Comparison between non-NPC interaction and NPC interaction
- Taking Fallout 4 and Fallout 76 as examples -

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Abstract:

Game interaction refers to the interactive entertainment activities performed by the user in the dynamic narrative environment with the protagonist role. At present, the game interaction design has an increasingly greater influence on the playability of a game. The Fallout series is the masterpiece of game interaction. Recently, the Fallout series has launched a new work Fallout 76. This work uses a new interaction mode, that is, non-NPC interaction, which is very different from previous works. After the game is listed, the player's reputation is mixed, and the overall evaluation of the game is significantly lower than the previous game. In response to this phenomenon, this paper hopes to explore the characteristics of these two interaction patterns by comparing and analyzing Fallout 76 and the previous work Fallout 4. The player is surveyed, and the opinions and opinions of the players are summarized. Through the above research and investigation, the characteristics of each game in the game interaction and their respective advantages and disadvantages are summarized. These advantages and disadvantages are summarized and analyzed to develop a better game interaction pattern.

Keywords: Fallout series, Interactive storytelling, Game interaction, Non-NPC interaction, NPC interaction

I. INTRODUCTION

With the development of the game industry, the design concept of the game is constantly improving. Among them, the role of game interaction in game design is more and more important. The game interaction design has been developed so far, and the mode of game interaction has basically matured. The Fallout series is the masterpiece of games that focuses on game interactivity, and the Fallout 4 uses the NPC interactive mode. There is a rich interaction between the player and the NPC, and the various behaviors and dialogues of the player will affect the interaction with the NPC. Fallout 4 has received wide acclaim and huge sales among players. Recently, the Fallout series launched its new game, Fallout 76, which uses a novel game interaction system, namely non-NPC interaction. In this new interactive mode, there is no human NPC, and the game's tasks are released and carried out through robots, task props scattered in the scene, and broadcast media. However, after the Fallout 76 went on the market, the players' evaluation of the game was mixed. The sales volume was far less than the previous one, and the game rating was very low. There are many players who say they don't like this interactive mode, and the new game interaction mode greatly affects their game experience.

The main purpose of this paper is to explore the differences between the two interaction modes by comparing and analyzing Fallout 76 and the former Fallout 4. These advantages and disadvantages are summarized and analyzed to develop a better game interaction mode.

The research of the above content is not limited to sandbox games, but also can realize the game experience brought by the realization of interactive narrative in other types of digital games and interactive narrative. In addition, this paper hopes to bring digital game design. A certain revelation, and a certain direction of the digital game based on the development direction of the player's psychological needs.

II. RELATED CONCEPTS

II.I. Game interaction

The concept of interactive storytelling was born on the basis of character game design, and the concept proponent Chris Crawford himself is a role game designer [1]. Firstly, the concept is deconstructed and divided into interactive and narrative. These two attributes are also the essence of the characteristics of the sandbox game, and then reconstructed to explore the concept of interactive storytelling.

II.II. Sandbox game interaction

It can be seen from the literature [2]: Computer and network technology brings the possibility of two-way communication and real-time communication to the emotional exchange of art. The art of electronic games realizes the two-way exchange dominated by appreciators advocated by American scholars. There are many ways to classify the interactions that the game reflects. For example, the interactive content of the role game in the literature [3] is divided into the interaction of the game's overall environment, the interaction of the game interface, the interaction of the game process, the interaction of the game sound, the interaction of the game characters and the interaction

between game players. The interaction of role games in the literature [4] is divided into three categories:

(1) Player-computer interaction This is the basis of the other two interactions of the character game, which refers to the interaction between the player and the computer hardware device, including the use of mouse, keyboard, computer and other hardware configurations (such as memory, video memory, etc.), It takes a crucial role for the player to play the game and achieve a certain game effect. Human-computer interaction plays a key role in the study of character games [5].

(2) Player-to-game interaction This refers to the interaction between the player and the specific content text in the game, which is a process of information exchange. On the one hand, the player needs to receive information from the game, such as understanding the rules of the game, the background of the story, and receiving the stimulation brought by the game; on the other hand, the game program needs to process the feedback information of the player in real time to ensure the normal operation of the game. That is to say, the user (player) influences the selection, order and expression of a series of predictive story factors [6].

(3) Player-player interaction This interaction is based on developed Internet technology. Under the background of the network, the player is not limited to interacting with the computer. The network connects countless players-controlled computers, and the players pass Computers and the Internet, interacting with other online players [7], is a breakthrough revolution in media interaction and an important milestone in the development of role games.

II.III. Research on player experience of sandbox game interactivity

According to the literature [8]: The people who really like games are mostly because the game gives him a brand-new experience, a dream that he or she may not realize in a lifetime. Some scholars regard interactive storytelling as a game. Experience, in this experience the form and content of the game is rendered in real time to meet the player's maximum entertainment experience [9].

In [10], the player's game experience is divided into three levels: sensory stimulation, psychological needs and humanity theme. From the shallower to the deeper, the psychological experience and spiritual cognition brought by the character game to the player is studied. In the 1990s, with the development of digital games, the basic theory of the role game experience has basically taken shape. Scholar Jane Murry has divided the aesthetic system of role games into three parts: immersion, agency, and transformation. These three experiences basically summarize the most basic characteristics of the sandbox game and the most basic aesthetic feelings of the role game player.

(1) Immersion. Immersion in the immersive character game means that the player is completely focused on the game content itself in the process of the game, and forgets his own reality, and devote himself to the virtual game world, taking himself as a component of the game story, forget the troubles in reality and eliminate the interference of the real world [11].

The key to the realization of immersion is whether it can interact naturally, that is, it can sense and operate objects in the environment in daily use [12].

(2) Agency. Agency in a sandbox game means that the player puts his energy into the game, and the game symbol representing the player becomes the carrier of the player's energy in the game [13]. Game symbols roam and interact in the game world as if the player was in the game world. This carrier brings the player's energy and information into the game, communicating and exchanging energy and information in the game world.

(3) transformation. The transformation in the sandbox game means that when the player roams in the game world, his identity changes. Unlike the real world, the player is no longer a physical person in reality [14], but in the game world. The main body, although the player is controlling the main body of the game, but the player's psychological perception is transformed during the game, and the self-realized cognition is converted into the concept and cognition in the game world. The conversion of ideas is for the player to experience the game. A big test factor [15].

Although many scholars have begun to pay attention to the player experience under the interactive storytelling of role games, they have not formed their own unique aesthetic disciplines like film and television, and more are biased towards the user experience in the field of game design, so under the interactive storytelling of role games The study of player experience looks forward to further theorization and systematization.

III. NPC INTERACTION MOD AND NON-NPC INTERACTION MOD

III.I. NPC interaction mod based on Fallout 4

Fallout 4 uses a traditional NPC interactive pattern. NPC can play a variety of game characters, such as some insignificant shopkeepers, passers-by, soldiers; some meaningful characters such as player teammates, opponents; in addition, in multi-player games, NPC It can also play a role that many human players don't want to play, such as blacksmiths, alchemists, and other non-heroes.

Therefore, for NPC, on the one hand, different attribute characteristics, such as identity, personality, ability, etc., can be used to better present the emotions and behavior patterns of different characters, which will greatly evoke the player's perception of the role. And emotional attitudes, which in turn stimulate the player's immersive feeling, as if they are in a real game environment; on the other hand, NPC as a necessary carrier for the game function to achieve interaction, can help the player character smoothly develop the game activity process, Complete some mission objectives with certain meanings, such as system help, plot acquisition guidelines, and item sales.

For Fallout 4, the overall process of the game is based on NPC interaction. In the game, NPC is the main interaction medium between players and games. Through the dialogue with the

NPC in the game, the player can lead to various mainline plots and regional plots, and the NPC will also guide the players through dialogues and behaviors during the mission. At the same time, NPC will introduce the story background of the game and the task to the player, so that the player can be better brought into the game. The game sets different backgrounds and ideologies for the NPC. The content of the player's dialogue with the NPC and its own behavior will directly affect the NPC's judgment on the player, resulting in changes in the task and story according to the player's own choice. These complex settings for the NPC constitute a rich interaction between the player and the NPC in Fallout 4, and also determine the interaction mode of the entire game.

Fig 1. Interaction with NPC

III.II. Non-NPC interaction based on Fallout 76

Contrary to the interaction pattern employed by Fallout 4, Fallout 76 employs a non-NPC interaction mode, which is a rare and bold mode. In this interactive mode, the traditional NPC is cancelled. There are no human NPCs in the game, only various task props and non-human monsters in the wild. At the same time, Fallout 76 introduces the concept of online gaming, allowing players to play online. In other words, the human beings that the player can see in the game can only be other players.

In Fallout 76, the medium that interacts with the player is not the NPC, but the hologram, radio, notebook, tape, and other items in the game. When the player reaches a certain place on the map, the corresponding condition is triggered, and the game releases the task to the player through holographic images or broadcasting, and introduces the related story background to the player. Or the player obtains the corresponding task information by collecting the task items in the game, and acquires the tasks when the items are gathered. In this non-NPC interaction mode, the object that interacts with the player is more like the game world itself.

Based on the characteristics of this new interactive mode, and the possibility of players playing online, the players began to play the role of traditional NPC spontaneously. The popular gameplay in Fallout 76 is role-playing, where the player gives himself an identity and then moves in the game according to this setting. Because the world of Fallout itself is full of possibilities, all kinds of weird characters, crazy conspiracy theories can be seamlessly embedded in the world. So even if

there are many problems with the game, there are still many players who want to find the light points in them. Some people started the guide business, collecting caps and taking other players to explore dangerous areas. Some people play bodyguards, take people's money to replace people, and some even establish their own sects in the game.

At the same time, the player and the player have the function of mutual trading, so that the player can play the role of the merchant in the game. Some players spontaneously act as a guide to the task, guiding other players to complete the mission and assist in killing the monster. The existence of the team system makes the original NPC follower replaced by the player.

In summary, the interactive system of Fallout 76 is actually a non-NPC interaction. Although players will spontaneously act as interactive media in the game, this is actually due to the lack of in-game NPC players to make up for the missing gameplay behavior. At the same time, the interaction between the player and the player also lacks the in-game support, so that the interaction between the players can only be based on the tacit understanding of each other, and cannot form a true interaction mode.

Fig 2. Interaction with player

Table 1, The comparison of two interaction modes

Interaction mod	Fallout 4	Fallout 76
Interact with NPCs	YES	NO
Interact through props	YES	YES
Interact with the player	NO	YES

IV. THE FEATURES OF NPC INTERACTION AND NON-NPC INTERACTION

IV.I. The features of NPC interaction

IV.I.I. The advantages of NPC interaction

(1) Increase the diversity of the game. NPC plays a variety of roles in the game, including player companions, enemies, various functional characters, native aborigines in the game, and mission goals. And based on NPC-based artificial intelligence, different roles also bring different interactions. In

the game, players will interact differently with different NPCs. This is a complex and varied system that greatly enriches the game content and improves the game's diversity.

(2) Enhance the authenticity of the game. The sandbox game is essentially creating an open world and making the player do as much as possible in this open world. In other words, the sandbox game is to provide players with a real world based on the rules of the game. The existence of NPC allows players to get feedback on every behavior of the world. Through dialogues and actions with NPCs, players influence the corresponding events and tasks, which in turn affects the progress of the entire game world. Based on the existence of NPC, players can experience an operating mode similar to the real world, which greatly enhances the authenticity of the game.

IV.I.II. The disadvantages of NPC interaction

(1) The interaction is mechanical. NPC's behavioral model is based on its own AI system, even though game AI has evolved to a large extent. NPC's behavior template only sets several instructions for different situations. After the player triggers the corresponding conditions, the NPC acts according to the behavior template. This makes the NPC's behavior similar to a mechanical behavior, and the player feels that he is facing some robots that follow the template. There is no doubt that this will weaken the player's sense of substitution, making the player feel bored after playing for a certain period of time. The mechanical nature of the NPC interaction largely affects the overall fun of the game.

(2) Limit the player's play space. In the real world, the consequences of the corresponding behaviors people make are incalculable. But in the game, because of the limitations of artificial intelligence technology, the results of subsequent events are often limited and predictable. And the dialogue between the player and the NPC is limited to a limited number of options, and the player cannot make other choices. These allow the player to play little space, which means that the player can only make limited choices, which in turn determines the limited development of subsequent events. This limitation also affects the player's gaming experience and limits the fun of the open world.

IV.II. The features of non-NPC interaction

IV.II.I. The advantages of non-NPC interaction

(1) It can interact more fully with the game world itself. In the absence of NPC in the radiation 76, the player needs to obtain tasks and obtain information by collecting quest items or viewing items in various game scenes, while the task is guided by computers, holograms and broadcast media. This non-NPC interaction mode can actually be seen as the interaction between the player and the game world itself. All the components of the game world are interactive objects of the player, they tell the background story of the game and guide the player's actions. In a way, this is a purer interaction. For some games, this interaction mode can better render the atmosphere of the game world, just like Radiation76.

(2) The interaction between players is random. In the radiation 76, there is a behavior in which the player spontaneously plays the NPC, which can also be regarded as a manifestation of the non-NPC interaction mode. The biggest characteristic of the interaction between the player and the player is randomness. The result of the interaction often changes with the player's own mood or preference. The player does not know whether the other party is friendly or hostile, and does not know what action the other party will make in the next second. This randomness keeps the player fresh on the game and greatly enhances the game experience.

IV.II.II. The disadvantages of non-NPC interaction

(1) The lack of interactive content. The most immediate consequence of not having an NPC is that the interactive content is not rich enough. In the traditional interactive mode, the game is full of NPCs, these NPCs have their own background stories and features. NPC's wearing, occupation, behavioral patterns, language habits and other factors provide players with a considerable amount of information, to a certain extent enrich the interactive content. In the non-NPC interaction mode, this richness is greatly reduced, resulting in a lack of interactive content.

(2) The interaction between players is arbitrary. The interaction between players has a more flexible interactive experience, but because of the differences between individual players, it is also highly random. For example, after the players jointly kill the monsters, they may be shot because of the distribution of the spoils. When the tasks are completed together, the tasks fail due to various reasons. When these situations occur, the player's gaming experience will be very bad. This situation is uncontrollable, which leads players to often get a good game feedback. Therefore, the randomness of the interaction between players largely affects the player's gaming experience.

Table 2. The characteristics of two interaction modes

Characteristic	Fallout 4	Fallout 76
Rich interactivity	YES	NO
Novel interaction mode	NO	YES
More realistic freedom of interaction	No	YES
Good interaction experience	YES	No

V. CONCLUSION

From the above research, we can see that NPC interaction and non-NPC interaction have their own advantages and disadvantages. As a traditional interactive mode, NPC interaction has matured to the present. Based on AI technology, developers can arrange a variety of NPCs in the game, this difference and diversity will provide players with a richer interactive experience. At the same time, due to the certainty of

the program, the player can successfully complete the task through the NPC and be satisfied with the sense of accomplishment. This is the improvement of gameplay by the NPC interactive mode.

However, NPC interaction also has its drawbacks. Most of the behaviors performed by NPCs in game scenarios are random behaviors controlled by background code or traditional predefined behaviors. This allows players to experience several games more. A clear understanding of the general pattern of non-player character behavior in the game, which greatly reduces the player's participation, so that the player loses interest in continuing to experience the game. More importantly, these NPCs do not consider their own situation based on the events that occur in the game scenario, and then decide which decision-making behaviors to modify to maximize the reward.

The essence of the sandbox game is to create an open world. The disadvantages of the NPC interaction mode will undoubtedly affect the freedom of the development world. The non-NPC interaction mode is an attempt to increase the degree of freedom. The non-NPC interaction mode removes the traditional NPC, and the player acquires the tasks and background stories in the game through his own exploration and collection. At the same time, the interaction between players is introduced to enrich the non-NPC interaction system. The original intention of this model is good. It improves the freedom of the game to a certain extent, solves the problem that the NPC is too programmatic, and gives the player a considerable degree of autonomy. But through the evaluation of the game and the evaluation of the players, the effect of this new interaction mode is not satisfactory.

In the non-NPC interaction mode, the richness of game content is greatly reduced because of the lack of NPC. The player needs to maintain a constant state of excitement during the game, which can make the player feel fresh about the game content without getting bored prematurely. NPC settings can be varied, regardless of appearance, character, language, etc. These differences allow players to continuously receive new information and continue to excite the game, and these differences are greatly enriched Interactive content. The lack of NPC greatly reduces this experience.

The interaction between players in the non-NPC interaction mode is also a failure, and the drawbacks of this mode are far greater than the advantages. Because of the player's arbitrariness, the interaction between players often does not get a good feedback. And because the game function between the player and the player is relatively small, only the basic functions such as trading and team formation, the interaction between the players is relatively small. The side effects of this interaction pattern are significantly greater than the increased free lines.

By summarizing the characteristics of NPC interaction mode and non-NPC interaction mode, this paper believes that these two interaction modes should be combined.

(1) The NPC should be preserved in the game design, which will help to increase the richness of the interaction. When setting the behavior mode of NPC, you can set a random behavior pattern library for some unimportant NPCs, which

will make the behavior of NPC add true. At the same time, because these NPCs do not involve the main tasks, they will not affect the progress of the game, nor will they cause frustration because the players fail frequently.

(2) Introduce the mode in which the player interacts with the player. The game can set up some random tasks and plots. The characters in the mission are played by the player and the NPC, and these tasks must be a sideline story. Due to the randomness of the player, if the player participates too much in the mainline story, the probability of the task failing is greatly enhanced, thereby affecting the game experience. It is also necessary to increase the player's ability to interact with other players in the game, such as posting tasks, giving rewards, and so on. This can greatly enhance the freedom of the game without affecting the overall progress of the game, allowing players to get a new interactive experience.

(3) Preserve a portion of the non-NPC interaction component so that the player can spontaneously select tasks and discover game stories by collecting items in the game. This will complement the interaction between the player and the game to a certain extent, enriching the player's interactive experience.

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