Promoting Player Empathy for People Living with Poverty

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Abstract

Transformational games, i.e. games that aim to transform
their players for the better, are becoming increasingly pop-
ular ways to help people engage with difficult topics. In our
mobile game, *BROKE: The Game* (based on an original
board game), we strive to transform the way our players
view people who live with the condition of poverty and have
more empathy for them. In this paper we discuss how we
adapted a board game into a mobile game and how we de-
signed empathy promoting mechanics into the experience
to help our players better understand what living in poverty
is like.

Author Keywords

Transformational Games; Poverty; Narrative; Mobile

CCS Concepts

•**Human-centered computing** → *User studies; Usability
testing; HCI theory, concepts and models; User centered
design;* Touch screens;

Introduction

Poverty is a current and persistent problem in the United
States. According to the 2017 Census, 39.7 million Amer-
icans live below the poverty line, 15.5 million of whom are
children - one of every eight Americans [4]. Not only is
poverty prevalent, it is difficult to escape. Given growing

wealth and income inequality, experts estimate that it takes nearly 20 years of nothing going wrong for someone to escape poverty in the United States [12].

One challenge in addressing poverty is mobilizing support for policy change. Just world theory, the belief that life is at some level fair, leads many people to believe that those living in poverty deserve to be so [7]. Additionally, the people with the most political and financial power to change policies for the better typically do not know what it feels like to experience poverty. This in turn affects the kinds of policies they promote.

BROKE: The Game seeks to help people who are not currently living with the condition of poverty (a term we choose to illuminate how poverty is situational, not a character flaw) become more empathetic to those who do. Our work is based on *The Poverty Spiral* a board game by Dana Gold [6], which has been extensively playtested in the field. *BROKE* simulates decision-making in financially and emotionally stressful situations. In adapting her work for a broader audience, we mobilize both reactive and cognitive empathy [1].

In this paper, we explore the empathy-related design challenges of creating a transformational game in this area [3]. We hope that in the long term, our work will help higher-resource Americans mobilize effective support for their 39.7 million peers living with poverty.

Related Work

In defining our design, we looked at games that explore the experience of living in poverty. *Spent* [9] is one of the games that is focused on poverty and homelessness where the players need to make difficult decisions to live for one month on $1000, by choosing between two equally tough options. While *Spent* focuses on the individual perspective, we wanted a design that simulates the systemic nature of poverty. Poverty stems from multiple causes that can depend on different factors. *BROKE* lets the players experience the complexity of poverty in action.

To help players understand the experience of decision-making in difficult situations, we looked at games that ask players to survive with limited resources. One of the games with a similar experience of limited resources and survival is *This War of Mine* [2] where the characters have to make difficult decisions to survive everyday dangers using the limited tools and resources the character gathers, controlled by the player. *Spent* also provides limited financial capability to the player to survive through the experience. From these games, we drew insight about how to help players be frustrated with the *situation* rather than with the *character*.

Finally, we looked at a range of techniques for putting the player into the role of a character. We were particularly inspired by phone simulation games, such as *Unrd* [8], in which the player's phone "becomes" the phone of the character as part of the game and turns into a suspense-filled story. Similarly *Emily is Away Too* [11] uses an interface of a chat client in old Windows XP design to tell the story of the player's relationship with a girl, Emily. *Lifeline* [5] is another game with an app interface where the player guides the character through a text conversation to survive an unknown place after their spaceship has crashed. We also looked at recent work by Roussou et al [10] to come up with effective chat conversations to emotionally connect the player with the character. We observed that while these games used the metaphor of the phone to connect players to the character, restricting the player to artificial interactions (e.g. binary choices) did not break that connection. We therefore explored this approach in our design to connect the player with the experience of the character.

Game Description

BROKE is a mobile transformational game that helps players understand poverty. It builds on the board game *The Poverty Spiral*, a multiplayer simulation of living in the condition of poverty and making tough decisions with limited resources [6]. *BROKE* transforms this multiplayer, face-to-face experience into a single player digital game.

BROKE is a virtual phone simulation game (see Figure 1). The player takes on the role of a character living with the condition of poverty. On that character's virtual phone home screen interface, players can interact with five different apps (Figure 2). These apps collectively convey information to the player about what is happening in the character's life, and helps the player understand what resources the character has available. The player can then respond to the life events experienced by the character and see the consequences play out.

One core message of the game is that poverty is not experienced the same way by everyone. The player can therefore choose one of three characters: a new college graduate, a person living in rural poverty, and a person who is currently homeless. (Three additional characters - the senior citizen, the single parent, and the illegal immigrant - are under development.)

The player learns about the character's life experience by interacting with three apps on their simulated phone: Text, Email, and News. In the Text app, players receive text messages from the character's close friends and family. Periodically, they are offered two options that they can select from to reply to the messages. The Email app works similarly, but focuses on professional communication (e.g. arranging job interviews). Finally, the News app provides information to the player about systemic changes that may or may not
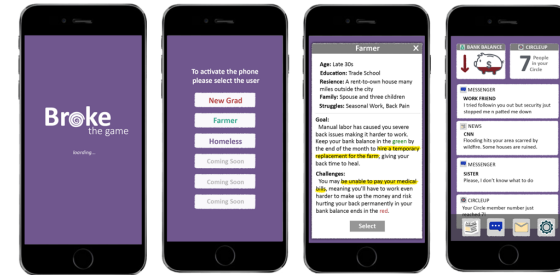

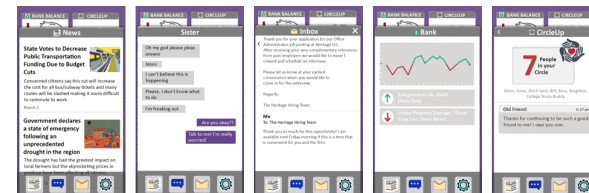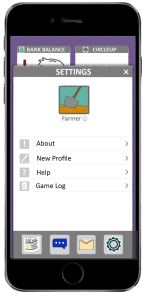**Figure 1:** *BROKE: The Game*

Figure 2: In-game apps in BROKE: The Game

affect their character, such as a price hike on public transit. The player does not interact with the News notifications.

The player's choices in the Text and Email apps affect their financial and social capital. In the Bank app, players can see their current financial state, as well as understand how their financial situation has changed over time. Our fictional app, CircleUp, provides similar information about the player's social capital. The app contains a list of people who are close to the character, typically close friends and family. Just as the player can lose and gain money in the bank, players can lose and gain supporters in their intimate circle.

Figure 3: Settings App in BROKE: The Game

Figure 4: Board Game to Digital Transformation Process

Finally, the game includes a Settings app (Figure 3), with support functions such as help with the game, restarting, or switching to a different character.

Adapting the Board Game

In our design, we were inspired by the board game *The Poverty Spiral*. However, we felt that creating a single-player mobile game would make it easier for the game to reach a broad audience. Moving from multi-player to single-player, and from analog to digital, was a substantial design challenge. We wanted to respect the changes in the medium, not just copy the board game onto a digital format. At the same time, we wanted to amplify Gold's expertise and design insights.

To walk this line, we deconstructed the original board game. We created post-it notes with every feature of the game (Figure 4), being as granular as possible in how we separated the features. We then used card-sort techniques to identify what features we should retain in our design. We evaluated the features based on how they align with the core transformational goal of the game and whether the feature will work as expected on the digital platform; if not how can we modify it. We then incorporated the features we wanted to retain into our design vision for the game.

Emotional Empathy: Managing Frustration

One core element of our design vision was to create *emotional empathy* for the character. This type of empathy occurs when players are met with visceral or deeply moving situations that they can feel themselves being in [1].

In our case, we wanted people to understand and *feel* the stress of balancing dwindling resources, familiar relationships, and personal goals. We sought to do this by limiting the number of options players had in response to the diffi-

cult situations their character faced. Not only did this create stress, limiting the player's options is domain-realistic. People living with the condition of poverty often have constrained choices available.

In our original design, offering players binary choices in response to stressful situations did produce frustration, but it was not the right kind of frustration. Players identified too strongly with the character they played. Instead of seeing how the situation constrained the character's choices, they related the in-game situation to their real life. Then they became frustrated that their character didn't have the same options that they themselves had in the real world.

To address this problem, we needed to refocus the player's frustration from the *character* to the *situation*. We accomplished this through psychological distancing techniques. For example, we modified the language of the character to be more individualized and included some inside jokes and references between the character and NPC. This helped players understand that they are playing a character who is different from themselves. Additionally, we allowed the *characters* to express frustration with their lack of choices. For example, NPCs would sometimes comment that they wished there were better choices available, but that they lacked the resources to pursue other options. After deploying these changes, players still felt frustrated, but more productively so. They spent time thinking about how to react given the constraints placed on their character, rather than trying to come up with a better solution that they themselves would choose.

Cognitive Empathy: Communicating Domain Truth

Emotional empathy is not the only type of empathy that can mobilize change. *Cognitive* empathy is based on conscious reasoning and the choice to connect with others [1]. Instead

of feeling oneself in a specific situation, cognitive empathy asks us to recognize that difficult situations can happen to anyone.

To engage the player's cognitive empathy, we needed to help them understand that the content of the game was accurate. First, we verified this for ourselves internally by basing all of the situations in the game on the scenarios given to us by the original designer: a subject matter expert. She spent decades collecting these stories and all situations are based on real experiences that real people have faced. Each conversation and notification was approved by this expert. Our team also interviewed six individuals who live or had lived with the condition of poverty. These real accounts helped us portray the most realistic and authentic version of the game we could, while holding us accountable to the stories and people we want to uplift with this game.

One way we communicated this validity to our players was through accurate terminology (e.g. "SNAP benefits" aka food stamps) and slang (e.g. "flying a sign", "hosting a habit", etc.). This helped ground each conversation more fully in the reality of the situation and the real people the situation was based on. The definition of each of these phrases was illuminated by the conversation's context.

We also communicated the validity of our work by consistently linking outwards to additional resources that players could use to engage with our content more fully. This included a 15-minute documentary we created about the six people we interviewed as well as discussion questions to reference after playing the game. These discussion questions were meant to encourage players to think critically about their play experience and relate it to the real world. Finally, we included resources to articles and studies concerning the issue of poverty in the United States.

Figure 5: "Something I Learned About Poverty Is...": Anonymous player responses to this prompt after playing BROKE: The Game.

Player Responses

To understand the impact of our game on players, we iteratively playtested throughout our 15-week development period. However, the true test of our work would come when players encountered the release version of our game. Before making the game publicly available, we hosted an open house where strangers, unfamiliar with our work, could play the final version. This open house served both as a summation of our work, and would give us the chance to make any final tweaks necessary.

As a simple way to collect data on the impact of our game, we asked players to anonymously write down something they learned about poverty from playing the game on a sticky note. They then placed the sticky note on a poster board in the space (Figure 5). A total of 11 notes were collected from our 21 players.

We found that players understood the tension that arises when the characters have few choices. For example, one player wrote that "balancing money and your beliefs is hard." This response echoes how people in poverty may be forced to forgo their pride or certain values in order to provide for themselves and/or their families. We also found that players rejected just-world theory as an explanation for the in-game events. One player wrote, "people are not lazy, it's the circumstances which are different." This player seems to have had their perception of the just-world theory challenged, just as we were hoping. Finally, one player wrote that something they learned about poverty was that "it needs to be discussed." This is a very promising reaction as *BROKE* is not meant to portray the issues surrounding poverty as black and white. They are full of gray areas and they *do* need to be discussed before any lasting change can be enacted.

Conclusion

BROKE: The Game is a mobile adaptation of an educational board game that aims to help players empathize with people who live with the condition of poverty. The game accomplishes this by having players make decisions with limited resources and competing priorities. We utilized a range of design techniques to support both cognitive and emotional empathy in our players, in order to help them form stronger and more lasting connections with the situations they encountered. We found that our blind playtesters, i.e., people who had no familiarity with the game or the domain, learned things about poverty that challenged the just-world hypothesis and broadened their own views of the harsh realities of poverty in the United States.

BROKE is currently available for free download on all iOS devices through App Store and is in development for Android devices via Play Store. In the future, we would like to explore giving even more weight to players' choices in a larger, more dynamic story, rather than focusing simply on changes to the character's bank account and social support network. We believe that a player-defined narrative will help people feel even more involved in the characters' lives and, therefore, help them feel more empathy for the people each character represents. Additionally, given that one of our goals is to accurately portray poverty in the United States, we want to add characters and situations which better reflect the ever-changing policies and events affecting approximately 40 million Americans living in poverty. Finally, we believe that these design techniques can be used in other domains (e.g. environmental conservation, equal rights movements, etc.) where changing public perception is needed.

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