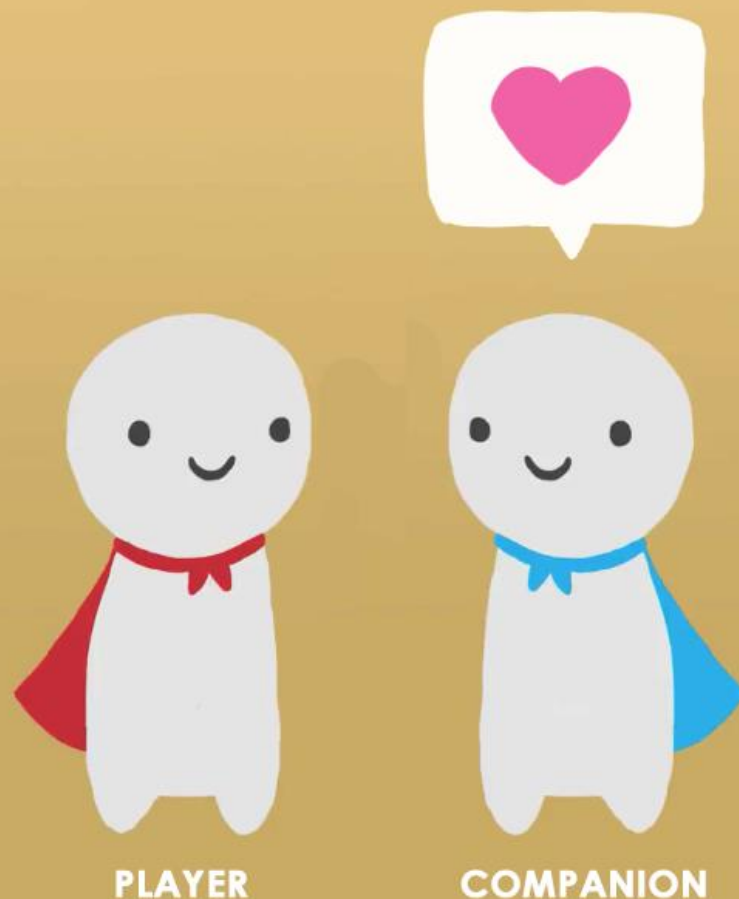


CATEGORISING NON-PLAYER CHARACTER COMPANIONS AND THE INFLUENCE THEY HAVE ON THE PLAYER



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Abstract:

Characters that follow the player throughout a games are called companions. Companions are commonly part of the story in narrative focused games, such as role-playing games, but are also present in games with a focus on gameplay. This report investigates companions through a review of the current literature and an analysis of games that use companions. The analysis revealed several shared tendencies between the games and these tendencies were used to construct a model of non-player character companions. Using the model, the effect of companions on player choices was investigated using a game with two identical versions of the game, but with different companion types categorised by the model.

The companion with higher narrative purpose was able to affect the player's choice significantly more than the companion with less narrative purpose. Additionally, the test participants were able to an extent, categorise the companion accordingly to a hypothesised model, indicating that the model can be used to categorise companions.

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1. Introduction

“True happiness arises, in the first place, from the enjoyment of one’s self, and in the next, from the friendship and conversation of a few select companions.”

Joseph Addison

Joseph Campbell introduced in *The Hero with a Thousand Faces* (1949) [1] the monomyth, also known as the hero’s journey, which is a narrative structure that is shared by myths, novels and other narratives. In this narrative structure, the protagonist meets one or several helpers that will assist them throughout the challenges and trials. [1] These helpers accompany the hero and can therefore be referred to as companions. These companions are present in popular fiction that follow the monomyth such as *Star Wars: Episode IV – A New Hope* [2] where the protagonist Luke Skywalker is helped by Han Solo and Princess Leia.

Another type of companion, the sidekick, has had its presence throughout traditional media as well. Buchanan [3] identifies the sidekick as crucial to a story’s development, while being a lesser important character than the protagonist. “..*[T]he identity of the central character is defined largely by the presence of the accompanying character, the sidekick.*” [3] This companion type can be identified in a pairing such as Sherlock Holmes and Dr. Watson in the *Sherlock Holmes* book series by Sir Arthur Conan Doyle, where Dr. Watson, as the narrator, accompanies Holmes, the protagonist.

Interactive narratives makes use of the same archetypes and structure as narratives presented in traditional media, however, it has the added dimension of interactivity. Games of certain genres, such as roleplaying games and first-person shooters, aim to tell a story which often has the player control a character, the player character (PC). The PC, typically the protagonist of the story, is the game’s way of giving the player agency in the story and with this agency they can interact with the world and its characters. A character beyond the control of the player is referred to as a non-player characters (NPC). NPCs in video games a wide variety of purposes as they operate as enemies, friends, allies, love interests etc.

A specific type of NPC in games is the companion. These are characters who accompany the PC during the game and have differing functions depending on the game and narrative they are a part of. Their function can be the helper, the sidekick, the ally, the love-interest or even the rival. They exist for the same purposes as characters in myths, novels or movies, but with interactivity they open up options unique to interactive narratives.

2. Research

Lewis et al. [4] constitutes that the central element of games, specifically in the role-playing game (RPG) genre, is to have story, character development, and to immerse the player into the world, events and characters of the game. They describe the connection between the player and the characters to be an “..actual, tangible connection..” [4] compared to non-interactive media which has parasocial interaction, as in a one-sided relationship where the audience develops an illusionary experience of friendship. In an effort to create a metric for character attachment, they define it through four components:

1. *Friendship/Identification with a video game character*
2. *Willingness to suspend disbelief*
3. *Feeling responsible for the game character*
4. *Feel in control of the game character's actions*

Based on these components, they developed a 17 item questionnaire to be answered using 7-point Likert scales. Based on 572 respondents they found their character attachment scale valid. [4]

Waern [5] in her paper ““I'm in love with someone that doesn't exist!!” Bleed in the context of a Computer Game” investigates romance as an integrated gameplay feature, specifically in the game *Dragon Age: Origins* (DAO). DAO is a single player RPG by BioWare where the player takes the role of a protagonist who throughout the game is accompanied by a group of companions.

The player has the opportunity to engage in romance with a specific set of these companions based on their gender, race, and sexuality. Waern [5] proposes that the player will experience similar feelings to the game character which they control and effectively role-play as during the gameplay. Waern [5] argues that romance is a common theme in games in general, however, *DAO* specifically makes it part of the gameplay by having an approval system which affects both the narrative and gameplay. These relationships will have a large influence on specific plot points and can eventually lead to several endings to the game.

To investigate this effect of bleed-in, Waern [5] collected material from online discussion forums of players discussing their emotional attachment to characters and storylines until reaching a point of saturation where no new information was gained. She found that romance bleed-in is more likely to occur if the game character shares the same gender and sexuality as the player. The result of the investigation was a collection of statements which confirm that some bleed occurs in *DAO*. Additionally, hinting that women gamers may be more likely to experience this.

Jørgensen [6] explored game characters as narrative devices using a comparative analysis of two games: *Dragon Age: Origins* (DAO) and *Mass Effect 2* (ME2). In her investigation she found that player can establish empathic relationships with game characters, and in DAO and ME2 this is accomplished

through the player's companions in both games. She found that characters must be "...*deep and interesting*." [6] Depth referring to character emotional and psychological complexity, while interesting is the original and imaginative aspects of the character. She found that the character's in both games follow common tropes in stories which makes them easy to identify with, however, they have additional interesting personal traits and backstories, as well as developing the characters throughout the story. This makes the companions in both games complex and allows for empathic relationships and emotional connection to the game, which aims to make the player care about the future of the character and the world.

Additionally, Jørgensen [6] describes DAO and ME2 as having micro-narratives where the companion acts as the protagonist, and the player takes the role of companion. These micro-narratives are windows into the backstory and personality of the companions, which further makes the player empathise with the character as they get to learn the reasons for their behaviour.

Pinchbeck [7] in "*An Analysis of Persistent Non-Player Characters in the First-Person Gaming genre 1998-2007: a case for the fusion of mechanics and diegetics*" explores persistent non-player characters (PNPCs). PNPCs are individuals who, in the diegesis of the game, "...*appear repeatedly or have a definable role in the world and plot*." [7] A regular type of PNPC is the ally, who require more complex interaction than enemies in first-person shooter games, as they in most cases exist to be killed in combat. PNPCs are used for story development and their purpose is to keep the player focused and interested in the plot. Some PNPCs exist solely for giving ludic assistance, such as helping by shooting enemies or delivering information. Pinchbeck found that games attach significance to PNPCs in order to create more complex affective experiences. He points to *Quake 4* where a character's death has an emotional impact as the character was involved in the gameplay and plot of the game, rather than a bystander.

The overall trends of the current research on companions points to them being used for creating emotional connection to the game. Increasing the complexity of them as a ludic companion, character development, incorporation into the narrative and increasing their depth should increase the emotional connection and attachment players have to companions.

Since there is insufficient research into companions in games, a review of literary work and articles that focuses on game design could give insight into the industry's approach when creating game companions. Bates describes that characters are the key focus in stories as "Events themselves are interesting only insofar as they give us insights into people" [8] he states NPCs can be of great importance, especially giving emotions and reactions where the player character cannot, an example being in first person shooters where the player cannot see their own characters expressions and so non-player characters are used to react to events.

Perry describes that non-player characters “roles have nothing to do with their skills, training, or professions, but with their relationship to the player’s character and the story as a whole.” [9] Perry suggests when creating characters it is important to describe their goals, traits, quirks, etc. in order to create characters as people with in-depth personality and behaviour. Schell [10] supports this idea by creating a character bible, describing and fleshing out every possible attribute in order to make them feel believable.

Adams [11] states that creating characters with complex personalities and rich backgrounds is not only to make the character more believable, but to also immerse the player. Emotional engagement can be evoked by creating characters that the players care for, which can be done through narrative driven games that incorporates emotional and personal growth in the narrative. [11] This is supported by Bartle, Bateman et. al as “Emotions play a central role in all player experiences, not only because they add enjoyment, but also because emotions play an important role in decision making” [12]. Emotions are driven by personal goals, and so the designer could use characters to evoke emotions as “Extremely immersive games have a tendency to allow players to form a deeper emotional attachment to their characters.” [13]

Schell also states that characters can be used in order to indirectly control the player by making the player emotionally attached to the other characters “... use your storytelling ability to make the player actually care about the characters, that is, willingly wanting to obey them, help them, or destroy them.” [10] She uses the princess from the game Ico as an example, where the mechanism of monsters pulling her away and taking her, creates a feeling of guardianship over the princess, as so players feel the need to protect her, controlling the choices they make.

Whilst Rogers [14] agrees with creating in depth characters that “have many motivations: success, revenge, love, acceptance, escape, hunger, responsibility, knowledge” and often conflicting motivations, Rogers also states emotional bond can come from non-human characters, such as Argo the horse from Shadow of the Colossus or the dog companion from Fallout 4. It is interesting to note as previous literature have claimed the complexity of the character determines emotional engagement. Dowsing [15] discusses companions in videogames in an article that focuses not on the narrative or interactive complexity of the character, but on whether the companions usefulness determines how good it is as a companion. If the companion is useful, players can become emotionally attached regardless of companion complexity. He uses the Companion cube in Portal 2 as an example, as players can become emotionally attached to the inanimate companion and feel distressed when having to incinerate it. The reason for this emotional attachment could be due to the usefulness of the companion cube as you use it to solve puzzles along the way.

The research and literature shows that there is a focus on the depth of the character, which could in turn drive the players emotion and choices. However, there is indication that there is lack of a thorough guide or indepth detailing into the functionality of companions, as most of the literature only describe how to create any sort of character on a surface level.

3. Defining companions

Based on the research in previous sections, a companion is defined as the following:

An individual or entity, which exists in the diegesis of the game, accompanying the player frequently.

The frequency of the companion accompanying the player is an important factor that sets it apart from a NPC. It is important to define the companion as a part of the game's diegesis, meaning, the companion must be experienced by the player through the diegetic world of the game. For example, in Stanley's Parable, the narrator who accompanies the player character is not a companion because it is non-diegetic. It should also be noted that NPCs that may be a part of the narrative where it is told that they have accompanied the player character, but are not of the game experience, is not a companion. For example, if the game shows a passage of time through a short cutscene, indicating that the player character was accompanied by a NPC for a long time, but the diegetic experience with the NPC throughout the duration of the game is insignificant in relation to narrative, it is not a companion. Using this definition, an analysis of games can be conducted to investigate the role of the companion in games in order to create a comprehensive list and model of what companions can be.

4. Investigation of games

This section investigates the different types of companions using the working definition of what a companion is. The game were chosen to cover as broad a spectrum of games as feasible.

4.1. Mount & Blade: Warband

Mount & Blade: Warband is an action role-playing game by TaleWorlds Entertainment released in 2010 as an expansion to the original game Mount & Blade. In this game, the player character must recruit an army in order to serve Lords, Queens and Kings in order to move up the social ladder. The player character can recruit specific named companions who will join you and take role as soldiers in the army, however, they differ in the way that these companions can be customised to specifically use certain weapons, armours and horses. Furthermore, the companions have personalities as shown when they comment and object on certain game events they dislike. They also have backstories and specific companions have certain missions depending on their background. If the player character creates their own kingdom, the companions can be made Lord of a hold in the kingdom. If the player character is female, it is possible to marry a companion who has become a Lord. The player can communicate with them using a set of dialogue options that are identical for all companions, except for their personalised missions. During combat, if they are in your army, the player can control them using tactical commands and outside of combat the player can send them on specific missions, such as gathering intelligence on a faction. There is no predetermined overarching narrative the player must follow and therefore companions are entirely optional.

4.2. World of Warcraft

World of Warcraft (WoW) is a massively multiplayer online role-playing game by Blizzard Entertainment released in 2004. WoW has a set of classes, such as Warrior, Warlock, Hunter, etc. These classes differentiate from each other by having different skills and approaches to combat. Certain classes, like the Hunter, have a pet companion by their side. This pet companion can be commanded specifically by the player to only use its abilities when they choose, or they can be set on an automatic mode where the pet companion automatically performs combat duties. The classes with pets have slightly different approaches from each other. The Hunter class must tame a wild beast to become a pet which they can name as they want, whereas, Warlocks and Death Knights simply summon a minion. The companions have no impact on the narrative of the game, and are optional, however, not using the pets would weaken the classes in combat.

4.3. Night in the Woods

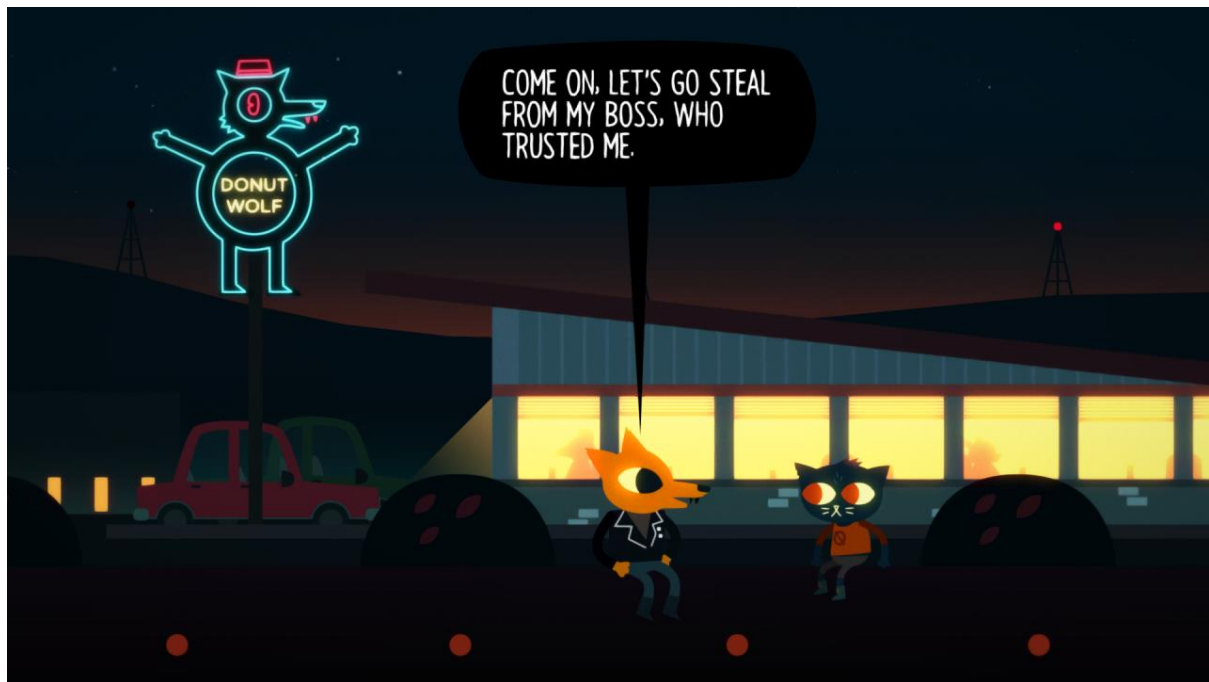


Figure 1: Gregg and Mae conversing. [16]

Night in the Woods is an adventure game developed by Infinite Fall and released in 2017. In this game the player plays a cat named Mae who is recently a college drop-out and moves back to her hometown, rekindling old friendships and escaping from the troubles of adulthood. Mae has two companions in which she can create strong bonds with, Gregg or Bea depending on whether the player chooses to follow Gregg's story arc or Bea's story arc. The player interacts with them where they are either given dialogue options to choose from or dialogue that they can read along. The player character can also interact with them through Mae's laptop where they message back and forth. When choosing to go on an event with Gregg or Bea, there are temporary additional gameplay elements to the companion for that single event. For example, there is a mini-game where the player character is helping Gregg carry a box up and down stairs through quicktime events and missing one quicktime event will result in Gregg slipping and falling down the stairs. In this case the companions are used for effective narrative as well as gameplay, as the narrative revolves around learning about Mae as a character through the other companions, and solving Mae's personal troubles of adulthood with the help of friends.

4.4. Portal



Figure 2: Bringing the companion cube to its final destination [17]

Portal is a puzzle-platformer game developed by Valve Corporation and released in 2007. This game follows Chel, a girl who is put through a series of tests by a robot named GLaDOS, discovering along the way the secrets and the downfall of the test facility. In this game Chel must use the portal guns which allows the player to transport between places, as well as objects and puzzle elements in the game to try to progress through each level. One such puzzle element is the Companion Cube which it can be held and used to push and hold certain buttons down. Chel uses the companion cube for some of the levels before being forced to incinerate the companion cube by GLaDOS. The companion cube, though inanimate, has some narrative exposition given by GLaDOS, and is used purposefully in the game as a tool to progress puzzles, and a tool for emotional immersion as players may feel opposed to incinerating the object.

4.5. Dragon Age: Origins

Dragon Age: Origins (DAO) is a single-player role-playing game by BioWare released in 2009. Dragon Age has two sequels and uses similar game mechanics and systems as BioWare's other intellectual property, the Mass Effect series. The player creates a character choosing from race, gender and their origin. There are six different origin stories, which all lead to the player character to join an order of warriors dedicated to fight evil creatures called Darkspawn. In their quest to destroy the Darkspawn, the player character gather different companions. Companions in DAO are incorporated into the narrative and gameplay in several ways. They all have varying roles in the main narrative with several degrees of importance in the narrative, with two specific companions playing essential roles. Each of the companions have their own personality that is present throughout the game in the shape of banter, dialogue with player or other characters, reactions to player actions etc. In between areas, the

party can camp where the player can talk with each companion. These talks vary from explaining personal backstory, comments on plot development, criticism or appraisal of game choices, gossip on other companions, developing romance, etc as seen in Figure 3.



Figure 3: Conversation option with Leliana in the camp. [18]

There is an approval/disapproval system, where a counter going from -100 to 100 indicating how a character feels about the player character. The higher the counter the better the character likes the player, and vice versa. This approval is based on the companion's personal morals and preferences in reaction to the player's actions throughout the game. The player can also affect this approval counter by gifting them presents that have specific meaning for them, for example, giving a religious idol to a specifically religious companion. Depending on the level, new dialogue options will occur and there will be beneficial bonuses for combat. Additionally, for certain characters romance becomes an option which can be pursued. If the counter goes low, a companion can choose to leave the protagonist entirely or in some cases, due to a certain plot choice, cause the companion to turn on the player character and attack them.

The combat and gameplay is built around a four character party, where the player character is required to join. Therefore, the player must choose three companions to follow the player for specific areas. The player can return to camp and choose other companions if they wish. Certain companions will have specific connection to some areas, such as Alistair returning to the place where he grew up which increases the character development. While in combat, the player can directly control each of the characters in the party, or let an AI control them with instructions from the player. The player also controls what equipment the companions wear to increase their combat affinity and also decides what abilities the companion should learn for combat and how to increase their stats.

Each companion has a personal story quest, which the player can unlock during the game. These provide more insight into the companions backstory and personality. Certain quests also permanently cause a personality change, such as Alistair can become less sensitive to actions such as murder. Due to the varied background of the companions, they offer perspective into different cultures and aspects of the game world. For example, Sten is part of the Qunari, who are race with no concept of personal identity, however, by engaging in dialogue with Sten, the player learns about their culture, religion and how this affects Sten. DAO companions have depth and interaction with them is a large part of the game. They are major characters in the story and the player's choices will impact them throughout the story. They are essential to both the narrative and the gameplay.

4.6. BioShock Infinite

BioShock Infinite is a first-person shooter developed by 2K Games and released in 2013. In this game the player follows the story of Booker who is sent to find a captive named Elizabeth in the war-torn city of Columbia. In this game Elizabeth follows Booker in an attempt to escape out of Columbia. Interaction with Elizabeth is through cutscenes and non-interactive in-world dialogue where they converse without the player's input. As she follows Booker she gives hints of direction and gives Booker aid through health potions and other ailments at him. Elizabeth is used as a narrative device more so than for any meaningful gameplay. The plot revolves around her and her relationship with Booker and so is the reason for the narratives conflict and drama and can drive the player's emotional connection to the game, as players may share Booker's need to protect Elizabeth.

4.7. The Last of Us

The Last of Us is an action-adventure survival-horror developed by Naughty Dog and released in 2013. In this game the player follows Joel in a post-apocalyptic zombie infested world where he must protect and escort Ellie, a girl who may be the cure to end infestation. Much like BioShock Infinite, Ellie as a companion functions in the same way as Elizabeth, with the addition of aiding with combat as Ellie can attack enemies. What can be noted here is the affectivity of companions being highly embedded into the narrative and the emotional immersion in the form of protecting the companion from harm.

4.8. Pillars of Eternity

Pillars of Eternity is a single-player role-playing game by Obsidian Entertainment released in 2015. Like Dragon Age: Origins it revolves around controlling a party of four companions, whom the player can talk to. It shares many companion mechanics with Dragon Age: Origins as they both take inspiration from earlier role-playing games such as Baldur's Gate and Fallout. However, unlike Dragon Age: Origins, which is a fully 3D game, Pillars of Eternity is in a fixed isometric perspective with prerendered background. Only the characters are 3D, but they are also represented using a 2D avatar picture as seen in Figure 4. Due to the less complex visuals, the game had a greater emphasis on character and story development.



Figure 4: Conversation with Grieving Mother. [19]

4.9. The Walking Dead



Figure 5: Clementine witnessed what you did. [20]

The Walking Dead is an adventure game developed by Telltale Games and released in 2012. In this game the player takes the role of a convicted man who is thrown into a journey of survival as the world becomes infected with zombies. The player character, Lee, follows and joins a group of people of whom he finds companionship with, the main focus being a girl named Clementine who he finds

himself protecting. The interaction is through picking dialogue options through quicktime events, and therefore must be chosen quickly. Depending on the player's actions, the companions may passively react in the game, as shown in Figure 5 where it indicates that Clementine will remember the player's action, and there may be a consequence or a reward later in the narrative. Dialogue options gives more branches and can also change plot where the player may miss entire events. Crucial narrative decisions are also occasionally made through companions, for example, when Lee has to choose between helping two companions who clearly, will be killed if neglected. This in turn will change the plot. The companions are used heavily as narrative devices such as giving exposition about the world, giving perspective about who the player should choose to survive, or who to prioritise. The companions drive the narrative, as the plot focuses on how Lee makes decisions around the characters around him. This is especially the case for Clementine, as the goal for Lee is to protect Clementine and find her parents.

4.10. The Elder Scrolls V: Skyrim

The Elder Scrolls V: Skyrim, or Skyrim for short, is a single-player action role-playing game and the fifth game in The Elder Scrolls series by Bethesda Game Studios, released in 2011. The player takes the role of the Dovahkiin, or Dragonborn, who is by prophecy designated to fight re-emerged dragons of Skyrim in order to save the world. Skyrim has several companions and these companions have varied complexity, as some have no narrative purpose and simply follow you around and assist in combat. Some companions will not follow the player until they complete a specific quest. The player has the same dialogue options with all companions, where they can change the companions gear, dismiss them or command them to do a specific simple task, like moving somewhere or staying still. A companion will occasionally comment on the location the player finds themselves in. Certain companions are tied to quests, and will only be a companion until the completion of said quest. These companions are embedded into the micro-narrative of the quest, but cannot be customised unlike standard companions. Certain companions have slightly more dialogue options than others which adds personality, however, it is comparatively shallow in comparison with games like Dragon Age: Origins. Companions are also completely optional, as the player is capable of solely handling the combat situations, and they are not tied to the main narrative of Skyrim. Skyrim also has a marriage system where certain companions, alongside other NPCs, can be married.

4.11. Darkest Dungeon

Darkest Dungeon is a dungeon crawling role-playing game by Red Hook Studios released in 2016. The game revolves around the player character inheriting a castle from a relative who has unleashed unspeakable horrors onto the lands. The player must gather heroes to save the castle. The player character exists as the protagonist in the game, but is not on screen and instead controlling four companions. The gameplay revolves around selecting and controlling four companions to fight through dungeons. Additionally, outside of dungeon crawling, the player must ensure the physical and mental health of the companions, as they encounter horrors that affect them negatively. The companions are divided into classes and have randomly chosen quirks which affect their effectiveness in combat or have other effects, as seen in Figure 6. The companions are effectively the gameplay, but have little narrative depth outside of the emergent situations that occur.



Figure 6: A companion's quirk, selfish, is triggered. [21]

4.12. Ico

Ico is an action-adventure game developed by SCE Japan Studio and released in 2001. Ico is a game about a boy named Ico who has been taken to an abandoned castle as sacrifice. As he breaks free he finds a girl named Yorda, who he helps protect and escort through the castle in an attempt to escape together. In this game Ico and Yorda cannot converse as they don't speak the same language, and therefore much of the interaction is through physical interaction in which the player holds Yorda's hand to have her follow, or make her stay in one position as the player tries to solve platform puzzles, arranging the elements of the level so that Yorda can make her way through the environment, as only Yorda can open doors that block the way of progressing through the game. Ico can physically interact with Yorda through holding her hand to move her around or pull her up onto higher platforms. Yorda can jump onto shorter platforms and manoeuvre through small obstacles. Ico must also protect Yorda from demons that try to pull her away and into a vortex if standing idle for too long, which will cause the game to restart at the last save point. Yorda as a companion is used as an essential gameplay element as the player cannot progress the game without using her in the puzzles and to open doors. Yorda is also a part of creating emotional immersion where the player may feel a sense of protection over Yorda as she cannot fight enemies or move through obstacles without Ico's help

4.13. Firewatch

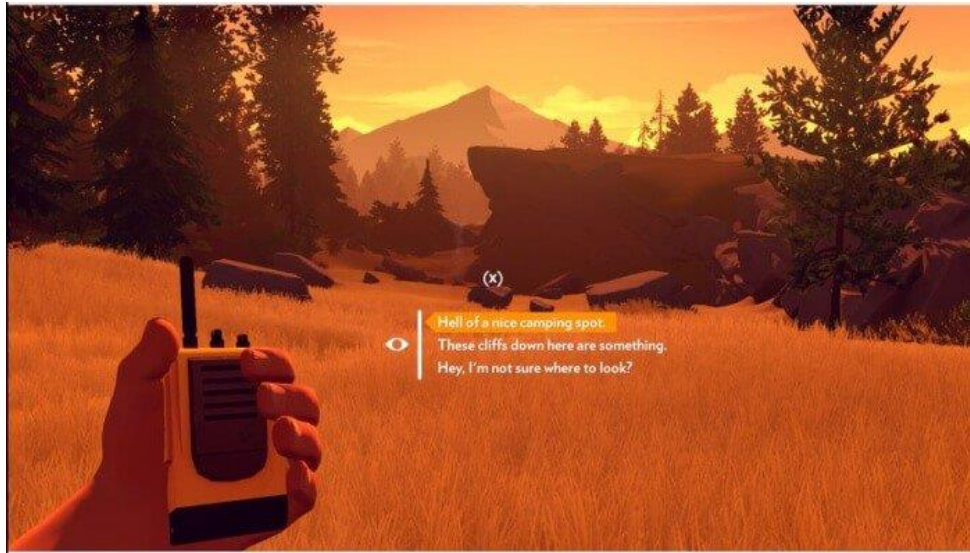


Figure 7: Player choosing between dialogue options for Henry. [22]

Firewatch is an adventure game developed by Camp Santo and released in 2016. The game follows the main protagonist, Henry, who the player character controls. The player experiences his journey of taking up an isolated job and meeting the companion, Delilah, bonding with her as they uncover the conspiracies the lie in the woods. Seen in Figure 7, Delilah is never seen in a physical form and is only interacted with through a walkie talkie, where dialogue options can be chosen. The player can choose how to respond to Delilah, report findings to her, or listen in moments of non-interactive dialogue. Delilah would often leave items in the woods useful to the player. As a companion she is the driving force of the plot and a way to make the player emotional immersion, as it suggests that Henry could meet her at some point, which to some players may be a personal goal. She's used to make different choices, a way of navigation, and exposition as she tells Henry backstory about the woods and gives detailing of her own life. Through her you learn about Henry as a character, giving perspective that he shouldn't be running away from his life. Delilah is an essential part of the narrative and without her companionship the gameplay and narrative would lose much of its meaning.

From the analysis of these games, there are several tendencies spanning across different genres. These tendencies are used to create a model to categorise companions.

5. A model of Non-Player Character Companions

Through the investigation of several games, key attributes have been extrapolated from the companions analysed. Combining it with the research, a companion model is created, see Figure 8, in order to systematise companion role and functionality in games.

Narrative purpose		Game purpose	Interactivity
Plot		Gameplay	Interactive dialogue
Optional subplots		Optional mini-games	Non-interactive dialogue
Exposition		Strategy	Customisation
Choice		Movement	Physical interaction
Perspective		Combat	Reactive interaction
Entertainment		Navigation	Gifting
Emotion		Resources	Control
Aesthetic		Puzzles	
		Reward	

Figure 8: Model of Non-Player Character Companions

This model is used to determine the attributes of a companion in a game, for example, it would be used to analyse Morrigan in Dragon Age: Origins, or Elizabeth in BioShock Infinite. It can also be used as a way to develop companions. At a core level the companions have different types of purpose and interactivity. Each core level has attributes that are further defined as:

5.1 Narrative purpose

Narrative purpose concerns the different types of narrative devices that a companion can possess, which will in turn define the importance of their role in the narrative.

5.1.1 Plot

Companions can be essential and embedded into the main plot, such as Elizabeth from Bioshock Infinite. If Elizabeth is taken out of the plot, the plot no longer works. This is opposed to companions that are only embedded into subplots of the narrative that could take form in the way of side quests or optional interactive narratives. In this way they can be used as a tool for conflict and dramaturgy, or for emotional immersion where players can empathise with the companions or in games such as Dragon Age: Origins form relationships i.e. romance, friendship, rivalry, etc.

5.1.2 Optional sub-plots

Companions can offer optional side-quests as seen in Fallout 4, where certain companions will give you a quest depending on your affinity score with them. These quests can explore the background or give better perspective on the companion, but can also be narratively irrelevant. The quests are optional as in they are not required to complete the main narrative, but instead serves as an optional addition for players who are invested in their companions.

5.1.3 Aesthetic

Companions can reinforce the aesthetic of the game, that is, the principles of form and content that the narrative abides to in order for consistency and cohesion. This is through how the companion looks in terms of its appearance, as well as the companion's backstory, skills and personality in relation to the narrative.

5.1.4 Perspective

As discussed in research and literary review, companions can create emotional immersion which in turn can affect player choices. Companions that are given a voice and opinion in the political or moral narratives in a game can give the player perspective and choices of the different moral options they may be able to choose. For example, in Mass Effect 2, the main character, Shepard, meets an alien woman named Tali, and if the player chooses to become friends with her, he learns about her species' culture and why Tali acts the way she does. A companion can also give insight into the player character, for example, in Spec Ops: The line, as the player character is not aware of his own corruption throughout the narrative, his comrades give the player insight into the player character's behaviour through commentary and actions.

5.1.5 Emotion

Companions are used as a way of eliciting emotion in the player. This is a result of a combination of the other narrative purpose attributes, where they come together to create a believable character that the player can sympathise with.

5.1.6 Choices

Companions can be used as a way of narrative choices, for example, in the game The Walking Dead, companions are used to make a decisions of how the narrative will unfold, whether it be choosing between which two companions survive, or which companion to follow in the plot.

5.1.7 Exposition

Companions can be used as a way of giving backstory to the narrative, which as stated, can reinforce the game's aesthetic or used as a tool to create perspective, influence narrative choices or eliciting emotion.

5.1.8 Entertainment

Characters give entertainment value not just for drama or gameplay, but also to add humour, banter, or light-hearted moments in order out moments in the narrative or gameplay where the player can take a break from action. This can be seen in for example, Dragon Age: Origins where non-interactive banter between companions can trigger when exploring the world.

5.2 Game purpose

Game purpose concerns the different types of gameplay that a companion can possess, which will in turn defines how embedded they are into the gameplay.

5.2.1 Gameplay

The companion can be an important and essential part of the gameplay. The gameplay can differ from game to game, such as Dragon Age: Origins where the gameplay revolves around real-time tactical control of characters fighting other characters or Firewatch where the gameplay revolves around environmental storytelling through exploration and dialogue branching.

5.2.2 Optional mini-games

Certain games have optional mini-games that involve or revolve around the companion. For example, in Night in the Woods the player has to option to help Gregg with a heavy box up some stairs which involves a mini-game.

5.2.3 Strategy

Gameplay choices can be determined through companions, such as setting up battle techniques with the skills that the players companions have.

5.2.4 Movement

The movement attributes refers to companions assisting with moving or traversing through the game world. This can be as a mount as seen in Shadow of the Colossus or it can be any other type of assistance, such as unlocking areas to move to the next area.

5.2.5 Combat

Companions can contribute to combat. This is seen in Fallout 4 where the companions accompanying the player will also assist in combat should it occur. For some companions it is their primary function. Companions can also a tool for special combat that, without the companion, the combat will difficult or futile.

5.2.6 Navigation

Companions can be used as a way of navigating the game world. For example, Elizabeth from Bioshock Infinite leads the player character and tells where to go next.

5.2.7 Resources

Companions can give the player resources that is part of the gameplay or a game system. This can be seen in games like BioShock Infinite where Elizabeth giving the player extra ammunition throughout fights.

5.2.8 Puzzles

Companions can be a tool for assistance in puzzles. Companions can help with giving ideas for how to solve puzzles, or the companion could be used itself to solve a puzzle in which cooperation is involved.

5.2.9 Reward

The reward attribute is present when the companion is connected to the scoring system of the game.

5.3 Interactivity

Interactivity concerns the different types of interaction a player character can have with the companion.

5.3.1 Interactive dialogue

Interactive dialogue is when the player can interact with the dialogue throughout a conversation. Dialogue options can take several forms such as a list of exact responses to choose from, or a dialogue wheel of different moods so the player can choose how they intend to respond to the companion. Games like *Faade* shows dialogue in the form of typing out dialogue when conversing with the companion.

5.3.2 Non-interactive dialogue

Non-interactive dialogue is when the player character can engage in conversation with non-player characters, however, the conversation has no meaningful interaction from the player. The player simply observes the conversation without participating in it.

5.3.3 Customisation

Games such as *Dragon Age: Origins* adds a layer of customisation in which the player can level up the companions, change their skills and abilities, and change their gear.

5.3.4 Physical interaction

Physical interaction is when the player character can choose ways to interact not just in the form of dialogue, for example, in *Dragon Age: Origins* where there is several physical romantic options to choose from or rivalry options where the player can kill a companion.

5.3.5 Reactive interaction

There is reactive interaction in which companions can react to player's choices without direct interaction such as facial expressions or through a text stating their reaction. For example, in *Fallout 4*, companions that have different morals will show a disapproval/approval when stealing items, which shows in the form of text at the corner of the screen stating "[Companion] *liked/disliked that*" which in turn will lower/raise their affinity towards the player character. This can also lead to greater consequences such in *Dragon Age: Origins*, companions may leave the group depending on the player's actions.

5.3.6 Gifting

A gifting system is used in various games in which items can be given to a companion in order to raise/lower their relationship with the player character in the form of affinity points.

5.3.7 Control

Players can have direct or semi control over the companions as a form of strategy This could be adding or leaving certain companions out of the players group to strategise who will work well for each other or who will work best for the next battle. Follow or stay signals could be used so that the player character can look ahead without alarming enemies. Depending on the combat style, the player can have full or partial control of companions in combat. Players can also control the way in which companions give assistance.

5.4 Overview

Figure 9 shows an example of the model applied to Elizabeth from BioShock Infinite as a companion, where an 'X' mark is checked where the attribute was present.

Narrative purpose		Game purpose		Interactivity	
Plot	X	Gameplay		Interactive dialogue	
Optional subplots		Optional mini-games		Non-interactive dialogue	X
Exposition	X	Strategy		Customisation	
Choice	X	Movement	X	Physical interaction	
Perspective	X	Combat		Reactive interaction	X
Entertainment	X	Navigation	X	Gifting	
Emotion	X	Resources	X	Control	
Aesthetic	X	Puzzles			
		Reward			

Figure 9: Model of Non-Player Character Companions to analyse Elizabeth from BioShock Infinite

As the model suggests, Elizabeth has high narrative purpose and is essential to the main plot, but falls relatively short in gameplay purpose and interaction.

6. Problem statement

Non-player character companions have been defined as:

An individual or entity, which exists in the diegesis of the game, accompanying the player frequently.

Much like Buchanan's sidekick and Campbell's Helpers in traditional media, NPCCs can be used as narrative tools for effective storytelling. Games provide an additional layer of interactivity, where NPCCs can be used for gameplay. Literature and research into companions has provided some insight into what companions are and what they are used for. The review indicates that there is little information about their functionality, and so a model of NPCCs was formed. The model can be used to categorise the type of companion in terms of their narrative and ludic attributes. There was indication that the research and literature focused on narrative importance and how companions create emotional engagement, which in turn can be used as a tool for controlling the player's motivations. This leads to the question of how the companions role in the narrative purpose could influence player choice. Therefore, the following problem statement is posed:

Can the NPCC model be used to categorise a NPCC? Does the increased narrative purpose of a companion influence the player choice?

7. Hypothesis

To tackle the problem statement, an experiment is created where two versions of a game is tested by participants. The difference between the two versions is one will have more attributes in narrative purpose (Version A) and the other will have fewer attributes in the narrative purpose (Version B). Fig (x) shows how each version of the companion character would be hypothetically be categorised.

Narrative purpose		Game purpose		Interactivity	
Plot	X	Gameplay		Interactive dialogue	X
Optional subplots		Optional mini-games		Non-interactive dialogue	X
Exposition	X	Strategy		Customisation	
Choice	X	Movement	X	Physical interaction	X
Perspective	X	Combat		Reactive interaction	X
Entertainment	X	Navigation	X	Gifting	
Emotion	X	Resources		Control	
Aesthetic	X	Puzzles	X		
		Reward			

Figure 10: The attributes of Version A

Narrative purpose		Game purpose		Interactivity	
Plot		Gameplay		Interactive dialogue	
Optional subplots		Optional mini-games		Non-interactive dialogue	X
Exposition		Strategy		Customisation	
Choice	X	Movement	X	Physical interaction	
Perspective		Combat		Reactive interaction	X
Entertainment	X	Navigation		Gifting	X
Emotion		Resources		Control	
Aesthetic	X	Puzzles			
		Reward			

Figure 11: The attributes of Version B

The experiment would be a between-group design where the participant is exposed to one version of the game. After the participant plays the game they will answer a questionnaire. See section TEST for the questionnaire and section RESULTS for test results. The questionnaire will correspond to different attributes of the model and to choices that can be made in the game. The participants responses of how they categorised the NPCC will then be compared to the hypothesized categorisation of the NPCC. Questions concerning choices made in the game is used to order to see how the different versions influenced player choice.

To test the problem statement the following hypotheses are created:

H_A : *The players' categorisation of a NPCC corresponds to the hypothesised categorisation of a NPCC.*

H_0 : *The players' categorisation of a NPCC does not correspond to the hypothesised categorisation of a NPCC.*

H_A : *Increased narrative purpose of a companion influences player choice.*

H_0 : *Increased narrative purpose of a companion does not influence player choice.*

8. Design

This section will discuss how each attribute was designed. The attributes implemented are the hypothesised categorisation of the NPCC seen in Figures 11 and 12 in Hypotheses.

8.1 Narrative purpose

The companion is designed to have higher narrative purpose, and so the following sections describe how each narrative attribute is designed in the game.

8.1.1 Plot

The plot attribute refers to the events that make up the narrative. In this case the game is heavily focused on restricting player freedom in order to make a clear and concise narrative experience. This also reinforces the test so that all participants in both conditions have similar experiences. The difference between the two versions will be the importance of the companion. In the case of version A, the companion will be made to be important to the narrative, and in version B, the companion will be nonessential to the narrative.

8.1.2 Exposition

Exposition refers to providing background story to the world and the characters. In the version A, the companion will give backstory and vital information about the world, and backstory of different characters. In version B, the companion will provide no exposition whatsoever, and will only be provided through the player character.

8.1.3 Choice

Choice refers to narrative choices in the game that the companion can contribute by giving insight into their own feelings about the situation, which may influence the player's choice. In version A, the companion will be a part of the narrative choices and voice their feelings through dialogue, whereas in version B, the companion will not give insight.

8.1.4 Perspective

Perspective refers to, as described in narrative choices, the insight that companions can give. This can be their motives, knowledge on the subject, or feelings. In version A, the companion will give perspective on choices that the player must make, on characters in the world and on different topics. In version B, the companion will give no perspective.

8.1.5 Entertainment

Entertainment refers to the amusement or enjoyment that the companion can provoke from the player. Whilst what players find entertaining is subjective, the version A companion will provide banter and humorous dialogue whereas the companion in version B will stay silent. However, the silence of the character in version B may also be a form of humour to the player.

8.1.6 Emotion

Emotion refers to the player emotions provoked from the companion. Emotions may be provoked from the attributes that make up the version A companion, that is, the importance in plot, narrative choices, entertainment and perspective may evoke emotion from the player.

8.1.7 Aesthetic

Aesthetic refers to the cohesiveness of the companion to the world in terms of the companion's style, exposition and disposition. The companion will be stylistically cohesive in both the versions, with the added cohesion in the Version A companion's exposition and disposition.

8.2 Game purpose

Due to the relatively low amount of game system and gameplay, the companion is designed around the following attributes.

8.2.1 Movement

The movement attribute refers to assistance in traversing the diegetic world. Due to the game being 2D and having to limit the overall area of the game to minimise the chance of the player getting lost, the movement attribute will be implemented in a limited capacity. In spite of this, the companion instead eases the overall experience, such as illuminating dark areas. Additionally, to increase the role of and reliance on the companion, the main character is unable to access certain areas without help from the companion.

8.2.2 Navigation

Navigation refers to the companion assisting the player navigate throughout the game. In version A, the companion is designed with the intent to assist in navigation. While each version has a non-diegetic navigational aid, version A has additional diegetic navigational aid. This is intended to increase the perceived dependency on the companion to make the player appreciate and add depth to the companion.

8.2.3 Puzzles

The puzzle attribute refers to companions assisting or being a key component of puzzles. Similar to navigation, in version A, the companion assists the player through diegetic suggestions as dialogue. This is also meant to generate player appreciation for the companion and establishing a relationship between them, in order for the player to be engaged in the emotional state of the companion.

8.3 Interaction

8.3.1 Interactive dialogue

Interactive dialogue refers to dialogue between characters where the player can choose options or otherwise has agency in the dialogue with the companion. Being a narrative focused game, most of the interaction is based around dialogue and narrative choices. The player is able to choose what to say in certain situations in version A, which is intended to strengthen the bond between player and companion. The interactive dialogue is designed to engage the player by making the dialogue feel less like going through the motions and instead feeling as an active participant and seeing the companion as an actual character which they care about.

8.3.2 Non-interactive dialogue

Non-interactive dialogue refers to dialogue where there is no input from the player. Each version of the companion will have a degree of non-interactive dialogue, however, the version B companion will not actively contribute to the conversation. Alternatively, the version B companion also has non-interactive dialogue but is intended to appear as a flat and simple character, without depth.

8.3.3 Reactive interaction

Reactive interaction refers to companions reacting to events or conversations throughout the game. Like non-interactive dialogue, in version A, the companion has more types of reactions compared to the version B companion. By reacting to choices through several avenues, such as expressions and a non-diegetic reminder where there is a text that states the companion will remember the player's action, it is intended to ensure that the player knows they have scorned or flattered the companion. Reversely, the version B companion will have subtle reactions in order to fit in with the aesthetic of the game.

8.3.4 Gifting

Gifting refers to receiving or giving gifts to the companion. In the case of this game, gifting is connected to reactive interaction, narrative choices and both types of dialogue. The ability to give a gift to the companion is meant to add agency to the player within the game and is the measure of whether the player cares about the companion enough to go the extra step to make the fictional character happy.

9. Implementation

9.1 Limitations

In order to construct a game that can have a complete narrative with characters of varying degrees of narrative purpose that confidently can portray emotions, have choices and otherwise engage the player in the narrative it was chosen to create a 2D game. Using a 2D game it is also feasible within the time scope to create original characters, rather than using pre-created asset, in turn ensuring that the game will have a consistent aesthetic. The game must have two similar versions, with only the level of narrative purpose of the companion being the key difference. Additionally, in order to not discourage potential test participants, the game length is kept to around 30 minutes of gameplay.

9.2 Game

This section describes the game's narrative, how the chosen attributes of the NPCC model is implemented into the game and how it dealt with the limitations. The game is developed using the Unity game engine for PC using original art, animations and a narrative specifically written to test for the problem statement.

The game is a narrative game where the player has a companion alongside for the entire duration. The game is an interactive narrative which follows the main character, Monty, who is trying to skip magic school in order to see his favourite band. Leah, Monty's companion, is tagging along as she is also going to see the concert.



Figure 12: The main character Monty (left) and the companion, Leah (right)

To skip school they must find four forbidden ingredients to make a forbidden spell that would allow them to cross the barrier that keeps students from leaving the school grounds. Throughout the game they need to talk to other characters and progress small platforming levels in order to find the ingredients. Once they have all four ingredients, they are able to pass through the magical barrier. After some narrative discourse, the game ends.

The game's main game system to further the narrative is the dialogue system, which consists of interactive dialogue, non-interactive dialogue and reactive interaction. The dialogue is presented through speech bubbles, which the player must press a key to read next line of dialogue. This was intentionally implemented this way to increase narrative intelligibility, as it would ensure they had

read the dialogue. Incorporated into this, is the interactive dialogue, where the player chooses from several options on what to say or do, as seen in Figure 13.



Figure 13: Monty has two different options on what to say in the situation.

Reactive interaction is shown through the expressions on the characters' faces, and in version A, for certain events there is a specific notice in the top right corner saying "*Leah will remember this*" indicating to the player that this had an impact on her.

The first arc of the game involves all game mechanics of the game and has no significant impact on the rest of the story. This arc is meant to introduce the mechanics, the location and the characters to the player, so they are comfortable with them for the rest of the game.

In version A of the game, Leah is made to be an important part of the plot. Without her, Monty would not be able to progress the journey and some of the important plot points, such as Monty learning that the concert is actually playing later, would not happen without Leah, as seen in Figure 14. She contributes to all of the events in the narrative either through dialogue or emotions. In version B, Leah does not contribute much to the plot, only that Monty pulls her into the situation with him, and tells

her to conjure magic in some events. She does not have any dialogue throughout the game but she expresses some facial emotion.



Figure 14: Leah pulling off a piece of tape on the concert poster showing that the concert starts at 8 pm, not 3 pm which Monty had been lead to believe.

In both versions there are a few narrative choices that the player can make, although there are differences between them. For example, there is a choice that the play can make in both versions there is an event where the main character has to get a certain ingredient from another character. The character says he can either retrieve another item for him that could take a while, or give him Leah's ribbon. The difference is that in version A, Leah provides insight into how she feels about the choice and the ribbon means a lot to her, whereas in version B she stays silent.

Two mini-games, seen in Figure 15, are present in the game: a jumping puzzle and a stealth puzzle. The jumping puzzle can be avoided if the player chooses to give away Leah's ribbon. This was implemented thusly to gauge the player's engagement in Leah's emotional state, as the player can avoid the trouble of the puzzle by hurting Leah's feelings. The stealth puzzle is mandatory, however, similarly to the jumping puzzle, the player can go through the extra effort of completing it twice in order to make Leah happy.

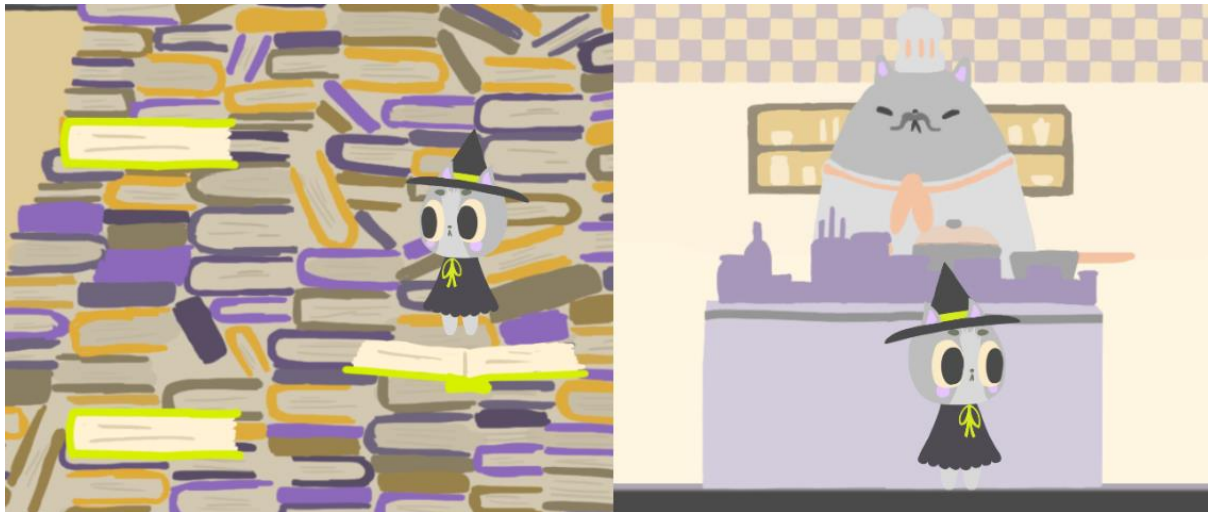


Figure 15: Jumping puzzle (left) and stealth puzzle (right)

In version A, Leah provides her perspective in situations such as the previous discussed ribbon situation, and another situation where you could get a cake for Leah. Leah would tell the player character that she would love a piece of cake since it is her favourite type of food, giving an optional quest to get the cake for her, giving optional gameplay. In version B, the same optional quest will be available to the player, but Leah shows no insight that she wants the cake.

Leah provides exposition in version A, where she tells the backstory of the school and some characters. For example, she tells Monty about the magical barrier that prevents them from leaving the school grounds, as seen in Figure 16, and she provides a little insight into her own past experiences with some of the characters. Whereas in the version B, she does not provide any exposition, only the player character provides the background story.



Figure 16: Leah explaining to Monty that there is a magical barrier around the school preventing them from just leaving the premises.

10. Test

The questionnaire will consist of demographic questions, two category questions, and 4-point Likert scales.

10.1 Events

There are two specific events in the game where the behaviour of the test participant is tracked in the game: whether the test participants give away the companion's ribbon and whether they gave the companion a piece of cake. The first choice, the ribbon is a mandatory choice, where they must choose one of the other resulting in either a dissatisfied companion or an appreciative companion.

The second choice occurs in combination with a mini-game, where after completing said mini-game, the test participants are informed that they can redo the mini-game in order to give a piece of cake to Leah, however, they are also informed that this is completely optional. This choice has three different behaviours, where each behaviour indicates a level of engagement. The first behaviour is ignoring the cake entirely and moving on in the story, the second behaviour is getting the cake and giving it to the companion, and the third behaviour is getting the cake and eating it instead of giving it to the companion.

In addition to tracking the behaviour, the test participant is asked to complete a post-game questionnaire.

10.2 Post-game questionnaire

On completion of the game, the test participant is asked to fill out a questionnaire. If the test participant played version A of the game, they get additional questions on the topic of reactive interaction as they experienced an added attribute: the *"Leah will remember this"* prompt. They are asked the following questions:

- *"When I saw the words 'Leah will remember this', it affected how I felt about my choice."* Answered with a 4-point Likert scale ranging from strongly disagree, disagree, agree and strongly agree.
- *"When I saw the words 'Leah will remember this', it affected how I would respond to Leah in the future."* Answered with a 4-point Likert scale ranging from strongly disagree, disagree, agree and strongly agree.
- *"Shortly answer how did it affect you or why didn't it affect you."* Answered by writing out an explanation.

These questions are aimed at gathering an overview of the level of engagement in test participants.

Furthermore, all test participants are asked to report their experience with both choices in the game: ribbon event and cake event.

10.2.1 Ribbon event

The test participant is asked to recall which option they chose with the question

- *“Did you give Leah's ribbon away?”* Yes/no answer

This is a measure to confirm they understood what occurred in the game. If this answer does not match the tracked behaviour, the result from the yes/no response is discarded.

- *“My relationship with Leah affected whether I did or did not give her ribbon away.”* Answered with a 4-point Likert scale ranging from strongly disagree, disagree, agree and strongly agree.
- *“Shortly answer why you did or didn't give Leah's ribbon away.”* Answered by writing out an explanation.

These two questions are designed to give insight into their perceived relationship with the companion and is used in the analysis to compare the two companion versions.

10.2.2 Cake event

In the same vein as the questions to the ribbon event, the test participant is asked to recall which option they chose with the question

- *“Did you give the cake to Leah?”* Yes/no answer

This is a measure to confirm they understood what occurred in the game. If this answer does not match the tracked behaviour, the result from the yes/no response is discarded..

- *“My relationship with Leah affected whether I did or did not give the cake.”* Answered with a 4-point Likert scale ranging from strongly disagree, disagree, agree and strongly agree.
- *“Shortly answer why you did or didn't give the cake to Leah.”* Answered by writing out an explanation.

These two questions are designed to give insight into their perceived relationship with the companion and is used in the analysis to compare the two companion versions.

10.2.3 Companion model questions

In order to compare the participant's responses of questions concerned with the NPCC model with the hypothesized categorisation of the NPCC, two category questions are used. Since the questionnaire is online, the NPCC model would be difficult for participants to grasp without briefing, so each attribute of the model would be formed into a question that the participant can answer yes or no to. For

example, in the companion model, the plot attribute would be posed as the question: “*Leah is important to the narrative.*” If participants mark yes, that corresponds to checking a mark in the plot attribute. If they answer no, that corresponds to not checking the mark in the plot attribute.

An additional question asking whether they enjoyed Leah is added in order to further understand participant responses. For the emotion attribute, two questions are used, asking whether they enjoyed Leah or whether Leah annoyed her, as those may be the two emotions that Leah could provoke. Answering yes/no to at least one of these questions will correspond to checking off the emotion attribute. Figure 17 lists each attribute and how they have been tailored as a question for the questionnaire. Under each version in the table is the hypothesised categorisation of the companion, which was first introduced in the section Hypothesis in Figures 11 and 12.

Attribute	Question	Version A	Version B
Plot	Leah was an important part of the story.	X	
Exposition	Leah provided backstory for the world and the characters.	X	
Choices	There were choices in the story that Leah was a part of.	X	X
Perspective	Leah gave a different view of the situation in some conversations.	X	
Entertainment	Leah was entertaining at times.	X	X
Emotion	1) Leah made me happy at times. 2) Leah annoyed me at times.	X	
Aesthetic	It felt like Leah was a part of the story/world	X	X
Optional subplots	Leah was important in some situations in the story.		
Gameplay strategy	I could be strategic with how to use Leah in the game.		
Movement	Leah helped with travelling around the world.	X	X
Combat	Leah assisted during combat.		
Navigation	Leah assisted with finding characters or places.	X	
Resources	Leah gave me resources that could help me in the game.		
Puzzles	Leah helped me solve puzzles.	X	
Rewards	Leah gave me points/treasure/bonuses		
Gameplay	Leah was an important part of the gameplay.		
Mini games	Leah was important in optional mini-games.		
Interactive dialogue	I could choose what to say to Leah at times.	X	
Non-interactive dialogue	I could have conversations with Leah.	X	
Customisation	I could freely change Leah's look and attributes.		
Physical interaction	My character (Monty) could physically interact with Leah. (E.g Hugging.)		
Reactive interaction	Leah reacted to events and conversations.	X	X
Gifting	I could give Leah gifts or presents.	X	X
Control	I could directly control Leah.		
Question for analysis	I enjoyed having Leah around	N/A	N/A

Figure 17: Hypothesised responses for Version A and B.

11. Results

This section will cover the results and analysis thereof.

11.1 Demographics

28 participated in the test with ages ranging from 19 to 29 with an average age of 23.51 (SD = 3.13). Out of the 28 there were 6 females and 22 males. When asked for their experience with gaming, 23 designated themselves as expert and 5 as experienced. 15 played the version B while 13 played version A.

11.2 Choice specific behaviour

Two specific choices in the narrative was tracked, the giving away of the ribbon and the gifting of the cake.

11.2.1 Ribbon

In version B, 9 gave away the companion's ribbon while 6 took the more difficult path, while in version A 4 gave away the companion's ribbon while 9 took the more difficult path.

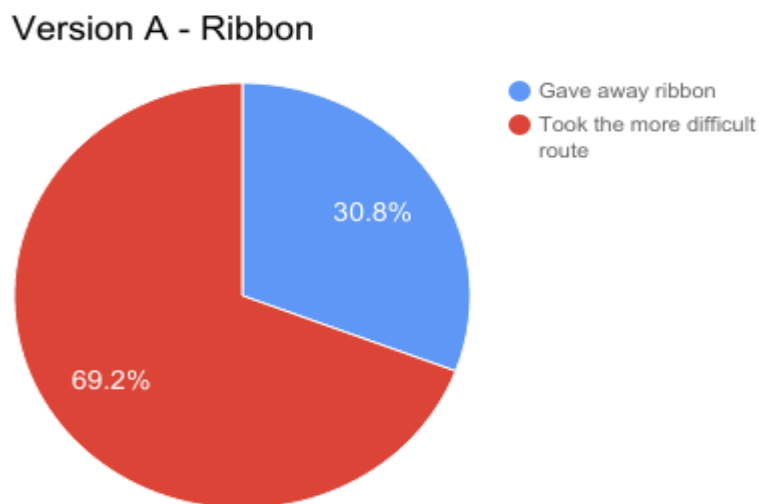


Figure 18: Pie chart of test participant's choices in Ribbon Event for version A.

Version B - Ribbon

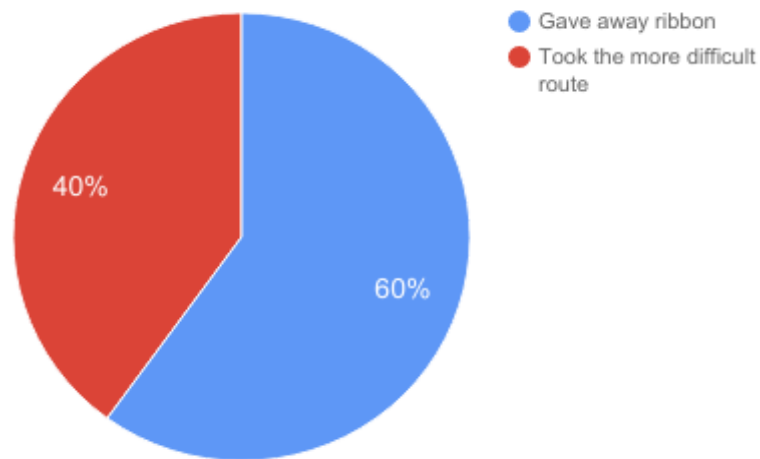


Figure 19: Pie chart of test participant's choices in Ribbon Event for version B.

11.2.2 Cake

In version B, 7 gave the cake, 2 ate the cake and 6 ignored the cake all together, while in version A 11 gave the cake, 1 ate the cake and 1 ignored the cake.

Version A - Cake

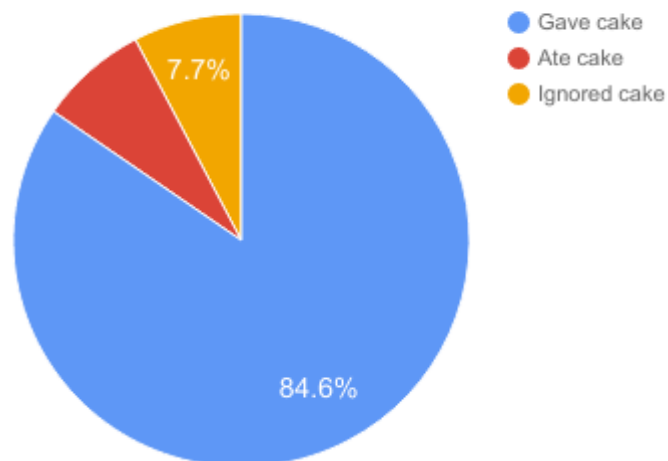


Figure 20: Pie chart of test participant's choices in Cake Event for version A.

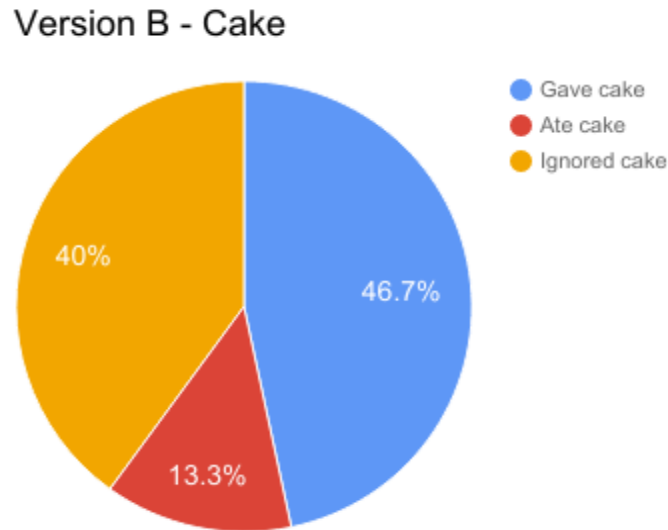


Figure 21: Pie chart of test participant's choices in Cake Event for version B.

11.3 Statistical analysis

For both choice events, the test participants were asked to score how each choice was affected by their relationship with Leah. To compare the two answers from each group, the Wilcoxon rank sum test is used to see if version A significantly scored higher in each event. Median score is used to show the average tendency of scores, and Interquartile range is used to measure the spread of the data.

11.4 Ribbon Event

Determining whether the relationship with the companion affected their choice is indicated by the median score for the ribbon event.

H_0 : The level of influence the relationship with the companion had on the choice was not significantly greater in version A for the ribbon event compared to version B.

H_A : The level of influence the relationship with the companion had on the choice was significantly greater in version A for the ribbon event compared to version B.

The median score for the cake event in version B is 2 (IQR = 1) while in version A it is 3 (IQR = 1.5). The one-tailed Wilcoxon rank sum test was performed and resulted in a p-value of 0.001155 ($\alpha = 0.05$, $\alpha < p$). Therefore, the null hypothesis can be rejected.

11.5 Cake event

Determining whether the relationship with the companion affected their choice is indicated by the median score for the cake event.

H_0 : *The level of influence the relationship with the companion had on the choice was not significantly greater in version A for the cake event.*

H_A : *The level of influence the relationship with the companion had on the choice was significantly greater in version A for the cake event.*

The median score for the cake event in version B is 2 (IQR = 2) while version A it is 3 (IQR =1). The one-tailed Wilcoxon rank sum test was performed and resulted in a p-value of 0.02 ($\alpha = 0.05$, $\alpha < p$). Therefore, the null hypothesis can be rejected.

11.6 NPCC model

This section will compare the median of the responses from the test participants for each version of the companion against the hypothesised versions of each companion, as seen in section Hypothesis.

11.6.1 Version A

Narrative purpose	Responses	Hypothesised
Plot	1	1
Exposition	1	1
Choice	1	1
Perspective	1	1
Entertainment	1	1
Emotion 1	1	1
Emotion 2	0	0
Aesthetic	1	1
Optional subplots	0	0

Game purpose	Responses	Hypothesised
Gameplay strategy	0	0
Movement	0	1
Combat	0	0
Navigation	0	1
Resources	0	0
Puzzles	0	1
Reward	0	0
Gameplay	1	0
Optional mini-games	0	0

Interactivity	Responses	Hypothesised
Interactive dialogue	1	1
Non-interactive dialogue	1	1
Customisation	0	0
Physical interaction	0	0
Reactive interaction	1	1
Gifting	1	1
Control	0	0

Figure 22: Results from version A.

11.6.2 Version B

Narrative purpose	Responses	Hypothesised
Plot	0	0
Exposition	0	0
Choice	1	1
Perspective	0	0
Entertainment	0	1
Emotion 1	0	0
Emotion 2	0	0
Aesthetic	0	1
Optional subplots	0	0

Game purpose	Responses	Hypothesised
Gameplay strategy	0	0
Movement	0	1
Combat	0	0
Navigation	1	0
Resources	0	0
Puzzles	0	0
Reward	0	0
Gameplay	0	0
Optional mini-games	0	0

Interactivity	Responses	Hypothesised
Interactive dialogue	0	0
Non-interactive dialogue	0	1
Customisation	0	0
Physical interaction	0	0
Reactive interaction	0	1
Gifting	1	1
Control	0	0

Figure 23: Results from version B.

11.7 Qualitative data analysis

Written responses were used in the questionnaire in order to understand why participants would choose some of their decisions, and to determine the differences between each version. Version B had two written responses and version A had an additional written response. The questions they responded to were:

1. *Shortly answer how did it affect you or why didn't it affect you. (Version A)*
2. *Shortly answer why you did or didn't give the cake to Leah.*
3. *Shortly answer why you did or didn't give Leah's ribbon away.*

Each question came after Likert scales of the same subject questions, discussed in the previous section. From the responses, qualitative data on participants' motives or feelings were gathered. For the question *"Shortly answer how did it affect you or why didn't it affect you"* the median response was 3 out of a 4-point Likert scale, meaning that they are on the side of strongly agreeing that Leah remembering their decisions made them think about their choices and how they would respond in the future. Participants who chose a high score commented: *"I liked her and I wanted to choose the right things to say to her,"* or stating they were her best friend and would not treat her unkindly. It would also affect participants because it was recognition of their actions. One participant said that they would try to get through the dialogue as quick as possible, but *"seeing the message made me think a little bit more about my choices e.g. getting the extra piece of cake for Leah"*. One participant scored both Likert scales as a 1, and stated that they did not see the *"Leah will remember"* text and so had no effect on them.

For the question *"Shortly answer why you did or didn't give the cake to Leah,"* 7/15 in version B gave the cake, and the median score for whether their relationship affected giving the cake to Leah, was 2 on a 4 point Likert scale. Meaning they more strongly disagree that it did. Participants who strongly agreed would comment: *"I gave her the cake because I could and I wanted to see if anything happened. I was a bit disappointed that nothing happened when I gave it to her,"* *"Because she unlocked doors for me, so I thought she should have a reward for helping"* and interested to see whether giving her the cake gave an alternate ending. Participants that disagreed that their relationship affected whether they gave the cake, and didn't not give the cake, would state: *"I like Leah, but I wanted to see the response if I ate it instead",* *"Not my kind of game, so I was rushing through it,"* or they would not realise that they could give the cake.

In version A, 11/13 gave the cake, and the median score for whether their relationship affected giving the cake to Leah was 3 on a 4-point Likert scale, meaning they more strongly agreed that it did. Participants who strongly agreed would have responses such as: *"[I] thought [I] should do something nice to redeem myself,"* and *'She's my best friend, who loves cake. [A]nd I wanted to make her smile. Why wouldn't I give it her?'*. Participants who did not give the cake strongly disagreed that their relationship affected why they did not give the cake, giving such responses as: *"I really just wanted to see what Monty would say, but I felt a little bad after I chose the to eat it,"* and one participant only noticed it was an option after leaving the puzzle area and did not want to go back to do the quest.

For the question *"Shortly answer why you did or didn't give Leah's ribbon away,"* 10/15 gave the ribbon away, with a median score of 2 on a 4-point Likert scale, more strongly disagreeing that their relationship affected giving the ribbon away. Participants who gave the ribbon stated responses such as: *"Seemed to be the fastest option," "In gaming terms it seemed the easiest. In real life terms it was the safer option to reach my goal. Had she spoken out about it my choice would probably have changed."* *"It was the quickest way of completing the quest,"* whereas people who did not give the ribbon started responses such as: *"I mainly just wanted to see what the history-classroom looked like. Seemed like more of an adventure than the ribbon-option," "Firstly it is not mine to give and secondly I wanted to take the "harder" path I guess."* whereas other participants were unsure of why they made their choice, or misinterpreted the situation.

In version A, 5/13 gave the ribbon away, with a median score of 3 on a 4-point Likert scale, more strongly agreeing that their relationship affected giving the ribbon away. Participants gave the ribbon stated responses such as: *"didn't care enough about the characters to affect my decision in this matter," "I wasn't really emotionally attached to the game at this point."* However, this participant did become emotionally attached and so did give the cake to Leah in the latter part of the game, stating he wanted to *"reset"* the bad decision he made for Leah. Participants who did not give the ribbon away had varying responses, such as: *"It was very important to her, belonged to her grandmew! There her things away to some cat she doesn't like!," "Can't give my friend's ribbon away to a scummy cat nib dealer"* but there were also participants that also misinterpreted or rushed through the situation and so responded: *"I misunderstood that you would give her ribbon to the other cat, I thought it was that I would make her go get it alone. But I still wouldn't be mean to Leah, either way"* or *"Didn't notice that there were multiple options, wouldn't have given him the ribbon if i saw it."*

12. Discussion

In terms of answering the problem statement:

Can the NPCC model be used to categorise a NPCC? Does the increased narrative purpose of a companion influence the player choices?

We found that test participants who played version A would more often aim to please the companion, even at the cost of their own convenience, as was measured through their behaviour and questionnaire answers. Additionally, they scored significantly higher than the test participants playing with version B when asked about whether their relationship affected their choice. The qualitative data suggests that test participants who played version B were less engaged in the plot or characters. This suggests a more fleshed out character in version A was able to influence their choices, when the choices regarded the companion's well-being.

Furthermore, when asked to consider the attributes for each version of the companion, the test participants responded with more attributes to the version A companion. The test participants assigned the same narrative purpose attributes to the version A companion as hypothesised, whereas version B companion had fewer than assigned in the hypothesised categorisation. This indicates that the test participants did not take notice of the version B companion to the extent that test participants correctly identified the version A companion. This signals that the NPCC model is more accurate on deeper character with more attributes, however, in either case the test participants' perspective on the characters correctly viewed fewer attributes on the version B companion and more attributes on the version A companion. A difference to take note is that participants overall did not think that the version A companion assisted in navigation, whereas it was hypothesised that the companion does. This could be because players can miss the dialogue where Leah gave navigation assistance. On the other hand, participants thought that Leah assisted in navigation in version B. However, the Version B companion was implemented to give no assistance. There were no questions in which to help understand why participants thought the companion in version B gave navigation assistance.

The significant influence of companions indicates that companions can be used as effective rhetorical devices for interactive narratives, with the caveat that they cannot be a flat character. However, with games varying greatly in types of narratives and gameplay, it is up to the developer to gauge which attributes fit best with their game, as there are no objective rules.

13. Conclusion

A review of the current research on companions in video games resulted in a sparse overview. The focus was either investigating the effect companions could have on the player on an emotional level or focused on design tips for writing any type of character in games. With inadequate existing research, an analysis of games with companions was conducted, investigating their role in the narrative and gameplay while exploring how interactivity is used. This led to the following definition of non-player character companions (NPCC):

An individual or entity, which exists in the diegesis of the game, accompanying the player frequently.

This analysis presented recurring features and tendencies in the games across the genres investigated, and from these a model was created using three dimensions: narrative purpose, game purpose and interactivity. Under each dimension there are several attributes a companion could possess or influence. This descriptive model is intended to be used to categorise companions to get an overview of the different types of companions. As the focus of current research is on the emotional engagement, we wanted to investigate how different attributes of the model could affect player choices in a game with a focus on the narrative purpose dimension. The following two part problem statement was created:

Can the NPCC model be used to categorise a NPCC? Does the increased narrative purpose of a companion influence the player choice?

To answer the problem statement two versions of a game were designed with a companion. The game would be the same except for the companion's level of narrative purpose would be higher in one, version A, compared to the other, version B. In both versions of the game there were two events where the player could choose to hurt the companion's feelings for a quicker path or taking a slower route. This is intended to show that if the test participant did not choose to hurt the companion's feelings it could indicate emotional engagement.

The game was played by 28 test participants, with 13 playing version A and 15 version B. Using a questionnaire they were questioned on their relationship with the non-player character companion and asked to answer questions where each question correlated to an attribute in the model which would be compared with a hypothesised version.

Version A with the higher level of narrative purpose scored significantly higher than version B when asked if their relationship affected their choices. This indicates that companions with higher level of narrative purpose are able to influence the player more than companions with low level of narrative purpose. The test participants largely did correspond their answers to the hypothesised version, with few exceptions. This indicates that to an extent, the model can categorise companions consistently.

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