Exploring the Design of Companions in Video Games

Elizabeth Bouquet
LMU Munich
Munich, Germany
e.bouquet@campus.lmu.de

Ville Mäkelä
LMU Munich
Munich, Germany
ville.maekelae@ifi.lmu.de

Albrecht Schmidt
LMU Munich
Munich, Germany
albrecht.schmidt@ifi.lmu.de

ABSTRACT

Companions are game characters that accompany the player throughout a longer part of the gameplay, complementing their character or skill set, and serving as part of the narrative. Because of their significance in many games, companions can have a great impact on the player experience. In this paper, we take a broad, practical look at the design of companions. We propose a design space for companions that comprises seven main aspects: *appearance*, *sentience*, *individuality*, *behavior*, *communication capabilities*, *relation to the player*, and *significance*. We discuss each of these aspects in detail, and analyze how they have been applied in existing video games. Our work demonstrates the diversity of game companions and serves as a supporting tool for companion design.

CCS CONCEPTS

• **Applied computing** → **Computer games**; • **Human-centered computing** → **Interaction design theory, concepts and paradigms**.

KEYWORDS

Companions, Video Games, Non-Player Characters, Game Design

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1 INTRODUCTION

The word *companion* originates from the old french term *compaignon*, which literally means "one who breaks bread with another" [10]. For decades, companions have appeared as sidekicks or allies in popculture and literature: Sherlock Holmes and Dr. Watson[1], Frodo and Samwise[2], Batman and Robin[3], Rick and Morty[4]. While sidekicks assist the central character and complement their abilities, and allies can have equal abilities to the main character, companions can take on both of these roles [4, 14, 55].

In video games, there have been plenty of companions, many of which have become well-known and beloved by fans: *Ellie* from *The Last of Us* [37], Kratos's son *Atreus* from *God of War* [45], *Dogmeat* from *Fallout 3* [47], *Daxter* from *Jak & Daxter* [36], and the fairy *Navi* from *The Legend of Zelda: Ocarina of Time* [40]. These companions can take on very different forms and serve various functions in their respective games. What the companions have in common, however, is their enduring presence in the game.

Current research in this space has largely focused on understanding the broader concept of non-player characters (NPCs) and attempted to categorize them based on their function [42, 61, 63–65]. Work specifically targeting companions and their design is scarce. However, a closely related work is that by Emmerich et al. [14]. They investigated the influence of companions on players' experiences and expectations, and identified factors that are critical in designing successful game companions.

In this paper, we build on the work of Emmerich et al. [14] but we offer a more practical outlook on the critical design aspects of companions. First, we propose a new design space which attempts to classify the design aspects in a descriptive manner. Second, we explore these aspects in depth and analyze how existing games with companions to better understand how these principles are currently applied in the games industry. Our work therefore provides an overview and an analysis of current companion designs in games, and provides a tool for companion design.

2 BACKGROUND

2.1 Non-Player Characters and Companions

In addition to the player character(s), video games can contain a multitude of other characters. These are referred to as *non-player characters* (NPCs). Warpefelt et al. define an NPC as "every kind of character found in the game that is diegetically represented in the world, is not controlled by the player, and that is actively involved in portraying some kind of character" [65].

Researchers have categorized NPC types by their purpose. Warpefelt et al. described four metatypes for NPCs: functions, adversaries, friends, and providers. NPCs can also be a mix of these types [42, 65]. Warpefelt & Verhagen further defined eleven types of NPCs, ranging from merchants to combat challenges and allies [64].

Pinchbeck introduces the more specific term of a *persistent NPC*, which refers to NPCs that appear repeatedly throughout the game or have a clear role in the world and plot. While persistent NPCs can also serve as adversaries for the player, they are mainly used as allies. As such, they can serve as goal-givers or tutors, they can deliver a certain atmosphere, or they can provide an emotional layer

[1]Fictional characters created by Sir Arthur Conan Doyle, 1886
[2]Fictional characters created by J.R.R. Tolkien, 1954
[3]Fictional characters from the comic series Batman published by DC Comics (DC Entertainment)
[4]Fictional characters from the TV show Rick and Morty by Justin Roiland and Dan Harmon

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to the game [42]. For example, *Ellie* from *Last of Us* [37] provides the main goal for the player character, *Joel*, and also delivers an emotional layer, as the story revolves around the bond between Ellie and Joel.

Warpefelt et al. define *companions* as persistently accompanying NPCs that support the player as allies and are controlled by the player [64, 65]. However, the last part of this definition is problematic. Especially in games today, there are many examples of characters that persistently accompany the player and that serve many functions in the game, but that are not controlled by the player. For example, *Elizabeth* in *BioShock Infinite* [22] and *Ellie* in *The Last of Us* [37] are completely autonomous. There are also companions that the player has only nominal control of. For example, *Atreus* in *God of War* [45] is otherwise independent, but the player can command Atreus to shoot arrows at enemies.

Consequently, Emmerich et al. define companions as NPCs—human or non-human—which accompany the player character over a large amount of time during the game, and they can act as sidekicks or allies [14]. We believe that this definition is more suitable, especially considering the frequent use of non-controllable companions in modern games as well as companions that might take non-human forms, as discussed later. Hence, in our work we will follow this definition.

2.2 The Importance of Companions

Because of their (nearly) continuous presence throughout the gameplay, companions are the NPCs with the highest influence on the player's experiences and expectations [14]. They are an essential part of the player experience by ensuring that the player has fun and a sense of immersion in the game world [55].

The *believability* of a game character plays a significant role. The character has to match the player's expectations in order to be perceived as a believable character [27]. Believability is an ambiguous term that has different interpretations. According to Lankowski and Björk [26], believability is dependent on the following aspects: sense of self, awareness of surroundings, visual body damage and dissectible bodies, initiative, emotional attachment, contextual conversational responses, goal-driven personal development, and own agenda. On the other hand, Lee and Heeter [27] argue that the believability of NPCs in general is determined by their visual appearance, emotions, personality, motivations, and social relations.

Furthermore, the emotional bond between the player and the companion character affects the companion's believability. Emotional attachment to digital characters can be as real and strong as to living beings [2, 3]. At best, players feel connected to game characters, emphasize with them, and even absorb the character's goals as if the goals were their own [3, 20].

3 ASPECTS OF COMPANION DESIGN

In this section, we propose and discuss a new design space for companions, consisting of seven main aspects (Table 1). To formulate the design space, we followed a multi-step process.

We searched the literature for existing design spaces and characteristics of companions and NPCs. Based on this, we began to identify design components relevant to companions (based on, e.g., [14, 26, 27]). We further complemented this with a broad analysis of published games with companions (using random sampling from a large list of known games with companions), to identify any missing components. This way, we identified 18 design characteristics. Two researchers then conducted thematic analysis to group related characteristics together. We furthermore brainstormed about descriptive names for each group. The analysis was continued until both researchers agreed on the final design space.

Closest to our work is the design space proposed by Emmerich et al., consisting of 16 design characteristics spread across six main categories [14]. Our work is an iterative improvement over this design space. In particular, we improve on this by adding missing components (e.g., auditory appearance of companions over visual appearance), and re-gategorizing and re-naming design aspects to avoid unspecific and convoluted design aspects (e.g., *General Characteristics* and *General Capabilities*).

Through this process, we arrived at a design space of seven major design aspects: *appearance*, *sentience*, *individuality*, *behavior*, *communication capabilities*, *relation to the player*, and *significance*).

It is worth noting that these design aspects are not isolated. They may overlap and often depend on each other, as will become clear in the following discussion. Rather, the aspects should be seen as different *perspectives*—different ways of looking at the design of companions. In the following, we discuss these aspects in relation to existing literature and particularly in relation to how these design aspects are put to use in existing games.

3.1 Appearance

A companion's *appearance* is one of their crucial features; players often perceive the companion's appearance first, and based on that, they make assumptions about the companion's abilities and interactions [27].

Appearance includes every visual aspect of the companion, including gender, age, ethnicity, status, observable behavior, and animations [14]. However, it is important to add here that while companions often appear as humans [22, 37, 38, 54, 57], they can take on entirely different forms. Hence, appearance not only refers to human aspects, but also aspects like size, shape, and race and species (e.g., alien races and fantastic beings). Just some examples of the diverse appearance of companions include animals (e.g., horses [8, 18, 19], dogs [49, 53]), robots and androids [21, 28, 59], aliens [28, 31], holograms and projections [5], fairies and spirits [32, 40], fantastical beasts [35, 44], and even inanimate objects like the Companion Cube in the *Portal* series [58, 59].

In addition, Pinchbeck [42] differentiates between characters who are visually present in the game world and those who are integrated by other means, for example, by only having an auditory presence. Characters without a visual presence may still have a significant impact on the game and the player experience.

Building on this, we are not aware of companions that do not have a visual presence at all. However, there are various examples of companions who appear in different forms and where auditory presence is emphasized. In *Metal Gear Solid V: The Phantom Pain*, the player is frequently assisted during missions via radio by two companions, Kaz and Ocelot [24]. They provide information on things that the player sees, tell stories, and guide the player. Both characters appear visually in cutscenes and in the player's base in

Table 1: Proposed design space for game companions. Original design space by Emmerich et al. [14] on the left, our revised design space on the right, along with our reasoning for the proposed changes.

Design space by Emmerich et al. [14]		Proposed design space		
Category	**Characteristics**	**Category**	**Characteristics**	**Reasoning for changes**
General Characteristics	- Appearance - Personality - Own Agenda	**Appearance**	-Visual appearance -Auditory appearance	Appearance–the forms in which the companions are perceived—is perhaps the clearest characteristic of a companion, thereby deserving its own category. Visual appearance is critical as its often perceived first by players [27]. Appearance can also take other than visual forms (e.g., audio) [42], which we cover here. Furthermore, we want to break down the category of *General Characteristics* into more descriptive components. The other characteristics from that category (*personality* and *own agenda*) can be placed elsewhere.
General Capabilities	-Awareness -Emotional Intelligence -Social Relations	**Sentience**	-Awareness -Emotional Intelligence -Social Relations	We again want to avoid a generic category *(General Capabilities)*, and instead formulate a more descriptive name. Because the original characteristics in this category relate to the companion's ability to perceive, understand and feel the world around them, we group them under *Sentience*.
–	–	**Individuality**	- Personality - Own agenda - Background	Here, we add a new category dedicated to the degree to which the companion is their own, individual "person". *Personality* is one of the most crucial characteristics for any believable NPC [26, 27]. Logically, the companion's *agenda* (their goals and motivations) link to personality, and it is another important characteristic [26, 27]. We furthermore complement this category with a new characteristic, *background*, by which we refer to their backstory, past, and prior experiences (which strongly link to the character's personality and motivations).
Behavior	-Context Sensitivity -Autonomy -Initiative and Activity	**Behavior**	-Context Sensitivity -Autonomy -Initiative and Activity	*No changes*
Communication Capabilities	-Communication with the player -Communication with other NPCs	**Communication Capabilities**	-Communication with the player -Communication with other NPCs	*No changes*
Relation to the Player	-Interdependence -Power Dynamics -Obligations	**Relation to the Player**	-Interdependence -Power Dynamics -Obligations	*No changes*
Significance	-Story Relevance -Gameplay Relevance	**Significance**	-Story Relevance -Gameplay Relevance	*No changes*

between missions, but during gameplay their presence is largely audio-only. Similarly, in the *Halo* series [5], the player is assisted by an artificial intelligence, Cortana. She often speaks to the player without a visual form, but appears as a hologram in cutscenes.

In summary, a companion's appearance can take nearly endless forms. While humans are typical companions, it is also common to see animals, aliens, and supernatural beings, among many others. In this section, we also want to emphasize that appearance does not only cover visual aspects but can also take other, like auditory, forms. Hence, companions do not even need to physically accompany the player character, but may also be present through auditory, mental, or magical channels. In terms of the companion's appearance and, by extension, presence in the game, it is important that the companion's appearance makes diegetic sense and is consistent with the game world.

3.2 Sentience

Sentience relates to the companion's abilities to perceive, feel, and understand things. This includes *awareness* (e.g., awareness of environments and events), *emotional intelligence* (capacity to understand and produce emotions), and the capacity to understand and build *relationships*. In a way, this design aspect could be seen as the extent to which the companion is able to *process and produce* things.

According to literature, believable NPCs should be *aware* of the events that happen around them, and also aware of their own self, e.g., if they are in danger or something else happens to them [14, 26].

In existing games, there are plenty of companions that are aware of their surroundings and events. This can materialize in various ways but there are certain things that are common. Companions often comment on the things that they and the player come across

(e.g., by expressing awe or disgust, or giving background information), they guide the player in the right direction (indicating that they are aware of where they are and know where to go), or they offer their help in solving a problem (indicating that they understand the situation) [22, 37, 38, 45, 59].

Self-awareness, on the other hand, is materialized in rather basic ways. For example, *Atreus* in *God of War* [45] sometimes gets grabbed by enemies, and calls the player character for help (expressing awareness that they are in serious danger). *Yorda* in *Ico* [54] covers her eyes when she is in danger. Animal companions might run away when they are scared [19].

Showing and reacting to *emotions* according to the player's expectations can underpin the perception of the companion as a personhood and strengthen the bond between the player and the virtual character [26]. Many companions show deep and extremely human-like emotions in cutscenes and predefined sequences [17, 22, 37, 38, 45, 57]. This is partly explained by the improvements in motion capturing technologies and processing power, as game characters (companions included) are often played by real actors. Still, some technologies existed before that also achieved impressive results with facial expressions and emotions [9].

There are also more unconventional examples of how companions might display emotions. *Yorda* in Ico [54] communicates her emotional states with different gestures and postures. As already mentioned, she covers her eyes with her hands when she is scared [54]. The robot *Wheatley* in *Portal 2* looks like a mechanical eyeball and moves along a pre-installed railtrack. Despite this seemingly limited appearance, *Wheatley* is able to demonstrate an impressive range of emotions, like fear, by moving its body and eyelids [59].

The above examples, however, are focused on predefined, scripted emotions. During dynamic gameplay, games tend to lack emotional variety and flexibility [14]. This would require adaptive emotional behaviors [43], which are complex to implement [41].

Social relations are also a crucial characteristic of companions. Players tend to perceive companions more positively when they have social relationships with other characters (other NPCs) as well as the player [27].

Analyzing companions in existing games reveals that companions' social relations focus heavily on the player character, which is logical. The companion's relationship with the player is often fixed, i.e., it develops a certain way and the player has no influence on it [22, 37, 38, 44, 45, 50–52]. In other games, the relationship develops based on the player's choices. This may even lead to romances or a falling-out between the characters [11–13, 31, 47, 49].

The relationships that companions have with other NPCs seem to not be particularly well explored. Companions might not have any real relationships or interactions with other NPCs besides fighting them [47, 49], or their relationships with other NPCs might be exclusively communicated via cutscenes and other fixed narrative points [37, 38], without the possibility for the player to affect them.

In summary, the *sentience* of companions often appears to be very high, for example, when companions represent highly skilled and intelligent humans. However, their sentience is largely based on fixed narratives (cutscenes and dialogue), or simple rule systems (e.g., call for help when in danger). In the future, we might expect to see the sentience of companions and other NPCs expressed in more dynamic ways. We furthermore point out that in most games, companions do not have diverse or dynamic relationships with any other characters besides the player. Exploring this dimension might be an interesting direction in future games.

3.3 Individuality

Individuality integrates all facets that give a game character a unique personhood. This category includes their *personality* (defined personality traits that are also able to evolve), their *own agenda* (goals that the character pursues) and their *background* (their background story, existing knowledge, and prior experiences).

A *personality* can be defined as a set of unique qualities of a character. These qualities can be seen in relation to the model of psychological traits [27]. Depending on the level of each trait, the personality colludes differently with the player character [41]. It is therefore worth noting that one might consider not only the personality of the companion, but also the personality of the player character and other NPCs, and think about how the interactions between these different personalities might work.

Many companions have well established personalities, and there are also many pairs where the interactions between the personalities of the player character and the companion form an integral part of the game, resulting in friendship, conflict, or banter. For example, in *Jak & Daxter* [36], the main character *Jak* is more introverted and reserved, while the companion *Daxter* is more extroverted and humorous, complementing *Jak*'s personality. *Joel* and *Ellie* [37] and *Kratos* and *Atreus* [45] are examples where a young, curious and sometimes irresponsible companion often irritates the older, more serious and cautious player character.

There are also companions that do not have a clear personality. These tend to be less sentient and less capable companions, like horses and other animals [7, 18, 19, 47, 49]. Regardless, well defined personalities can still be encountered in more unconventional companions. For example, the robot *Wheatley* in *Portal 2* [59] often demonstrates its quirky humor and helpful nature.

In games where the player character's personality and choices can be influenced, there is an interesting aspect of how interactions with different companions play out. Different companions have different personalities, for example, some can be objectively evil and some good, resulting in certain companions approving and some disapproving of the player character [11, 11, 12, 31, 47, 49]. This variety in companions might help build interesting relationships with companions and create interesting choices, where not every companion can be pleased.

The companion's *own agenda* may also be a crucial characteristic, as personal goals make the character more believable [26]. The companion's agenda is often the reason for why they accompany the player character. This agenda can be the same as the player character's (e.g. escape from a castle or defeat a threat) [21, 28, 35, 45, 54], or the companion may believe that accompanying the player character takes them closer to fulfilling their own goals [11, 31].

As a new characteristic, we also include *background* as a component of *individuality*. This is because background is not well covered by any other aspect, and we know from psychology that our background (our knowledge, relationships, and experiences) shapes our personalities and motivations [33], thereby making it a logical addition here.

Similar to personalities and agendas, the companions' *background* is often well defined. This background is not always entirely clear in the beginning; instead, players learn more about the companions as the game progresses. In some games, the companion's background is intertwined with the player character's, and learning more about this background may be a major part of the story [45]. There are also situations where players might run into old acquaintances of the companion, or visit their home town, thereby learning more about the character [50, 52]. In contrast, sometimes we do not know or learn much about the companion's background, which may be a deliberate design choice to create a certain aesthetic and mood (e.g., a sense of mystery) [54].

In some games, companions have certain conditions under which their agenda and background become more clear. In the *Mass Effect* and *Dragon Age* games, companions often have their own storylines, which may become available if the player character builds a positive relationship with them [11–13, 31].

In summary, a companion's *individuality* is what distinguishes it from other game characters, as it provides a personality that can complement the main character's personality, as well as an agenda that drives its behavior. The individual background story can influence both the personality traits and the internal goals, and provide points of interest for the story and lore. Many companions in games have well defined personalities as well as backstories and agendas, although the latter two might not always be clear in the early game. Through individuality, players can understand the companion and empathise with them.

3.4 Behavior

Behavior includes the character's *context sensitivity* (how well they adapt to changing situations and contexts), *autonomy* (to what extent the companion's behavior can be controlled), and *initiative and activity* (to what extent the character acts on their own) [14]. As such, the companion's overall behavior depends on their artificial intelligence (AI), scripted scenes, and gameplay functions (controls).

The implementation of believable behavior patterns becomes more complex with the increasing complexity of the mechanics, narrative and environment of games [1, 25, 29]. According to Warpefelt et al., companion characters are the most complex NPCs [63], as they are present in diverse situations and should understand social structures, goals, and situations [60] (although, as becomes evident in this paper, companions do not always have to be complex).

However, the adaptive behavior of characters, especially their social behavior, may still not be mature enough to convince players to perceive the character as a personhood throughout the entire gameplay [65]. Despite this, many modern companions are seemingly naturally behaved and perceived positively by gamers, although a closer look at their behavior might reveal rather simplistic conditions under which they operate.

Looking at *context sensitivity*, many companions are sensitive to the current situation at least on a basic level. This is perhaps most clearly seen when transitioning in and out of combat. Some companions, like the horse in *Red Dead Redemption 2* [19] and *Roach* in *The Witcher 3: Wild Hunt* [8], may get startled and run further away to escape the fight. Combat-oriented companions automatically switch to combat mode when enemies are alerted, and switch back to default mode after the battle (e.g., by holstering their weapon, making a comment) [12, 15, 16, 31, 47, 49].

Characters can also be context-sensitive in other ways. For example, in many games, if the player character attempts to sneak undetected, the companions will follow and get into a crouched position and aim to hide behind objects [37, 38, 47–49]. Similarly, as already discussed, some characters may understand that they are in danger and call for help [45], or understand that another NPC or the player character is in danger and help them (relating to an earlier characteristic of awareness).

With regards to *autonomy*, companions can be fully autonomous, semi-autonomous [55], or they may lack autonomy completely, being fully dependent on player input. While fully autonomous characters are able to act completely independent from the player, the behavior of semi-autonomous characters can be influenced by the player to some extent or at certain points in the game [30]. Companions that lack autonomy are often seen in turn-based games, where players control each character in turns (e.g., [51, 52, 56]). *Initiative and activity* is heavily linked to autonomy. Generally, the more autonomous a character is, the more they take initiative.

In summary, in this section we demonstrated that companions can vary dramatically in their behavior, which is dependent on their contextual awareness and autonomy. Some companions are not autonomous at all and instead act only on player input. Some companions handle basic interactions themselves and take initiative on certain things, like engaging with enemies. Lastly, some companions are completely autonomous and outside of the player's control. All of these approaches are valid, but they do have a significant effect on the game's other aspects, as is demonstrated in the other sections of this paper.

3.5 Communication Capabilities

Communication capabilities refers to the character's ability to *communicate with the player*, as well as *with other NPCs*. This includes their ability to use natural language but also other means of communication. Natural language is an important quality for a believable character [26]. Natural language includes verbal communication but also non-verbal communication like movement, postures, and facial expressions. As such, this aspect is linked to the character's appearance, e.g., their animations and facial expressions.

Human and human-like companions might have a tendency to be more capable of natural language [22, 37, 38, 45, 57], but there are also more unconventional examples. For example, *Wheatley* from *Portal 2* [59] is a sphere-shaped robot without limbs and with one giant lens (its "eye"). Yet, it is still capable of natural, human-like, non-verbal communication through its movement and "facial" expressions. There are also counter-examples of verbally capable human companions. *Yorda* from *Ico* [54] and the player character do not speak the same language, and so their verbal communication is minimal, mostly consisting of calling each other's name. Instead, they focus on non-verbal communication, like pointing at things.

Good examples of companions' advanced verbal communication capabilities are found in many BioWare's games, like the *Mass Effect* [31] and *Dragon Age* [11] series. The companions have deep dialogue trees, which are influenced by a number of things, like the player's actions throughout the game (the companion might agree

or disagree with them), the player's abilities and knowledge, and the player's prior interactions with the companion. These conversations may significantly affect the player's and the companion's perceptions of each other, and may even open up new possibilities in the story. Two players might therefore have a very different relationship with the same companion.

Lankoski and Björk [26] talk about *contextualized conversational responses*, by which they mean a character's ability to adapt their responses based on all relevant game states. Characters in most games lack such contextualized responses. For example, characters in *The Elder Scrolls IV: Oblivion* [46] are not aware of the current situation (e.g., talking to them in the middle of the battle has no effect on the conversation; the game effectively stops while a conversation is ongoing), and asking the same questions always results in the same response (e.g., they are not aware that the conversation was already had).

However, continuing with our prior examples of *Mass Effect* [31] and *Dragon Age* [11], the companions in these games seem to handle contextualized conversational responses rather well (or at least they tend to avoid situations where the lack of contextualization becomes obvious). We already noted that the conversations are influenced by many factors. In addition, most conversation points can only be had once (avoiding repetition), and in cases where the same question can be asked multiple times, the characters have several possible responses, some of which might be triggered only after repeated attempts. The companions also do not engage in conversations when it is inappropriate (e.g., mid-combat).

It is also relevant to look at how companions communicate with not just the player, but with other NPCs. Here, we observe largely scripted interactions. For example, companions in *The Last of Us* series [37, 38] talk to other NPCs at fixed points in the game (e.g., by having small talk or by greeting an acquaintance). An interesting case is the fairy *Paimon* in *Genshin Impact* [32]. The protagonist, controlled by the player, is almost completely silent throughout the game. Instead, it is Paimon who handles the interactions with other NPCs and moves the conversations forward.

Besides such scripted encounters, we are not aware of games where companions have particularly sophisticated interactions with other NPCs. In turn, there are many companions who do not communicate with other NPCs at all (or do so very rarely). These tend to be companions that do not so much serve a narrative purpose, but that focus on, e.g., providing assistance in combat [7, 47–49].

In summary, many companions, especially human-like companions, communicate with the player using natural language. Most such communication in games is implemented via scripted scenes. Some companions are more sophisticated and base their responses on numerous factors, adding a certain level of contextual awareness. However, companions that interact with other NPCs (beyond scripted cutscenes) are very rare. Therefore, it could be worthwhile to explore more dynamic forms of communication between companions and other NPCs.

3.6 Relation to the Player

Relation to the Player refers to the dynamics and relationship between the companion and the player character. This particularly covers three characteristics: *interdependence* (dependency between the player and the companion, how their abilities complement each other), *power dynamics* (how their powers are divided and if one of them is more dominant), and *obligations* (social connection between the player character and the companion) [14].

We first look at *obligations*. Especially in games where there is only one companion, this characteristic is often integral to the game's story. The player character is commonly tasked with protecting, escorting, or otherwise helping the companion [22, 35, 37–39, 44, 45, 54], and the story then revolves around their shared journey. In these cases, the player character is more clearly the one who has an obligation to the companion. An important point, though, is that this obligation may simply be a starting trigger to their relationship, and the characters often develop a deeper connection during the game. Therefore, their obligations often evolve into a mutual sense of responsibility for each other.

In turn, companions may have an obligation to the player character. For example, the companion may feel indebted after the player character has helped or saved them [12, 31]. Some companions require that the player character acquires a certain status or completes certain tasks before they join as companions [47, 49] (e.g., the companion begins to admire the player character and will want to travel with them). Certain companions may simply be hired [6, 47, 49], creating a financial or professional obligation. There may even be companions that have a sinister agenda, thereby faking their obligation to the player character [34].

It is also common that the player character and the companion have a shared obligation. This could happen through sharing similar goals, like stopping a major threat [21, 28] or escaping [54], or through a shared history (e.g., childhood friends). It is worth noting here that the characters' obligations can be multi-faceted. For example, in *Ico* [54], the characters have a shared goal of escaping from the castle, but the player character also has an obligation to protect the weaker companion.

We then look at *interdependence* and *power dynamics* together, as they are particularly strongly linked. Player characters are very often more powerful and have a wider range of abilities than the companion [7, 22, 37, 38, 45, 54]. This typically makes the companion dependent on the player character, which again strongly links to the *obligations* discussed before, for example, the strong player character must provide protection to the companion.

Despite their power, player characters are often still dependent on the companion, albeit in more focused scenarios. A typical case is that the companion guides the player character by providing instructions and information [22, 37, 38]. There are also more specific dependencies. For example, certain locations and secrets might be accessible only to the companion [21, 37], or they might have a supporting function in combat [45].

However, there are great counter examples of power dynamics. In *The Last Guardian* [44], and *Majin and the Forsaken Kingdom* [35], the companions are vastly stronger than the player character (at least, in terms of physical strength). Despite their strength, though, they still depend on the weaker player character and vice versa.

At the same time, it is also common that player characters and companions are roughly equal in power. This appears to be the case especially in games where the player character has more than one companion (and might even be able to choose their party from a larger pool of companions) [11, 12, 17, 28, 31, 31, 51]. Still, it is not

uncommon that the companions are not as efficient as the player character, and therefore success in the game (e.g., winning battles) is more dependent on the player. In these cases it might also be that the *interdependence* is more ambiguous. The player character and companions might rely on overall support from each other, but not necessarily on any particular abilities. A relevant point, though, is that in many party-based RPGs, characters serve different roles in battle [23, 52], and parties are ideally be composed so that the party members complement each other (e.g., one character is a strong melee attacker, another might be a healer).

In summary, *relation to the player* is a critical aspect of companion design. It is often a key part in the game's story, but lesser story-related roles are also common. In terms of interdependence and power, common trends are that the player character is stronger and often has an obligation to protect the companion, and that the player character and companions are roughly equal in power and rather depend on power in numbers. There are also companions who are vastly stronger than the player character, yet they still depend on the player character. All in all, our analysis shows that there are diverse possibilities in how a companion's *relation to the player* can be handled, but we also show that this relation critically affects other aspects of the game, both the story and gameplay. Furthermore, the companion's relation to the player can be multi-layered and can evolve during the game, changing both characters' obligations and dependencies, and even their power dynamics.

3.7 Significance

Significance refers to how significant the companion is to the game. This significance can be divided into relevance to the *story*, (the degree to which the companion is relevant in, and influences, the story), and relevance to *gameplay* (the degree to which a companion influences gameplay and is part of the game mechanics) [14]. Successful companions can be relevant to the story without high relevance to gameplay [42], but can also be important to gameplay without a significant impact on the story [14]. In any case, for a companion to be well perceived, it should have high significance to at least one of the two characteristics [14].

In the earlier sections, we already saw examples where the companion is highly significant to the story [22, 35, 37, 38, 44, 45, 54], which are typically games with a single companion. Still, there are also single-companion games where the companion is not significant to the story [7, 8, 19, 47]. In games with multiple companions, there is more variance. Even within a single game, some companions may be more relevant to the story than others [11–13, 17, 28, 31, 34, 51, 52]. However, companions that are not critical to the main story may still have their own—often optional—storylines and side quests [11–13, 31]. Therefore, they may contribute to deepening the world and lore of the game, even if it is not directly relevant to the main plot.

There is also great variance in companions' significance to *gameplay*. Especially in games where the power dynamics (see the chapter *Relation to the Player*) are not balanced, companions tend to serve more specialized purposes. For example, in *God of War* [45], the companion *Atreus* shoots arrows at the player's command, which are used to solve puzzles and defeat enemies (some enemies are vulnerable to the arrows and highly resistant to the player character's attacks). *Dogmeat* in *Fallout 3* [47] has multiple such functions: in addition to supporting the player character in battle, it alerts the player to nearby enemies by growling, and it can be commanded to fetch supplies. The companion *Majin* in *Majin and the Forsaken Kingdom* [35] is large, troll-like being who can be commanded to smash large obstacles or lift heavy objects. The horse companion in *Red Dead Redemption 2* [19] acts not only as means of travel, but also as a storage and transportation unit (the player's weapon arsenal and items are stored on the horse, and it can be used to transport large things like pelts, carcasses and people).

Continuing with games where the power dynamics are unbalanced, it is also common that companions are more significant to the story than gameplay, having only nominal or no relevance to gameplay [22, 37, 38]. For example, companions in *The Last of Us* [37, 38] series do not have clear gameplay functions. The companions are sometimes even ignored during gameplay, e.g., they do not alert enemies even if they pass through the enemies' line of sight. Such decisions were likely made to avoid player frustration (e.g., getting caught because of an AI companion).

In games with more or less equal power levels, the companions' gameplay relevance tends to be higher, even though we can still observe very diverse approaches. Companions may be fully dependent on the player's input [51, 52], or be semi-autonomous, which can materialize in different ways. Such companions may handle basic actions themselves, but require player input for other actions like special abilities [12, 16, 17, 31]. In many games, regardless of how autonomous the companions are, players can still assume full control of them when needed [11, 13, 15, 17]. An interesting example here is the Gambit system in *Final Fantasy XII* [15], where players can "program" their companions' behavior in battle using a large set of commands, conditions, and priorities. Hence, the player controls how autonomous the characters are. Another interesting point is that in their study, Mäkelä et al. [30] discovered that players of role-playing games (RPGs) do not always trust the AI to handle the companions properly – players might therefore be more inclined to control the companions themselves if given the chance.

In summary, this section demonstrates that companions can emphasize either their gameplay or story relevance, or they can be important to both game aspects. We see two generic trends (although there are exceptions): companions with unbalanced power levels tend to be of lesser gameplay relevance and higher story relevance (e.g., the story is about protecting or escorting the weaker companion, who has only minor relevance to gameplay), whereas companions with equal power levels tend to have higher gameplay relevance (e.g., companions have a wide array of abilities that players can utilize in combat and elsewhere).

We are not aware of (successful) companions that are not relevant to either aspect. In fact, it could be argued that for a character to be even considered a companion, it *must* have relevance to either the story or gameplay. Warpefelt recognizes another type of NPC, *pets*, which have more of a cosmetic role in the game, allowing players to express themselves [62]. Characters without significance to the game—even when they accompany the player—might be better placed in this category.

4 DISCUSSION

Through this work, we have provided an overview of various approaches to game companions. We intend that firstly, this paper serves as a testament to the diversity of game companions and the different ways they can add enjoyment to video games, and secondly, that the discussion and examples serve as a useful material for reflecting on one's own designs.

In the following subsections, we first discuss practical approaches to using our proposed design space, and second, we highlight specific characteristics that we believe could be used as inspiration to design novel companions.

4.1 Using the Design Space to Design Companions

We believe that it is useful for designers to consider their companions from all seven perspectives, and reflect on whether there are some aspects that should or could be improved or changed. We recommend our design space to be used in such a way that the designer takes one aspect at a time as an anchor point, and then reflects on how that aspect influences the other aspects. Through our analysis it became clear that there is strong interplay between the aspects, and their effects on each other should be considered. This kind of reflection can take many forms, but below, we offer some examples of what such reflection could look like:

Scenario 1: Appearance anchor point. If the companion *appears* human, then players might reasonably expect them to also have human-like *sentience*, *individuality*, *behavior*, and *communication capabilities*. If this is not the case, is there a logical reason for it? The companion might have, for example, a condition or disability that prevents them from functioning as expected. Are such reasons consistent with the game world and story? Are they explained to the player character?

Scenario 2: Individuality anchor point. How does the *individuality* of the companion go with other aspects such as *relation to the player*? For example, are the obligations between the player character and the companion believable and logical, given the companion's personality and personal agenda (of which the player character might not be fully aware)?

Scenario 3: Relation to the player anchor point. How does the companion's relation to the player show in other aspects? In particular, how does this relation interweave with significance, either in terms of gameplay or story? For example, if the companion is significantly weaker than the player character, can they still serve a useful function in the game (e.g., accessing locations that the player character cannot, picking locks, distracting enemies)?

It is important to note that missing certain qualities or not following common approaches is not inherently bad. For example, while many companions demonstrate high sentience and high communication capabilities (e.g., fully fleshed out human companions), it can be equally viable to design a companion with more modest capabilities. Rather, we believe that designers should reflect on their design decisions from each perspective and consider whether they form a coherent, believable, and fun companion that makes sense relative to the game world.

4.2 Unique Considerations for Companions

We also discovered characteristics that have not been discussed by existing design papers or that are underused in existing games. Similarly, we discussed common limitations with game companions. Here, we highlight these characteristics, which can serve as inspiration for novel companions:

Companions do not need to accompany the player physically. One of our interesting findings is that companions do not need to accompany the player *physically*, even though the overwhelming majority of companions do. In some existing games, companions communicate with the player character via radio, phone, or similar channels [5, 24]. Future games could utilize similar principles by having companions accompany the player through mental or magical channels, e.g., appearing only in the main character's mind.

Companions could explore leading roles. Companions most commonly appear in subordinate roles (*Relation to the Player*), even if they are physically much bigger and stronger [35, 44]. Future games could explore companions that are the active, driving force in the story, where the player character takes the subordinate, follower's role instead (i.e., being the "sidekick").

Companions could have dynamic relationships with other NPCs. Most games with evolving relationships (e.g., through the player's dialogue choices) focus on relationships between the player and other characters. Companions rarely, if ever, have similar branching stories and relationships with other NPCs. It might be interesting for future games to explore such dynamics, leading to many interesting possibilities, like companions having access to certain services due to having a good relationship with an NPC even if the player character does not.

Companions could be more dynamic with their emotions. Game characters are able to show very believable emotions, which is a result of a number of factors, such as the use of real actors through motion capture technology. However, these emotions are almost always fixed and pre-recorded, and game characters do not show truly dynamic emotions. This is a larger computing problem and not specific to companions or even game characters. In any case, as such technologies advance and more dynamic emotions become a reality in games, utilizing them with companions might create interesting opportunities in terms of game mechanics and relationship-building between characters.

5 CONCLUSION AND FUTURE WORK

There are many aspects that have to be considered when designing a companion character for a video game. In this work, we proposed and discussed a design space consisting of seven design aspects: *appearance*, *sentience*, *individuality*, *behavior*, *communication capabilities*, *relation to the player*, and *significance*. We furthermore discussed how these aspects could be utilized in the design of companions, and proposed novel aspects that future companions could explore. Our discussion was based on existing literature and an analysis of over 40 games that contain one or more companions. As future work, we suggest investigating the interplay between the different design aspects in more detail.

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