

Playing with Emotions: Sentiment Design for Public Space

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ABSTRACT

This design research explored ways to support emotional expression in interactive games played in a public, social setting. Affective gaming has incorporated emotional assessment to tailor feedback during gameplay, but as a result, distills complex emotional states into simple inputs. Our research focused not on measuring affect but on designing games to evoke emotional expression and sharing of personal experiences. This work centered on games in public spaces as a particularly rich area to explore how people's emotions might influence each other. We present the design and initial play-testing results of four games that draw on a player's idiosyncratic experience and feelings as part of the game. These designs were based on internal paper prototyping sessions, naturalistic observation of the testing space and design and enactment sessions with researchers as participants and designers. Our design sessions indicate that image-based games are a rich element for these types of games, and the importance of ambiguity and disagreement amongst players to promote sharing of personal stories. Other design principles that emerged include affordances for short interactions, individual or multiple players, and forms of "cheating" as game play.

Author Keywords

affective gaming, public space

ACM Classification Keywords

D.2.2. Design Tools and Techniques; H.5.2. User Interfaces

INTRODUCTION

Affective gaming is the application of affective computing, "computing that relates to, arises from, or influences emotions," [3] to games. Researchers have explored providing responsive game feedback based on physiological inputs where computer characters and the environment can respond to players' emotions. These techniques allow for dynamic games, but also require the simplification of

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complex emotional states through the synthesis of emotion data [2]. As opposed to acquiring users' emotional states, Sengers argues that affective computing should provide opportunities for users to experience, interpret, and reflect on their emotions. This approach acknowledges "the human emotional experience is to some degree fundamentally unknowable" [4, p. 348]. We argue for a similar approach to affective gaming; since games naturally elicit emotional reactions, the goal was to allow players to embrace this complexity of emotional expression rather than simplify it.

Instead of *measuring* affect, our intent was to illuminate how to *design* for affective expression in game design. The focus was on the design of sentiment games in public spaces as a particularly rich area to exploration. While there is evidence that players react emotionally to games in public spaces [1], little work has considered how to evoke emotional expression in public space games. As opposed to games played in isolation, the inherent sociality in public spaces presents an opportunity for emotional communication among players/strangers.

DESIGN

To ground our design, we began with ethnographic observations of individual behavior in two public café spaces. These observations provided requirements for the games that were designed following an iterative process that included multiple sessions of paper prototyping within the research team. Once a game had been brainstormed and tested internally, the prototype was brought to a group of four or five students and researchers and observed in an informal setting. From this, we developed four game concepts. We further refined our idea based on an enactment session where we adopted roles of strangers and acted out potential scenarios.

Escalating Emotions

This is a publicly projected game in the genre of tile-matching games like Bejeweled and Candy Crush. Players are each presented with a different emotion word and try to gain points for their word before their opponent does. Players gain points by correctly matching images that have been pre-labeled with the same sentiment. Images could be pulled from Instagram and Twitter with a certain emotion hashtag. Once one player reaches a certain number of points from matches, new sentiments and images appear. Players win once they fill up their emotion meter.

Make a Face

Two players are seated on either side of a partition with a screen and camera on both sides. For each round of this game, players have 10 seconds to make as many facial expressions that represent their reaction to a picture. If players make the same facial expression then they advance to the next image. The game ends once players fail to match facial expressions for an image within the allotted time.

Clairsentience

Players compete to see who can correctly identify an image by using as few sentiment tags as possible. In the first part of the game, players view images and add multiple emotion tags to them. These get added to a list of other tags from previous players, and the aggregated data is used in the second part of the game. For the second part, a grid of 16 images is presented on a large touchscreen with one emotion tag associated with one of the 16 images revealed initially. An additional emotion tag for the same image is revealed every 10 seconds, giving more hints as to the correct image. Players receive more points for correctly guessing the image that has been tagged with fewer hints.

Mood Match

People try to match images displayed on a wall with emotion tags. One person picks a photo that was projected on a wall that best fit a given sentiment (e.g. happy) and then another person is given the picture and has to pick an adjective from a list to see if they match. Points are awarded for correct matches. The design of this game was modified during the design process where people in two different locations could try to match the same sentiment to a given image. We believed this design would minimize hesitancy to interact with a system someone else was using while still creating the opportunity for a shared experience.

DISCUSSION

Through our paper prototyping sessions, it was revealed that failure in the game, which normally is a singularly negative experience, actually was an interesting part of the social interaction. Instead of being a point of frustration, disagreements in emotion called for an explanation, invariably leading to disclosure of a personal story. In one session of *Clairsentience*, one player rated a picture of a stuffed dinosaur with a negative emotion whereas the other rated it with a positive emotion, eliciting humor between participants. In another session, there was some consensus amongst players who tagged a picture of donuts with words like "Happy," but there were also tags like "Hate" that stimulated discussion around individual preferences.

When designing for public spaces, we realized the importance of allowing for the game to be played in a short amount of time. As these are places when people may not intend on lingering, the games were designed to encourage

people to play through brief interactions. Similarly, because of this short duration of attention, it was important that the visual display was inviting of interactivity and that the game was intuitive to navigate without needing instructions.

Since the design was for public spaces, we wanted to allow for a single-player mode in all of our designs. In *Make A Face*, for example, single-player mode could compare people's facial expressions with those people who had played before, creating an asynchronous social interaction. Given that many of the people coming to the cafe only stayed in the space for the time that it took them to get their drink, it was a conscious design decision to support short interactions that could also be lengthened if people had more time.

Because we were designing games, we wanted to allow for playful uses of the system, including cheating. For example, using live images in *Escalating Emotions* would potentially elicit cheating behavior where people may intentionally tag images with inappropriate hashtags for their benefit in the game. Instead of designing to make this behavior impossible, we decided to allow it to occur since it could be a point of emotional discussion.

CONCLUSION AND FUTURE WORK

In this paper, we proposed a novel method for affective gaming that integrates emotion into game design to allow for a more nuanced interpretation of emotional expressions. We drew on players' experiences and sentiments to create games that used ambiguity and disagreement to create connections between players through sharing of stories for their choices. Initial play-testing observations provided support for the expectation that ambiguous, controversial images would evoke emotional communication. The games should also be fast interactions, able to be played single- or multi-player, and allow for cheating behavior. Future work will analyze the results of ongoing installations and explore whether players' affective labels could be used to annotate existing image databases.

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