
i-identity: Innominate Representation as Engaging Movement Game Element

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Abstract

Movement-based games typically make it clear whose movement representation belongs to which player. In contrast, we argue that concealing whose movement controls which representation can be a resource to facilitate engaging play experiences. We call this "innominate movement representation" and explore this opportunity through our game "i-identity", where participants have to guess which player makes everyone's controller light up based on this player's movements. We report on participants' play experiences of i-identity. With our work we hope to expand the range of digital movement games.

Author Keywords

Innominate movement representation; ambiguity; game design; engagement; digital play; entertainment

ACM Classification Keywords

H.5.2. Information interfaces and presentation: User Interfaces – Interaction Styles

Introduction

HCI designers often use unconventional approaches that turn interactive entertainment and interaction design on its head to enable the creation of new and unexpected play experiences, such as uncomfortable, intense and exertion interactions [2, 8, 9]. Strategies to facilitate such experiences include creating ambiguity

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Figure 1. Playing i-identity



Figure 2. Players' roles in i-identity

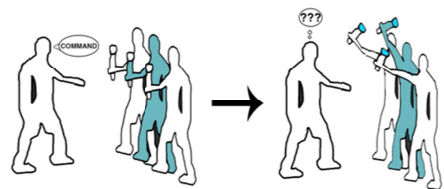


Figure 3. The interrogator commands, "Raise your arm!" The leader and his/her spies coordinate their movements so it is difficult for the interrogator to identify whose movement's lights up all controllers.

rather than offering clarity [6] and deliberately engineering discomfort to provoke physical effort [8]. Our work explores another unconventional strategy focused on digital play experiences: innominate movement representation. By this we mean a strategy in digital games where the game design deliberately conceals whose representation belongs to which player. Movement-based computer games generally utilize digital representations of players' movements, for example, most Nintendo Wii, Sony Move and Kinect games feature digital representations of players' movements on the screen, often achieved through avatars. We notice existing games often make the association between movement and avatar obvious, so that players know whose movements control which avatar. This is congruent with established game design and HCI principles that teach that feedback to player actions should be clear and non-confusing [3]. In contrast, we propose that game designers can deliberately make associations between movement and representation unclear – in particular selectively conceal – in order to utilize it as a game element for engaging play experiences. We created a game called i-identity to explore this opportunity. We conducted a study of play experiences with i-identity. We report on our design experience and findings to inform the future design of games that use innominate movement representation. With this work, the goal is to extend the range of digital movement games, furthering the associated experiences for players and ultimately the field of digital games.

Related Work

Digital games that explore the design space of concealing data associated with players is sparse yet valuable. In Fish 'n' Steps [7] for example, a

representation of a fish grows larger when 'fed' by a corresponding player's physical activity. The system innominates all players' movement data to hide whose represented fish belongs to which player. There are also online digital games where players try to accomplish goals without calling attention from others to their associated virtual avatars. For example, the game SpyParty [11] and the online multiplayer component of the game Assassin's Creed 3 [1] mixes player-controlled avatars with computer-controlled non-playable characters (NPC's), where the players conceal their associations to these representations. In addition, many non-digital role-playing games conceal the player's association to a particular fantasy role, such as Mafia and Werewolf. In summary, although interactive systems have supported concealed player associations to representations, there is a lack of knowledge of how games should be designed that conceal their representation associations to facilitate engaging experiences.

i-identity

We introduce a game that we designed, called i-identity [4, 5], as a practical example of innominate movement representation. i-identity is a collaborative movement-based game involving four players that benefits from being played in front of an audience (Figure 1). It is played with a set of Move controllers [10] and no screen. Players assume the role of an interrogator or one of three spies (Figure 2). The three spies each hold a Move controller. One Move controller is randomly selected by the game to represent the spies' leader. The leader's movements illuminate all three of the spies' controllers, while the spies' movements are ignored. Vibration feedback is discretely sent to the leader's controller when moved to let him/her know



Figures 4, 5. People had an enjoyable and engaging experience.



Figures 6, 7. People playing the role of spy collaborated with other spies.

his/her role in the game. The leader's role is only known amongst the spies themselves. The interrogator, whose goal is to identify the spies' leader, conducts or asks the spies to perform movements. For example, we have observed commands such as asking the group to jump up and down, they could be asked to "pretend they had just been shot", or to play air guitar. However, the interrogator can only address the spies together, as a group (so the interrogator cannot say "only the person in the middle should jump"). While the leader moves through acting out a command, everyone's light turns on. When the leader is stationary the lights go out. The spies copy their movements in an attempt to innominate the representation so the interrogator cannot work out whose movement controls the light (Figure 3). The game continues until the interrogator believes she/he knows the identity of the spies' leader. At this stage, the interrogator points towards the leader. The chosen leader waves their controller; if all the spies' controllers illuminate, the interrogator wins and the spies and interrogator switch roles, otherwise the leader and the spies win. Players often agreed to impose a limit upon the amount of commands that could be asked before requiring the interrogator to select a leader.

Alternative setup: Two teams of spies

We have also implemented a variation of the system to better accommodate more players by having two teams of three spies, as opposed to one team of spies and an interrogator. This was in response to players' feedback during our study. Teams take turns to give movement commands to the other team.

Experiencing i-identity

i-identity has been shown at 5 events where a total of 50 participants have taken part. 12 of these

participants were interviewed after playing. We also took notes of our observations and recorded video footage of play sessions and interviews. By analyzing our design as well as observations of gameplay and feedback from players, we gained insights on the role of innominate movement representation on players' experiences. We now report on our findings.

i-identity is a compelling game experience

Feedback from these events suggests that players found the experience to be an enjoyable and engaging experience. Participants expressed their enjoyment while playing and our observations of body language further support the occurrence of a sense of enjoyment from the game, with smiles and intrigued glances often displayed (Figures 1, 4, 5).

Innominate gameplay can stimulate communication amongst players

Participants on both sides communicated with each other, aiding each other by giving advice, encouragement or suggestions. The two groups of players (spies & leader and interrogator & audience) would often separate to secretly discuss strategies amongst themselves (Figures 6, 8). Interestingly, people deliberately concealed these discussions from the other side, despite not being required to do so.

Ambiguity of the innominate gameplay can be engaging

Participants appreciated the sense of ambiguity that emerged from the innominate gameplay. A tactic often used by the leader was to try to deceive the interrogator and audience to make them believe they were not the leader (Figure 7). Players enjoyed how the spies often used body language to heighten the ambiguity of their relationship to the representation.



Figures 8, 9. People playing the role of interrogator used people from the audience to help them.



Figures 10, 11. People enjoyed the physical challenge resulting from the innominate gameplay.

Trying to conceal movement representation can lead to engaging performances

Participants enjoyed the physical challenge of concealing movement representation, which led to enjoyment with the associated physical performances. Participants playing the role of spy enjoyed the sense of connection they seemed to share with other people's movements. We noticed spectators would often laugh when people performed silly or hilarious movements, such as hopping on one leg or performing dance moves (Figure 10). These reactions suggest that enjoyment can emerge from people's engagement with concealed movement representation, both when performing and observing the performance.

Participants enjoyed using different strategies and play styles to reveal the association of representation

Participants enjoyed using different strategies and play styles to reveal the association of representation. We observed players experimenting with a range of tactics, such as deciding to have a spy look more suspicious than the other spies (Figures 6, 7), or positioning spies so it was difficult for them to see each other (Figure 11). Participants found that confusing the spies with multiple commands at once or provoking accidental movements that could not be controlled, for example getting them to laugh, could help get someone to move out of sync, resulting in even more laughter.

Conclusion

We introduced innominate movement representation as an unconventional form of digital play to facilitate engaging experiences. We implemented i-identity, a game using innominate representation as a novel game element. We reported on our experiences with the game, which suggest that innominate movement representation can facilitate an engaging play

experience. Our work contributes to game design research and practice by providing insights into how innominate representation can be leveraged in future designs of movement-based games.

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