Design and Implementation of Interactive Narrative Games for Introverts

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Abstract: Introverted individuals face many subtle and significant social challenges in their daily lives, and there are very few products designed specifically for them. The paper analyzes the personality traits of introverts and conducts research and organization of real story scenarios in their lives, forming the story scene of the game. A narrative game that can interact with introverts is designed. The game uses dramatic storytelling, symbolic visual language, and an interesting card game system to gradually reveal embedded narratives. By allowing players to explore and acknowledge some social dilemmas encountered by introverts in their social lives, it provides players with a safe and engaging virtual environment to experience and interact with their social activities.

1. Introduction

Introverted personality is essentially a personality trait that cannot be changed, unlike loneliness and shyness. Approximately 50.2% of people prefer introverts, or at least those with intermediate personalities in the MBTI test (NERIS analysis data). Unfortunately, due to their introverted nature, these difficulties are rarely understood by non introverted individuals. Introverted people rarely express their inner thoughts because they want to maintain natural relationships with others rather than forcing others to understand them. The paper aims to use games as a medium for introverted groups to speak out, telling introverts about unknown difficulties in a more subtle way, helping non introverted individuals understand their inner thoughts and reactions in certain situations, making more people aware of introverted difficulties and reaching a tacit understanding with them, so that they can better get along with introverted friends.

2. Introverted Personality Traits and Product Design Cases

2.1. Current Situation of Introverts

Introverts are individuals who tend to focus on their internal private world, and their inner thoughts and feelings, and recharge by spending time alone or in small groups. They often find social situations draining and prefer to limit their exposure to large gatherings or events because they may feel uncomfortable or overwhelmed, especially if there is a lot of noise, stimulation, or

pressure to engage with others. They may also struggle to initiate conversations or connect with new people, preferring to observe and listen rather than take center stage.

Statistically, one-third to one-half of Americans are introverts[1]. In other words, one out of every two or three people around us is introverted. This is an enormous percentage, given that the United States is still among the most extroverted of nations. Nevertheless, western cultures seemingly tend to value extroverted traits, such as being outgoing, assertive, and sociable, in various aspects of life. For example, in the workplace, extroverted traits like networking, self-promotion, and public speaking are often viewed as essential for success. And even the open-plan office is obviously designed to accommodate extroverted preferences. It seems that there is a bias against introverts in modern society[2].

2.2. Characteristics of Introverts

Kaneline Briggs and her daughter Isabelle Briggs Miles proposed the Miles Briggs Type Indicator (MBTI) and defined the characteristic differences between introverted and extroverted individuals. Table 1 compares the characteristics of introverted and extroverted individuals.

Table 1: Comparison of characteristics between introverted and extroverted individuals.

Intrinsic tendency	External tendency
Full of energy when alone	Be energetic when interacting with others
Thinking comes before action	Action precedes thinking
Thinking about problems in the mind	Likes to think while speaking out
More closed and willing to share individuals in selected small groups	Easy to read and understand; Share personal information freely
Listen more than speak	Speak more than listen

Marty Olson Lenny's further research finds that introverted people have a lower threshold for external stimulus than extroverts and easily get worn out after being stimulated too much, which explains why they require additional time being alone to recharge themselves. She also clarifies the difference between introversion, shyness, and social anxiety. In her argument, many public figures who are known as introverts, such as Emma Watson and Keanu Reeves, demonstrate great social ability when participating in talk shows, interviews, and industry events, which is evidence that introverts are still capable of engaging in social events perfectly[3,4].

2.3. Introversion Bias

Introverts are not born to be inferior, but the extroversion ideal in modern cultures has pushed them to the edge of mainstream society. In a variety of social scenarios, such as debating, sales, or socializing, introverted people seem to be naturally in a bad position because of their inability to express themselves smoothly and efficiently. However, this does not mean that introverts are not capable of completing tasks requiring social skills and making connections with others. In fact, Cain argues that modern western culture misunderstands and undervalues the traits and capabilities of introverted people, leading to "a colossal waste of talent, energy, and happiness." To validate that introversion is not a defect, Laney gives a list of positive qualities which introverts possess, among which the most prominent two are "persistence" and "self-restraint." Being persistent means introverts are good at focusing on one specific task and making it perfect. It also means they are resistant to external temptations and far more likely to stick to their original goals. Meanwhile, self-restraint makes introverted individuals extraordinarily patient as well as even-tempered towards both work and people, and good listeners as they can restrain their talk and reflect more.

2.4. Design for Introverts

In order to further explore the spatial preferences and other aspects of introverted personality traits, we attempted to collect products designed specifically for introverts. Unfortunately, products designed specifically for introverts are not common. Ashesh Gohil, in his article InVisible: a guide to understanding & designing for introverts, looks at the change of the environment. He looks at very minimal needs that introverted people have like what small things might make them feel uncomfortable and what challenges they face in their daily lives. As an industrial designer, he tried to explore the possibility of using furniture as a physical manifestation of introverts' needs for private space and time[5]. Figure 1 shows furniture designed by Ashesh Gohil for introverts.
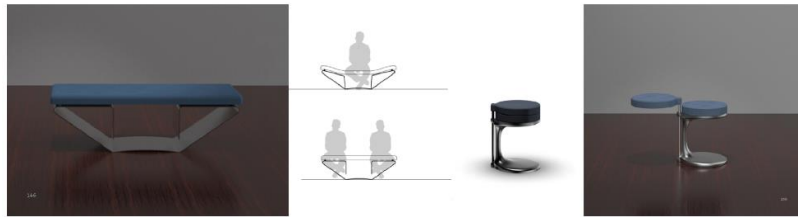

Figure 1: Gohil's furniture design for introverted people.

3. Story Scenario Design

In general, the storyline of the game is made up of a series of scenarios. Each scenario tells an independent story about an everyday social situation in which introverts may feel exhausted and uncomfortable due to the intense communication with other people. Therefore, it is necessary to conduct research on the group of introverts, all of which are set within university campuses. Based on the experiences of the surveyed individuals, they should be collected and summarized, and then expanded into a complete story[6].

3.1. Research on Story Content

Look for introverted individuals around you and try to absorb some of the very small challenges or troubles they encounter in daily life, in order to create a storyline. Research on the storyline should be conducted among familiar classmates and friends, and efforts should be made to disperse the storyline into different scenes, such as indoor, outdoor, and crowded trains.

During the research process, once potential materials are identified, they are written down in the form of storyboards. As shown in Figure 2.The storyboard records the characters involved, specific plots, and the entire emotional experience of the protagonist, and arranges these storylines in chronological order.

Figure 2: Storyboard for Imagining Scenes.

3.2. Formation of Storyline

In order to understand people's general feelings towards these stories, the storylines of different scenes were screened, reorganized, and corresponding storylines were formed in different scenes. These scenes were merged into a continuous storyline and named "A Day of an Introvert ". Then, by making the entire story into a short narrative video and playing it to the responders for visualization, it is told in a metaphorical or conceptual way. According to the feedback received, the emotions in the story are too subtle for a few people to understand; But most people showed interest because they felt that reading the psychological activities of introverts gave them a new understanding. Some introverted responders also connect the difficulties of introversion in the story, confirming that these scenes are to some extent universal rather than unique to themselves.

At this point, connect these storylines with the timeline of an introverted day to form storylines for different game design scenarios.

3.3. Story Scenario Design

In terms of story significance, the connection between the above storylines is loose because they may not necessarily occur in a predetermined chronological order. For example, on an introverted day, the first scene takes place in the morning subway, and the last scene takes place at a party, but players can experience the party scene before the subway scene. This sequential storytelling weakens the connection between specific characters and plot, but it emphasizes the commonality of each story, making players believe that the scene takes place on every normal day, rather than a specific day.

The main idea of game design is to design story scenarios for introverts. For introverts, it can generate inner resonance with the game storyline; For extroverts, they can have a clearer understanding of the inner world of their introverted personality. Scenario composition and design are reflected in the environmental composition, spatial composition, and character relationships of the story scene, to reflect the introvert's true understanding of the objective world and environment, as well as their psychological feelings in different scenarios and spatial environments such as crowding[7]. Figure 3 is the scenario design concept.
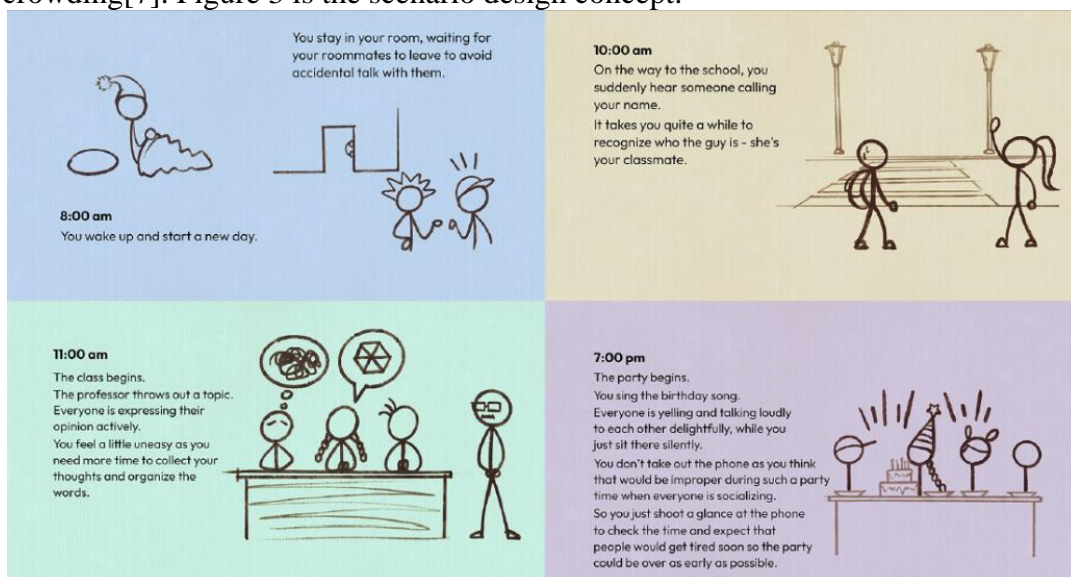

Figure 3: Scenario design concept.

The story scenario design of the game is non-linear. Under the player's control, they can actively

interact with roommates or stay away from them until they leave the apartment. This freedom gives players the opportunity to explore scenes, observe activities, and converse with different conversation partner to understand the possible development directions of the story. In addition, the display order of the scene may vary depending on the player's decision.

4. Card Game Design

4.1. Art Style Design

Choose to use a monochrome rough art style with hand drawn quality lines and gray shadows. As shown in Figure 4.The monochromatic color palette creates a stark and moody atmosphere which has the ability to emphasize particular emotions. In the case, the black-and-white look conveys a feeling of aloneness in spite of the busy environment and a sense of indifference towards the outer world [8]. Meanwhile, the expressive hand-drawn lines add a sense of motion that brings the game dynamic and aliveness. In addition, the sketchy art style often focuses more on composition and layout of the lines and shapes, which makes the graphics look visually cohesive and well-polished. In a word, the simple shapes, clean lines, reduced stimulus of colors, and dramatic contrast between light and dark, lead players to mostly concentrate on the characters' movements and performances in the scene, hence learning about the narratives behind them.
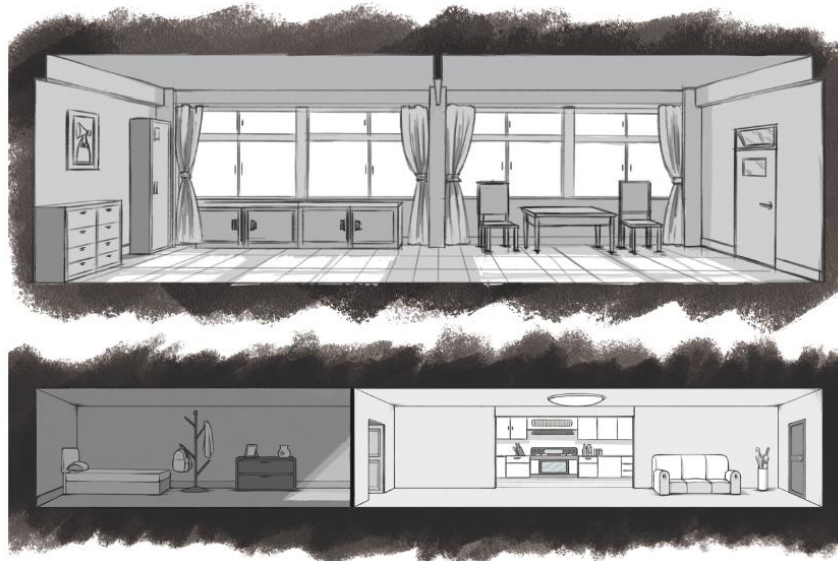

Figure 4: Game scene diagram.

4.2. Game Character Design

The characters are unrealistic as they have cartoon anatomies and their heads are replaced with symbolic objects including a house, phone, and basketball. The appearances of characters are abstract because each individual character refers to a certain group of people instead of a specific person. The protagonist of the game, Househead, as a typical introverted person, is represented as a cartoon character whose head is replaced by a house. The basic allusions of the house are introversion, privacy, and the desire to isolate the character's inner self from the outer world. The house is a safe harbor where he can feel at peace. The only way in which he acknowledges others is when he opens the door and sends his inner self out.

Househead's two roommates, Johnny and Quentin, are totally the reverse. Johnny, with a phone as his head, is a chatty and outgoing person who has many friends. The phone is a symbol of

communication and connection, which strongly suggests that Johnny is a particularly extroverted guy. Quentin, though not as enthusiastic as Johnny, enjoys outdoor sports as well as intense competition with others. His basketball-head delivers a sense of active movement and vitality, forming a sharp contrast with Househead's preference for quietness and stillness. Figure 5 shows the main characters in the game.
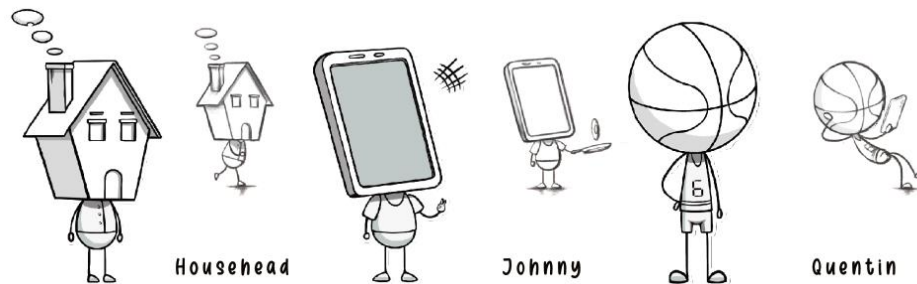

Figure 5: Game scene diagram.

4.3. Card Game Design

In the field of game design, card games as a medium have great potential to construct narratives with simple and entertaining gameplay. Therefore, I took the advantages of card games to embed my own card game in the middle of the story so as to add more interactivity as well as playfulness to the overall gaming experience. I expect the card game to play an essential part by enhancing both the storytelling and playability of the game.

The card game begins during the dialogues with NPCs (Conversation Partners). When the player initiates a conversation with an NPC in the scene, a card game will be launched between the player and the NPC after a few words of greetings. The game interface is made of several elements and the installation of the elements is illustrated below:

When a player initiates a conversation with an NPC in the scene, after a few pleasantries, a card game will unfold between the player and the NPC. The game interface consists of multiple elements, as shown in Figure 6, mainly including: ①The main play board; the board contains five multiply five - twenty five tiles on it; ②Player's avatar; ③Conversation partner (NPC) avatar; ④Player's cards at hand; ⑤Conversation partner (NPC)'s cards at hand; ⑥Player's Energy Points; ⑦The radar map showing the current progress towards the end of the game.
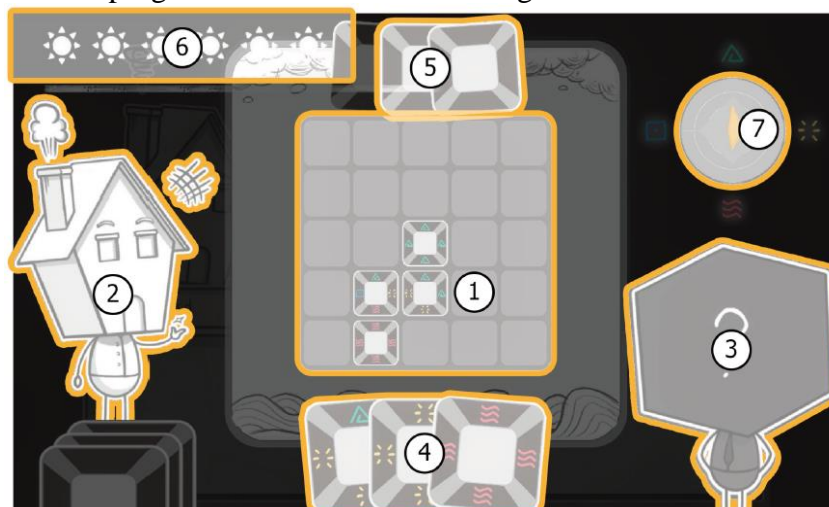

Figure 6: Game interface and elements.

4.4. Implication of Game Elements

Significantly, the reason why the card game happens in the middle of conversations is that the card game itself is a gamified simulation of the actual content of the dialogue. The cards can be seen as representations of certain topics or statements. And the goal of the game is to finish the conversation by talking about a sufficient number of topics with the conversation partner.

The four types of symbols symbolize the four different trends of topics: Emotional topics like a friend's love history are highly subjective and can easily arouse people's emotions; Rational topics like an academic question require people's logic and rationality to deal with specific problems; Casual topics like holiday plans allow people to speak anything they want with playfulness and light-heartedness; Serious topics like a business talk ask people to treat things with proper manners and formal attitudes. However, what the specific contents of the topic are is not important to the play because the core of the game is to simulate an introvert's hurry-scurry behaviors in an effort to keep up with the pace of the conversation.

The core play of drawing and dropping cards on the board is an abstract simulation of coming up with topics and developing the conversation. In this process, being an introverted person, Househead is not good at finding topics, for which most of the time he plays a role as a listener and echo what others have said. And the goal of the game, having enough number of required symbols on the play board, points out a direction in which Househead can spread out the topics. Besides, the setting of pairs of the SAME or CONFLICT symbols also adds hints on whether a topic to be raised could be potentially positive or negative to maintain the conversation. In fact, either "positive" or "negative" topics will not exert any substantial results because they are just Househead's own personal feelings. A "negative" topic will not displease the partner but will lower Househead's spirit by reducing his energy as Househead may subjectively believe he has said something mindless and untimely.

The energy point is a symbol which indicates the tiredness level of Househead. As an introvert, Househead will become increasingly exhausted when talking with others. If he feels too tired–that is, if the energy points run out–he will have to stop talking and find a chance to stay alone for a while to recharge himself. As a result, the energy points will naturally recover when Househead is not chatting (in the game, any time beyond the card game). In order to visualize Househead's tiredness all the time, the energy points are not only shown during the card game play, but are visible through the entire journey.

It is also worth mentioning that the card game plays a part in the narratives as the energy points will sometimes influence the development of the story. When the player tries to initiate a conversation, if Househead does not have any energy points, he will refuse to talk to anybody regardless of the player's choice. In that case, the story may be sent in an unexpected direction.

5. Conclusions

Through the analysis of introverted personality characteristics, this paper tries to understand the real world more deeply from the perspective of introverts, so as to provide the necessary clues for the game design of introverts. By conducting research on self perceived awkward stories in the daily lives of introverts, different storylines of introverted games are formed. The design of story scenarios reflects an understanding of the inner world of introverts, and is also a window for game players to understand their inner world. The exaggerated emotions and symbolic character designs in card games together depict the inner world of introverts, providing both attractive and satisfying gaming experiences for introverted and non introverted players, and providing valuable experience on how to share introverted hidden stories in a gamified way.

In summary, through the analysis of introverts' personality characteristics, research and story

scenario design, this paper develops a game that not only targets introverts, but also enables extroverts to understand the inner world of introverts, hoping to provide necessary reference and help for game or product designers when designing products for introverts.

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