

Cupid's Arrows:

Ensuring Responsible Use of Contemporary Online Dating Apps

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Developing a “Game for Social Change”

In his presentation, Sparks (2023) introduced *An/Other*, a game he designed that offers a profound experience where players navigate a day in the life of a black man, confronting the isolation of white gazes. Sparks (2023) argued that a game's primary goal should not necessarily be fun but engagement. *An/Other* exemplifies this by fostering empathy toward the black community, often subjected to mistreatment. It encourages players to introspectively examine their perceptions of people from different ethnic backgrounds. Our group found profound inspiration in Sparks' work, particularly intrigued by his probing question: “Can games and interactive experiences become catalysts for social change (Sparks, 2023)?” Initially, the concept of creating a “Game for Social Change: seemed daunting. However, drawing from Sparks' (2023) insights, we recognized that all games inherently possess the potential to influence social change, be it positive or negative. Motivated by this understanding, we embarked on developing a game aimed at fostering positive social transformation, aligning with the ethos Sparks (2023) passionately advocates.

While brainstorming for a social issue to address in our game, our team member Kevin brought to our attention a compelling quantitative research article on online dating apps. The study, conducted by Carpenter and McEwan (2016), delved into the user demographics of micro-dating apps, their motivations for using these platforms, and the safety measures they employ before physically meeting someone they encountered online. This insightful research highlighted that the predominant reason people use dating apps is for entertainment purposes, rather than for serious dating or seeking sexual partners (Carpenter & McEwan, 2016). Additionally, it was found that more frequent users of these apps often possess personality traits that prefer multiple

sexual partners (Carpenter & McEwan, 2016). The study also shed light on significant risks associated with online dating apps. One concern is their potential role in facilitating easier access to casual sex, which could inadvertently contribute to the spread of sexually transmitted diseases (Carpenter & McEwan, 2016). Another critical issue is the safety risks posed when individuals meet in person without adequate precautions (Carpenter & McEwan, 2016). These findings from Carpenter and McEwan (2016) were eye-opening and led our group to conceptualize a game designed to heighten awareness about the various limitations and dangers inherent in the use of online dating apps. Our goal was to create an engaging, informative experience that would prompt players to think critically about the impacts of online dating use.

In his presentation, Sparks (2023) also emphasized the crucial role of responsible research in the development of games aimed at social change. He highlighted that such games, by their very nature, convey important messages to the audience, necessitating accuracy and thoroughness in research to avoid misinformation (Sparks, 2023). Following this guidance, our team diligently sought to incorporate a blend of primary and secondary resources to achieve a comprehensive understanding of online dating apps. For primary sources, we conducted informal interviews with friends who have experience with online dating apps. These conversations provided first-hand insights into the negative experiences and inherent weaknesses of these apps, such as encountering undesirable behaviors. In parallel, we delved into scholarly peer-reviewed articles for secondary sources. These articles shed light on the broader threats and challenges associated with online dating app usage, including issues of fraud, intrusive behaviors (such as people sending impolite messages and regarding these messages as humorous), risks associated with casual sex (including potentials of sex without condom which may consequently spread sexually transmitted diseases), and the transient nature of relationships fostered by these fast-

paced, appearance-based platforms (Carpenter & McEwan, 2016; Conner, 2023; Gillett, 2018; Zhou, 2023). Synthesizing these findings from both primary and secondary sources, we identified the major dangers and limitations present in online dating apps. Our game was meticulously crafted to enhance player awareness of critical issues such as the prevalence of intrusive messages, the risks of online fraud, the importance of safe sexual practices, and the ephemeral nature of relationships in the digital dating age.

In structuring the development of our game, we took inspiration from the game developer model presented by Pidsadny (2023) during his lecture on game-level design. According to this model, there are three principal categories of game development roles: game designer, game art designer, and game programmer. Each role plays a distinct and crucial part in the creation of a game. Adrian, who specializes in computer science, naturally assumed the role of the game programmer in our team. His responsibilities extended beyond just programming; given his background in audio production, Adrian also took charge of creating all the game's audio elements. This dual role allowed for a cohesive integration of sound and functionality in our game. Nathan, enrolled in the art and art history specialist program and possessing a strong skill set in digital illustration, was the perfect fit for the role of game art designer. He was responsible for bringing the visual aspects of our game to life, illustrating all the characters, and designing the user interface elements. His artistic vision was instrumental in defining the game's aesthetic. The game design was collaboratively handled by Baitian and Xiaoyi. Their task was to weave the narrative of the game, ensuring that the story was engaging and meaningful. They also developed preliminary game models, providing Adrian and Nathan with a solid foundation to build upon in the actual game development process. This collaborative effort ensured that the narrative, art,

and programming components of our game were seamlessly integrated, creating a cohesive and immersive gaming experience.

Gender and Race Inclusivity

In our modern, diverse society, which has progressively moved beyond the constraints of patriarchy and binary gender perspectives, the imperative for gender inclusivity has become a pivotal aspect of game design. This was highlighted in the presentation *Accidental Sexism in Game Design*, by Kerzner (2023). Kerzner brought attention to the concept of “Accidental Sexism,” where even game content created with the best intentions can inadvertently perpetuate sexist notions. Kerzner’s presentation included an examination of various games that, despite their quality and positive aspects, faced criticism for sexism. A notable example she discussed was *Gabriel Knight: Sins of the Father* (1993). This game featured a richly diverse cast, including a significant, well-rounded Asian female character. Despite these efforts, it was still subjected to accusations of racism and sexism by some critics. This led us to ponder a critical question: How can our game achieve true gender inclusivity, especially when even well-researched and excellently crafted games are sometimes perceived as lacking in this regard? Our approach to this challenge was to step away from the traditional binary gender framework entirely. We aimed to create a game environment where gender inclusivity is not just an afterthought but a fundamental aspect of the game’s design and narrative. This decision to eschew the binary setting of gender was a conscious move towards embracing a broader and more inclusive spectrum of gender identities, reflecting the diverse nature of our society. Through this approach, we hope to contribute to a more inclusive gaming world, where players of all gender identities feel represented and respected.

In her presentation, Kerzner (2023) highlighted a striking example of gender bias in retail: malls categorizing “toys for girls” separately from “toys for kids,” perpetuating traditional male and female stereotypes. This segregation overlooks the complexity of gender identity and the diverse interests that transcend conventional gender norms. Our understanding of gender inclusivity in game design was further enriched by Cassel’s (1998) book chapter, which emphasized the importance of moving beyond stereotypes, allowing children to co-design games and stories that reflect a broader, more inclusive range of girlhoods and boyhoods. Informed by Cassel’s insights, we crafted our game to let players be the main character, rather than playing as another person. We initiated the game by asking players to input their names, enabling them to directly assume the role of the protagonist. This first-person narrative approach eliminated the need for a predefined avatar, allowing players’ self-identified gender to be seamlessly integrated into the game experience, thus avoiding gender-based assumptions or biases. We meticulously designed our three main characters to be gender-ambiguous, blending traits typically associated with both males and females. The characters—Logan, Jacky, and Quinn—were named after thorough research to ensure their names are gender-neutral (Abner, 2023; Blanding, n.d.; “Logan (given Name),” 2023), aligning with their non-specific gender identities. This design choice opens a space for players to project their interpretations onto the characters, fostering a sense of fluidity and inclusivity. Moreover, to reinforce this inclusive approach, we strategically eliminated the use of gender-specific pronouns in the game. Instead of phrases like “Message her/him,” we opted for character-specific directives such as “Message Logan.” Similarly, a line like “You are surprised but agree to her/his/their plan” was rephrased as “You are surprised but agree to the plan.” This linguistic strategy ensures that the game’s narrative remains inclusive

and adaptable to any player, regardless of their gender identity, by focusing on the characters' actions and decisions rather than their gender.

Recognizing the significance of racial inclusivity alongside gender inclusivity, our group delved into research to better understand the dynamics of race within the realm of online dating apps. Our findings echoed a concerning trend: there exists a clear favor of Caucasians over other races, with people of color often facing marginalization on these platforms (Conner, 2023; Ranzini & Rosenbaum, 2020). To counteract this bias and ensure our game was racially inclusive, we decided to incorporate characters of diverse skin tones. In our initial character lineup, we introduced Jacky with the lightest skin tone, Quinn with the darkest, and Logan with a medium skin tone, situated between Jacky and Logan. This range was intended to represent a spectrum of racial identities, promoting inclusivity and representation. We initially had these three characters each with a distinct skin tone to emphasize inclusivity, however, during the development process, we encountered an unforeseen issue. Upon integrating these characters into our game, we realized that Quinn, the character depicted as the antagonist involved in online fraud, had the darkest skin tone. This representation inadvertently risked perpetuating racial stereotypes and could be interpreted as aligning the game with racist undertones, an outcome we wanted to avoid at all costs. To rectify this, we made a conscious decision to swap the skin tones of Quinn and Logan. This adjustment was crucial in ensuring that the character with the darkest skin tone was not singularly portrayed as the villain, thereby avoiding the reinforcement of harmful racial stereotypes. This change was part of our broader commitment to creating a game environment that is not only inclusive but also sensitive to the nuances of racial representation. It was a step towards ensuring that our game does not inadvertently contribute to the marginalization of any racial group but instead celebrates diversity in all its forms.

Narrative Game Design

In developing our game within the restraints of Twine, we focused on crafting a narrative-driven experience, where the player's decisions lead to diverging paths and outcomes. Our objective was to raise player awareness about pertinent issues in the digital dating world, including the prevalence of intrusive messages, the dangers of online fraud, the importance of practicing safe sex, and the ephemeral nature of digital relationships. Our narrative begins with the protagonist experiencing loneliness, which leads them to download an online dating app named *Cupid's Arrows*. Apparently, this name was inspired by the classical mythological god of affection and desire. Cupid carries two different arrows, the gold one makes people fall in love and the lead makes people fall out of love ("Cupid," 2023). This resonates with our game's endings: in some, the protagonist found love, while in others did not; also, it relates to the inevitable pattern of people falling in love and then falling out of love, implying the ephemerality of online dating app relationships. Our game inherited the name of this online dating app: *Cupid's Arrows*, since the app serves as the most important thread throughout our game. The story unfolds through interactions between the protagonist and three characters they meet on the app: Logan, Jacky, and Quinn. Our approach to storytelling aimed to weave these critical issues seamlessly into the plot, making them integral to the game's narrative. To address the issue of intrusive messages, common yet often overlooked in online dating apps, we designed interactions with the first two characters, Logan and Jacky. Unlike real-world scenarios where disrespectful or overbearing behavior is sometimes even humorously portrayed in social media, we portray intrusive behaviors in a more serious way, highlighting these intrusive messages will only cause a negative impression on others (Gillett, 2018). In our game, players are placed in situations where they must decide the nature of the messages they send. Positive choices, which

means demonstrating respect and patience in interaction, result in receiving positive responses from the characters. Conversely, negative choices, such as sending disrespectful messages or impatiently pressing for a quick meetup, result in more distant or negative responses from the characters. For instance, choosing to “Respectfully await a response” when interacting with Jacky leads to a positive and engaging reply, whereas the “Impatiently press for a quick meetup” option, especially without an apology, receives a more distant response.

The meaning of these messages was enhanced by adopting different punctuation. The inclusion of periods in contemporary online messages among younger people may convey abruptness, so for positive responses, no period was applied, whereas negative responses would have periods throughout the text (Houghton et al., 2018). This linguistic approach better distinguishes negative responses from positive responses, making players clearly understand which act is not suggested when using online dating apps. Upholding Pidsadny’s (2023) emphasis on the importance of tutorials in the game, the interactions with Logan was actually a tutorial, in which only bad decisions can be made, showing how these rude messages trigger negative responses from Logan. After being blocked by Logan, we integrated a moment of introspection that explicitly highlighted the importance of respectful behavior in online dating. For the players who will not learn from mistakes, being impatient or impolite to the three characters throughout the game, we made a humorous ending that conveys the player never found love because the player never learned from mistakes. Our design not only mirrors the real-life dynamics of online dating apps but also educates players on what constitutes intrusive behavior. By directly engaging players in these scenarios, our game encourages them to reflect on their conduct in online dating contexts, fostering a greater understanding of respectful

communication and behavior. This interactive and reflective approach aims to not only entertain but also inform and guide players in navigating the complex world of online dating responsibly.

In our game, the story involving Logan and Jacky was designed to guide players in practicing appropriate behaviors on online dating apps. The part featuring Quinn was aimed at heightening awareness about the risks of online fraud, a prevalent issue in the digital dating realm. We depicted Quinn as a cybercriminal representative, developing a narrative that mirrors the tactics often used by cybercriminals who create appealing but fake profiles to exploit victims (Zhou, 2023). Quinn's storyline was a cautionary tale. Quinn traps the player with the pretense of an inviting scenario—suggesting a meeting at his/her/their place while the parents are away. This imitates a seductive strategy that may be employed by online scammers. Depending on the player's choices, leading to different results: If the player agrees to plan a date and invite Quinn over, the player ends up having their wallet stolen Quinn. If the player waits for Quinn to plan the date, the player will be knocked out and robbed by Quinn. However, if the player decides against meeting Quinn in person, they eventually know through mass media that Quinn is indeed a criminal. To further underscore the dangers associated with online dating app fraud, we introduced a “supervillain” ending. In this scenario, the player, influenced by Quinn's actions, becomes involved in online fraud. While initially, the income was beneficial, this path led to the player's downfall, resulting in under arrest with a decade-long jail sentence. This dramatic conclusion serves two purposes: it highlights the severe consequences of falling victim to online fraud and acts as a warning against engaging in such criminal activities. Through these narrative choices, our game endeavors to educate players not only about the potential threats of online dating apps but also about the moral and legal implications of participating in fraudulent

activities. This approach ensures that the game is not only engaging but also serves as a valuable tool for imparting crucial life lessons about safety and ethics in the digital world.

One of the endings specifically addresses the themes of safe sex practices and the fleeting nature of relationships formed through fast-paced, appearance-centric online dating apps. This particular narrative is triggered if the player consistently uses the app to seek dates. This ending is a scenario where the player, despite dating multiple people from the app, finds that none of these connections can lead to a meaningful, lasting relationship. This outcome symbolizes the ephemeral nature of online relationships, where connections are often formed and dissolved rapidly, moving quickly from one to the next. Many online dating apps, which focus primarily on physical appearance, tend to overlook the deeper aspects of personality and character (Carpenter & McEwan, 2016). The emphasis on physical attractiveness and the ease of making quick connections can be linked to a heightened focus on sexual interests (Carpenter & McEwan, 2016). In the context of our game, this aspect is explored through the protagonist's experience. The narrative suggests that the prevalence of sexual interests on dating apps could lead to an increased risk of sexually transmitted diseases (STDs), an important issue we wanted to highlight. In the previous ending, as a direct consequence of engaging in multiple sexual relationships facilitated by *Cupid's Arrows*, the protagonist faces a bitter reality, being diagnosed with several STDs, a situation that brings significant suffering and consequences. This ending serves as a reminder of the risks associated with unprotected sex and the importance of safe sex practices, especially in the context of casual relationships formed through online dating platforms. By incorporating this outcome into our game, we aim to educate players on the potential risks associated with such behaviors and the importance of being cautious and responsible in their romantic and sexual encounters when using online dating apps.

We aimed to highlight the potential dangers associated with online dating apps when creating our game while also acknowledging that many people have successfully found true love through these platforms. We were conscious of the need to balance these perspectives to avoid the criticism of presenting a one-sided view of online dating apps. To achieve this, we introduced multiple good endings to offer a more inclusive portrayal of online dating experiences. In one such ending, the protagonist finds lasting love with Jacky, leading to a fulfilling relationship. Another ending leaves a hint of romance, suggesting that a new colleague at the protagonist's office might be Jacky, thus leaving room for the player's imagination to explore the possibilities of this budding relationship. Additionally, there is an ending where the protagonist remains single but holds onto the hopeful message that true love will eventually find its way into their life. To enhance the impact and recall value of these good, neutral, or bad endings, each is accompanied by an engaging scene that includes practical advice, presented with a blend of humor and charm. These scenes feature cute illustrations that encapsulate the essence of the advice, making the messages more memorable and appealing to the players. Furthermore, we designed the user interface to closely resemble a real online dating app. This design choice was intentional to create a more immersive and relatable experience for our players, allowing them to connect more deeply with the game's narrative and themes. By simulating the look and feel of actual dating apps, we sought to bridge the gap between the game's fictional world and the real-life experiences of online dating, thereby enhancing the overall impact and relevance of the game's message.

Music Composition and Audio Design

For the auditory component of our game, we focused on developing two main types of sounds: a looping background music track and distinct sound effects that trigger upon the

player's selection of dialogue choices. Our approach to sound design was heavily influenced by the principles and methods shared by Rom Di Prisco. In crafting the background music, we did what Di Prisco (2023) suggested, we began by brainstorming a list of descriptive keywords to guide our creative process. We settled on terms such as "chill," "R&B," "romantic," "lo-fi hip-hop," "pleasing," and "loop." These keywords served as a blueprint, helping us to encapsulate the intended atmosphere of the game through our musical composition. Embracing Di Prisco's (2023) techniques, we explored various methods of sound production. One innovative approach we employed was recording custom foley sounds; for instance, we created a unique percussion loop using the sound Adrian made with his teeth. This use of custom foley added a distinctive and authentic touch to our soundtrack. Additionally, we experimented with layering techniques, combining two different stock instruments in Ableton 11 for the main chords. The foley percussion was also layered with stock percussion loops, enriching the track with a complex, multi-textured sound. Our soundtrack features a harmonious blend of live instruments and electronic elements, aligning with Di Prisco's (2023) recommendations. While most of the track was produced electronically in Ableton, the main melody was an exception, played by Adrian on his guitar. This inclusion of a live guitar melody not only brought an organic quality to the music but also complemented the electronic components, creating a unique and engaging auditory experience for our game. This thoughtful integration of various musical elements reflects our commitment to producing high-quality, immersive background music that enhances the overall gaming experience.

In developing the sound effects for dialogue choice selections in our game, we crafted three distinct variations to correspond with the nature of the player's choice: neutral, positive, and negative. Our approach to these sound effects was guided by the principles of sound design

shared by Di Prisco (2023), particularly focusing on custom foley, layering, and the emotive conveyance of sound. Each sound effect comprises two primary components: the sound of Adrian tapping his water bottle with a pen, and natural harmonics played on his guitar. The water bottle sound forms a consistent base across all three variations. To add depth and texture, we duplicated this sound and layered it with one copy pitched down an octave. This method created a rich, resonant base that remained constant regardless of the choice type. The differentiation between the sound effects lies in the guitar harmonics, specifically tailored to reflect the emotional tone of each choice. For the positive choice, the sound effect includes two guitar notes, with the second note ascending in pitch, creating an uplifting and affirming sensation. Conversely, the sound effect for the negative choice also uses two notes, but with the second note descending in pitch, imparting a sense of disappointment or disapproval. The neutral choice is represented by a single guitar note, maintaining a balanced and impartial tone. This attention to the details of sound allowed us to create a set of audio cues that not only enhance the player's experience but also intuitively communicate the consequences of their in-game decisions. By utilizing the expressive potential of sound, we aimed to deepen the player's emotional engagement with the game, making each choice feel more impactful and meaningful.

The creation of three distinct but thematically consistent sound effects was a deliberate choice to maintain auditory coherence throughout our game. Such consistency is crucial in delivering a seamless and engaging gaming experience (MacIsaac, 2023). In addition to this, we carefully balanced the volumes of both the background music and the sound effects triggered by dialogue choices. This careful adjustment ensures that each element is audibly distinct, allowing players to clearly hear the sounds without one covering the other, thereby enhancing the overall auditory experience. However, we encountered some technical challenges due to the limitations

of Twine. Twine's compatibility with audio playback varies across different web browsers, leading to inconsistent audio experiences. This variability is largely due to each browser's unique policies on auto-play audio, which are designed to prevent user annoyance from unsolicited sound. In our testing, we found that the game's audio functionality differed significantly across browsers. On Safari, the audio did not work at all. Chrome users could hear the choice-triggered sounds, but only if they adjusted their browser settings to allow auto-play audio. Meanwhile, Firefox offered the most seamless audio experience, with all sounds functioning correctly once the user enabled the auto-play feature and refreshed the game's webpage. This variability in audio playback across browsers underscores the challenges of developing web-based games with consistent user experiences. Despite these challenges, we strived to optimize the game's sound design within the constraints of the platform and browser capabilities, aiming to provide an immersive and enjoyable audio experience for as many players as possible.

Conclusion

In conclusion, *Cupid's Arrows* serves as a comprehensive exploration of the complexities of online dating app use, balancing the portrayal of its danger with its potential for genuine connections. Through a narrative-driven format, the game educates players about the risks of intrusive messaging, online fraud, and the ephemeral nature of relationships developed from online dating apps, while also emphasizing safe sex practices. The interactive design, which includes diverse, gender-ambiguous characters and realistic scenarios, encourages players to reflect on their behavior and the ethical considerations of online dating. Simultaneously, the game acknowledges the positive aspects of online dating, offering scenarios where true love is found, thus presenting a balanced view. The immersive experience is further enriched by carefully composed audio elements and a user interface that mirrors real dating apps, enhancing

the relevance and engagement of the game. Overall, *Cupid's Arrows* not only entertains but also imparts valuable lessons on using digital dating apps responsibly, making it a significant contribution to the genre of games for social change.

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