no two items from the same scale were adjacent. This order was fixed for all participants and games. The complete list of statements and their associated psychological categories are shown in Table 1. Extensive pilot testing was conducted in order to refine the precise wording of each statement and optimize its interpretability. At the end of the survey, participants gave responses to an additional 20 statements regarding their personality traits and empathic abilities using the same Likert scale (Davis, 1980; John & Srivastava, 1999; Lee & Robbins, 1995). The survey took 30 to 40 min to complete. Further details regarding the logistics of the administration of the survey are available upon request.

Analyses

The raw data from Google Forms were exported to a Microsoft Excel spreadsheet. Participants who did not provide responses for *Pacman* or any character-based games were removed from the data (n = 14), resulting in a final sample of 45 participants. The data were screened for any incorrect responses to the knowledge questions, although none were found. The means and standard deviations of the four characterness variables were calculated. The multiple statements for a given category were averaged together. The lure statements were excluded from the analysis.

The statistical analysis was based on pairwise t test comparisons according to the two dimensions of the games being explored (characterness and spatial perspective). For the characterness dimension, pairwise comparisons were conducted between *Pacman*, self-based games, proto-character games, and character-based games. The statistical significance level was set to $\alpha < .05$. For the spatial perspective dimension, pairwise comparisons were conducted between *Pacman*, egocentric games, and allocentric games, again at $\alpha < .05$. To attenuate for type-1 error across the multiple comparisons, the reported t test p values were adjusted using the Holm's sequential Bonferroni method, unless otherwise stated. All statistical data analyses were run in Microsoft Excel and R 3.3 (R Core Team, 2018).

Results

Figure 2 presents the mean rating data as a function of the characterness of the games. *Pacman* served as the control condition in both analyses and showed significantly lower ratings ($p < .0001$) for all variables compared with the other categories of video games.

Character Immersion

A principal finding of the analysis was that self-reported character immersion increased monotonically as the characterness of the games increased (Figure 2). Players gave significantly higher character immersion ratings for character-based games than for proto-character games, $t(44) = 9.7$, $p < .0001$; $d = .90$, and self-based games, $t(44) = 7.01$, $p < .0001$; $d = 1.23$.

Theory-of-Mind

The ToM results exactly mirrored those for character immersion, with stronger ratings of mentalizing with characters as the characterness of the games increased. Players gave significantly higher ToM ratings for character-based games than for proto-character games, $t(44) = 7.85$, $p < .0001$; $d = 1.19$, and self-based games, $t(44) = 11.12$, $p < .0001$; $d = 2.12$. Likewise, proto-character games had significantly higher ToM ratings than self-based games, $t(44) = 5.32$, $p < .0001$; $d = .99$. Character immersion and ToM ratings were highly correlated with one another for the character-based games, $r = .51$, $t(44) = 3.89$, $p = .0003$.

Projection

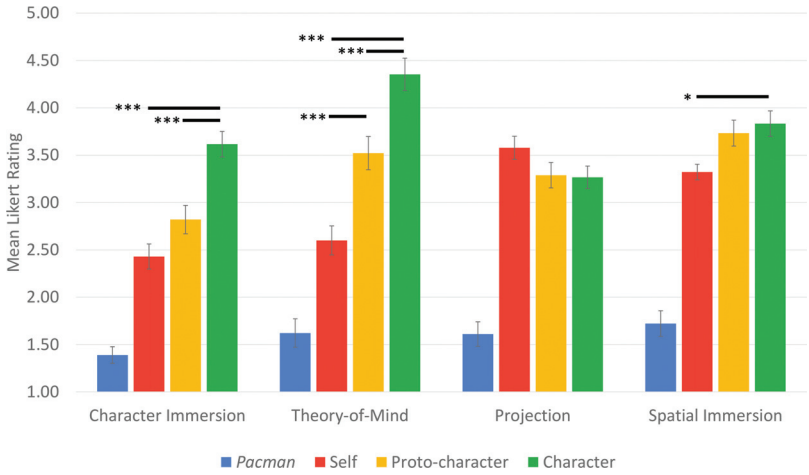
The players' reported tendency to project themselves onto their game characters showed a different trend than for character immersion and ToM. Contrary to our hypothesis that players would project themselves more onto "self" characters than onto "other" characters, we observed no differences across the characterness categories (Figure 2), although all games were significantly higher than *Pacman* ($p < .0001$). This suggests that players do not

Table 1
Statements Used in the Survey

Statement no.	Statement	Category
1	When I play this game, I tend to develop the same emotions that my character/avatar is feeling.	Character immersion
2	When I play this game, I make choices that reflect what I would do, rather than what my character/avatar would do	Lure
3	When I play this game, I feel like my actions have consequences to the plot of the story.	Lure
4	When I play this game, I project my own emotions onto my character/avatar.	Projection
5	When I play this game, I understand why my character/avatar wants to progress through the game's story.	Theory-of-mind
6	When I play this game, I feel that I am physically moving through the game's world.	Spatial immersion
7	When I play this game, I tend to start thinking more like my character/avatar than myself.	Character immersion
8	When I play this game, I see my character/avatar as being important to the plot of the story.	Lure
9	When I play this game, I feel more rooted in the game's spatial environment than in the local environment around me.	Spatial immersion
10	When I play this game, I am able to understand my character/avatar's inner thoughts and feelings.	Theory-of-mind
11	When I play this game, I extend my own personality onto my character/avatar.	Projection

Note. The associated psychological category (or Lure status) is listed in the third column.

Figure 2
Mean Ratings for Character Immersion, Theory-of-Mind, Projection, and Spatial Immersion as a Function of the "Characterness" of the Games (Pacman, Self, Proto-Character, Character)



Note. All pairwise comparisons with *Pacman* are significant at Holm-Bonferroni adjusted $p < .00001$ for each dependent variable and game category, but are not shown using stars. Error bars indicate standard errors of the mean. See the online article for the color version of this figure.
* $p < 0.01$. ** $p < 0.001$. *** $p < 0.0001$.

project themselves any less in character-based games than in self-based games. Instead, they project themselves while also immersing in the character. However, players gave higher character immersion ratings ($M = 3.62$) than projection ratings ($M = 3.27$) for the character-based games, $t(44) = 2.33$, unadjusted $p = .025$, $d = .38$, suggesting that immersion may be the stronger of the two processes (Figure 2).

Spatial Immersion and Spatial Perspective

We now look at two aspects of the results that are related to a player's spatial approach to the gaming experience: their self-reported spatial immersion in the game and our binary classification of the game categories into egocentric and allocentric types. Figure 2 demonstrates that players reported being more spatially immersed in the storyworld of character-based games than self-based games, $t(44) = 3.65$, $p = .005$, $d = .49$, but not compared with proto-character games, $t(44) = .69$, $p = .99$, $d = .12$.

Finally, while we predicted that self-reported spatial immersion would be greater for egocentric than allocentric games, the results failed to support this hypothesis. Egocentric and allocentric games showed comparable levels of self-reported spatial immersion, which were significantly higher than ratings for *Pacman* for both game categories ($p < .0001$). Only one of the pairwise t tests between egocentric and allocentric games was statistically significant. Video game players reported higher projection ratings for allocentric games than egocentric games, $t(44) = 2.51$, unadjusted $p = .016$, $d = .17$. The results differed from our prediction that games played from an egocentric perspective would lead to higher feelings spatial immersion in the game. This suggests that the spatial perspective of the player is not a driving factor in determining how spatially immersed a player feels while playing a game. A game played from a third-person, allocentric perspective can be just as spatially immersive as an egocentric game if the game design includes good audiovisual effects and complex character building.

Discussion

The aim of this study was to determine whether video game players informally role-play as their in-game characters through a process known as proto-acting, and whether their tendency to do so varies with the characterness and spatial perspective of the game. Video games vary with regard to their ludic and narrative features, which means that players may engage in proto-acting to varying degrees across different game types as a function of these features. We organized video games based on a crossing of narrative (i.e., characterness) and ludic (i.e., spatial perspective) dimensions. We conducted a survey study that asked experienced video game players to provide ratings of their experiences across six categories of games. The results demonstrated that self-reported character immersion increased monotonically with increasing characterness, where character-based games were associated with more character immersion than self-based games. We differentiated character immersion from the process of spatial immersion, and proposed that character immersion is a marker of proto-acting, since the player is taking on the thoughts and empathizing with the emotions of the character (see the survey statements in Table 1). These results support our prediction that when there is a clearly contextualized protagonist character in a game, the player may be more likely to immerse herself into the character and subsequently role-play as that character. On the other hand, in the absence of a well-defined protagonist in a game, the player may be less able to immerse herself.

In contrast to the character-immersion statements in the survey that examined the extent to which the player's psychological states converge with those of the character, the ToM statements probed whether the player views the character as a separate entity. The ToM results followed a similar monotonic trend to the character-immersion results, where players gave higher ToM ratings for more character-based games (Figure 2). However, the mean ToM ratings were higher than the character immersion ratings, showing that, while players are able to understand the motivations and emotions of the character, they may not always immerse in the emotions of the character as strongly. ToM and character immersion are two related processes that involve the player recognizing and perceiving the avatar as a separate, external being (i.e., a character). We contend that character immersion is a more complex psychological process, where the player actively places herself into the mindset of the character (e.g., Statement 7: "I tend to start thinking more like my character than myself").

Both ToM and character immersion differ from projection, which involves a psychological anchoring in the opposite direction. In projection, the player extends her identity onto the avatar (Brown, 2020), rather than the reverse. We predicted that games with less characterness, such as self-based games, would have more projection than character-based games. However, the results did not support this prediction. Instead, character-based games showed comparably high levels of projection to self-based games, where both were significantly higher than *Pacman*. While character-based games had higher levels of character immersion than self-based games, they appeared to show similar levels of projection. Video game players seem to immerse themselves with a character *and* project themselves onto a character when playing character-based games. They balance these two processes simultaneously and might thus experience a split in consciousness similar to actors. As such, they have to be mindful of their own needs and desires while portraying a character (Bowman, 2018; Konijn, 2000).

While the current results show that both immersion and projection are present when playing character-based games, they do not reveal whether players balance these two states of mind simultaneously, similar to actors, or whether they alternate between the two states, which would be more in line with proto-acting. The results of this study suggest that managing the self and the other may not be a domain-specific skill that only actors are adept at. The presence of character immersion in video games might also challenge the parental concern over the presence of violence in video games and whether it negatively impacts a child's empathy and emotional development. Since character immersion is a process of embodying a character's mental states, it is an empathic process (Bowman, 2018; Gallese, 2009; Tversky & Hard, 2009), similar to how audiences become immersed in reading or watching fictional stories (Green et al., 2004). Research findings have been mixed on this topic, with conclusions divided between video games either encouraging aggression (Anderson et al., 2010; Bartholow et al., 2005) or having no significant impact on lowering empathy (Ferguson & Kilburn, 2010; Kühn et al., 2018). Self-based games had slightly higher levels of projection than character-based games, but this difference was not statistically significant.

Looking now to the spatial aspects of game playing, we did not find an effect of spatial perspective on either spatial immersion or character immersion, contrary to our prediction that an egocentric perspective would lead to higher levels of both types of immersion, as compared with an allocentric perspective. This might suggest that spatial perspective is not a defining factor of spatial immersion. Other factors are likely to contribute to spatial immersion, such as hyper-realistic visual graphics, emotional sound design, and detailed worldbuilding. Studies have shown that video game players do not report any differences in spatial immersion, on average, between a first- and third-person point of view, although individual players may have their own preferences for these perspectives (Gorisse et al., 2017; Waggoner, 2009).

Video Games as Mimesis

Overall, the current study explored the idea that video games are a mimetic narrative medium that has similarities to theatrical plays and films. Narratology and ludology scholars have long debated the status of video games as a traditional form of narrative (Koenitz, 2018). Ludologist Jesper Juul (1999) initially rejected the idea that video games are narratives because the player has control over how the events unfold. Many ludologists argue that the terminology used to describe narratives, such as "story" and "plot," are conceptually limiting and cannot be carried over to adequately analyze video games (Aarseth, 2012). Attempts from ludologists, such as Janet Murray (1997, 2004), to introduce narrative concepts to game studies have often been criticized (Koenitz, 2018).

However, we take a similar stance to Marie-Laure Ryan (2005), who asserts that video games present a mimetic mode of narrative, such as *The Sims*, where players can role-play as the characters that they create. At their core, narratives are simply a series of action events driven by an anthropomorphic agent, which is often referred to as a character (Fludernik, 1996; Ryan, 2007). As such, video games abide by the fundamental definition of narrative, while also introducing nuance to the definition due to uncertainties as to whether the agent in a video game is the player, the character, or some fusion of the two. Our study reveals that there can be psychological convergence between the player and the character in the form of immersion, where the player can temporarily adopt the emotional states and thought processes of the character. It is important to consider video game play as a form of role-playing and proto-acting because, in doing so, we can situate video games not only within the field of narrative studies, but within that of *theater studies* as well, while still acknowledging the interactive and participatory nature of video games.

Limitations

The present study is an exploratory investigation into whether video game play can be conceptualized as a type of proto-acting. By default, we propose that video game players are "acting" when playing a game because they are carrying out decisions and actions. To determine whether players are acting as either themselves or as their character, we propose character immersion as an indicator of proto-acting. While physical embodiment is a crucial aspect of proto-acting, we did not include any survey items that explicitly inquire about whether players embody the character/avatar that they are playing as. Future studies can videorecord game players as they play video games in a lab so that their behaviors—such as gestures, body sway, facial expressions, and verbal expressions—can be analyzed with regard to whether they mirror what is happening with the character. Players may engage

in proto-acting by having similar gestures and facial expressions to their character, and players may make exclamations that use first-person pronouns ("I") instead of second- or third-person pronouns when referring to the character.

Moreover, collecting real-time responses as players are playing games would be a more accurate measure of a player's psychological states, as opposed to the recall survey method that we have used in the current study, even though we only included games that were released in the past 15 years. To address the potential issue of recall bias by the participants, we posed a fact-checking knowledge question for each game before presenting the participants with the survey statements. This was meant to be a confirmation that participants are familiar with the game and still remember details from it. A follow-up study should be conducted to validate whether players feel that they are immersing with the main character while playing a character-based game in real time.

We also did not ask whether players identified with the character they are playing as. We piloted and interviewed 15 participants prior to the study (whose responses were not included in the final group of 45 participants) and found that statements regarding identification with a character were interpreted differently by respondents. Some pilot participants assumed that identifying with the character meant identifying aspects of themselves in the character, while other participants assumed that identifying with the character meant empathizing with the character, similar to the process of character immersion (Paravati et al., 2020). As such, we opted to omit statements that referenced "identification" to prevent any confounds with projection and character immersion. Further research is needed to differentiate identification from character immersion from projection.

Another limitation of the study is that each participant was only asked to provide responses for one game for each of the six game categories, as well as for *Pacman* as a control. We had two game lists, and so we collectively analyzed immersion and projection in two games per category. However, two games are still too few to provide strong validation for our proposed classification scheme, especially since video games within a given category can be quite diverse. It will be important to determine if the results obtained here generalize to other video games, and whether similar results would be obtained if more games were examined within each category.

Conclusion

A survey study was conducted to better understand the extent to which video game players implicitly role-play and proto-act when playing games with precontextualized characters. Since proto-acting cannot be directly measured, we measured self-reported character immersion as a marker of it and found that players do indeed report that they engage in greater character immersion in character-based games than in self-based or proto-character games. Projection, which is the opposite process to immersion, where the player projects herself onto a character, was found to be present in both character-based and self-based games, suggesting that projection is a baseline process that most players engage in, while character immersion is an additional process that occurs in the presence of a character. The study offers new insights into the narrative debate about video games by drawing parallels between video game play and acting. Video-game play is not just goal-driven, but can be character-driven as well. A player's ludic interests and goals interact with those of the character in the narrative, thereby driving forward the gameplay and a joint narrative between the player and the character.

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