The Character as Subjective Interface

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Abstract. This paper re-frames virtual interactive characters as "subjective interfaces" with the purpose of highlighting original affordances for interactive storytelling through conversation. This notion is theoretically unpacked in the perspectives of narratology, interaction design and game design. Existing and imagined scenarios are presented in which subjective interfaces are elevated as core interaction mechanics. Finally, technical challenges posed by this approach are reviewed alongside relevant existing research leads.

Keywords: Theoretical Foundations · Interface · Narratology · Game Design

1   Introduction

I have a friend—let's call him Jean—who regularly informs me of events taking place at his workplace. Over time, I have conceived a rough mental model of this office space and become familiar with the people that populate it. For example, I know that in the afternoon Annette likes to drink grenadine in the cramped, brown kitchenette while playing Sudoku, and that her glass always leaves a sticky mark which she never cleans. I know that, but have never been there nor ever met Annette myself. To the extent of my experience, this office could very well be a fiction, a virtual world or an elaborate simulation. Jean is my window to this world, he's the one representing it to me through narrative.

Actually, Jean is more than a window. He's not only a vector going outwards, carrying information from his office-world to mine. He can also act as a proxy for me there. Once, as he was complaining about an obnoxious co-worker (this one is Jacques), I suggested a clever prank to him. I explained to him all the steps he should take to make this work. I must say that I would have done it better myself, but I couldn't as I'm not allowed there. Still, he pulled it off decently and I had a great time when he described to me the events and his colleagues' reactions.

One day, I met a guy at a cocktail party. He was complaining about how toxic his workplace was, that there was this asshole—someone called Jean—that kept pulling these mean pranks on him. You've guessed it, it was Jacques. And he painted me a similar yet different picture of that office and its inhabitants. Apparently, the kitchenette

is *taupe*, not brown. It shouldn't have come as a surprise that Jean had not communicated an objective representation of his office but a biased one—that of a subject *within* this world, limited by his perceptions, motivations and mental schemata.

By now, and especially if you've bothered to read this paper's title, you see clearly where this is headed: Jean can be considered as an interface—a *subjective* interface. This short paper aims to explore this notion as preparatory work for a new game-design oriented research-creation project titled—you've guessed it again—*Subjective Interfaces*. The work here will consist in a theoretical unpacking of the concept in the light of various perspectives, exploring potential design directions, and outlining looming technical challenges.

2   Perspectives on a Subjective Interface

2.1   Narratology

I have no access to Jean's office. Just like a fictional world, this one cannot present itself to me. I need someone or something to *represent* it. In fiction, that instance is the narrator, acting as threshold between the reader and the *diegesis*, telling a story through the particular form of discourse that is narrative. Considering Jean as narrator allows me to understand a few things on how he delivers his office world to me.

Gérard Genette's classical narratology distinguishes three aspects of the narrative instance (*ie* the narrator): narrative voice ("who speaks?"), time ("when does the telling occur relative to the story?"), and perspective ("how is the information restricted?") [1] The first aspect concerns how the narrator is situated *vis à vis* the narrative: outside (heterodiegetic) or inside (homodiegetic)? Jean reports on his office as a witness and participant, and is thus clearly part of his diegesis. We can further specify his homodiegetic position as autodiegetic, meaning that he is in fact telling his own stories. These are usually told after the fact, which situates the time of the narrative as ulterior to the events reported. We could however imagine a situation in which I would be talking to Jean on the phone and he would deliver a simultaneous narrative.

Perspective, the third aspect of Genette's narrative instance, is perhaps the more interesting here. Originally, it allowed Genette to distinguish two different phenomena that were typically bundled together in catchall terms like "first-person narration" or "omniscient narration": the narrator enunciating the narrative, and whether the narrative is espousing a particular character's range of knowledge or not in telling the story. The latter is termed *focalization* by Genette [2], who distinguishes three types: "zero", where the narrative has access to all information, "internal", where it sets its sights on a character and limits itself to that character's perceptions and thoughts, and "external", in which only the physical world is perceived, without getting access to any character's internal states.

 The appeal of Genette's framing is that the narrative voice belongs to the narrator, but the extensity and position of knowledge available belongs to the narrative itself. For instance, an omniscient (heterodiegetic) narrator may choose to recount the events from the point of view of a particular character, thus resulting in a narrative organized

through an internal focalization on that character. In other words: an omniscient narrator may craft a narrative with a reduced, more selective focus than what he actually knows. I can now cast Jean as an autodiegetic narrator, and the narrative he produces as being internally focused on himself. This means that he can tell me about what he perceives as well as what he thinks (whether he tells the truth or not is something else entirely[1]). If his narrative is ulterior to the events, he can also throw in details he's learned after the fact, potentially exceeding his own limited scope of information and allowing him to present a zero-focalization narrative that goes over events or thoughts that he couldn't have seen or had himself at the time.

Jean is not the only narrator here. *I* am telling you the story that Jean told *me*. In doing so, I have spun a tale that contains a tale. And here we run into Genette's other key contribution, that of narrative *levels*. In a narrative, any homodiegetic (in-world) character may start another embedded or nested narrative, which temporarily confers the role of narrator to that character until the narrative-in-the-narrative is resolved. Or is it? Adapting Genettian narratology to film, André Gaudreault [4] fleshed out the logic of narrative levels and concluded that things were not so simple: the fundamental narrator or mega-narrator (the "zero-level" entity outside of which there is no framing story) always retains control over narration, even while it cedes the speaking part to a delegate or surrogate narrator. This is easy to see in movies: when a character starts recounting events and opens a story (becoming a homodiegetic surrogate narrator), the film camera doesn't just stand there and show her talking; the images and sounds shift and start illustrating her words. The filmic mega-narrator chooses to use its own voice (speaking in camera framing, motions, shots, montage, and all other filming devices) to accompany the surrogate narrator's oral narration. The mega-narrator always retains control.

For you, Jean's story is still *my* story. This situation will be reproduced in the context of an eventual computational interactive narrative: we cannot do without some form of "conventional" interface that will allow human users access to the virtual character's narration. This will introduce another narrative level (or a mega-narrator). Not interfacing with users directly, the subjective interface can be considered an *intraface,* in Galloway's terms [5], meaning an "interface internal to the interface." (p.40)

Genette's narratology can only go so far in helping us think of computational "subjective interfaces." It is, after all, a system tailor-made for (and from) *literary* narration. Even considering a system of textual interaction, we must acknowledge specificities of computational interactive storytelling. An important blind spot is the issue of readers talking back to the narrator. As I put it earlier, Jean may do a lot of talking, but I can always reply, question him further, and even instruct him to do things in his office. For this, we need to turn to a discipline that is as concerned with inputs as it is with outputs.

2.2 Interaction Design

The concept closest to Jean in the fields of interaction design and human-computer interaction (HCI) is that of the virtual or conversational agent. This has been a deeply

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[1] For more on this, see Booth's concept of *unreliable narrator* [3].

researched problem since the 1990s with numerous (though somewhat infamous) applications including automated call centers and help lines. This form of interface is now coming of age with such virtual agents as Siri or Cortana becoming ubiquitous and gaining in popularity. New devices such as smart watches or wearable technologies are thought to increase the demand for it [6]. Just like Jean, virtual agents allow users to access remote information, but also to act upon it.

However, Jean is radically different from Siri. To Jean, the office isn't a database to be searched and filtered for pieces of evidence that might satisfy my curiosity. He perceives and makes sense of the world with his peculiar, idiosyncratic senses and cognitive apparatus. Like all functional virtual agents, Siri and Cortana promise to deliver me the world as it is, and are designed to convey a sense of transparency. Jean might have known that the exact color of the kitchenette walls are taupe and still choose to say "brown" to make them sound more shabby and miserable. Understanding Jean as a human subject leaves room for interpretation as to whether he chose to deliberately be imprecise or simply didn't know. If it were Siri I would assume that taupe wasn't part of her color model or else she would have said so.

Virtual agents are generally evaluated in terms of their *usability*—how efficiently they allow users to perform such tasks as finding the right information, redirecting a call to the right person, booking a train ticket at the right time for the right destination. But that's not how I value Jean. I like him because of all the boring, routine events happening in his office, he will choose the interesting anecdote, and spin it in his own inefficient but charming way. He's not great as a proxy either. Even when acting upon my recommendations, he will always end up doing things the way he wants. If he had done exactly as I had said, the prank would have been better. But then, much of the fun is in finding out what he actually made of my suggestions as it gives me further insight into his personality. If some designers dream of transparent and immediate interfaces, I have to admit Jean is rather to be classified with the murky and viscous ones. That mindset is different enough to make interface characters like Jean completely different from humanized interfaces like Cortana or Siri. Their nature, and the context in which we use them, belong to the realm of aesthetics, rather than functionality.

2.3   Game Design

As Ian Bogost [7] argued, partial inefficiency of the interface can be a feature, not a bug when dealing with video games, as they "are not tools that provide a specific and solitary end, but experiences that spark ideas and proffer sensations"; indeed, interface restrictions can be meaningful: "We gripe when a game doesn't do what we expect, rather than asking what such an unexpected demand means in the context of the game." Bernard Suits' [8] example of golf is telling: as an "interface" between the player and her pre-lusory goal, the lusory means of golf (its instruments and rules) are ridiculously inefficient, yet they are accepted by the player in order for golf to exist. Let's note that the understanding of game interface is not limited here to menus, heads-up display signs (HUD) or graphical user interface (GUI) elements as opposed to the "actual" game. Kristine Jørgensen [9] rightfully observed that game worlds are not separate from an

interface but are themselves an interface inasmuch as they participate in the bidirectional information flow between players and the underlying mechanical system.

Much in contrast to HCI experts, the bulk of the game designer's work is to actually *complicate* interaction in interesting ways. Game designer Greg Costikyan [10] frames this complication in terms of uncertainty: "games thrive on uncertainty, whereas other interactive entities try to minimize it." (p. 15) In this perspective, subjective interfaces will be relevant as game mechanics if they afford original and interesting ways to make interaction uncertain. Costikyan analyzes a number of sources of uncertainty in games, two of which are particularly relevant to subjective interfaces: "hidden information" and "performative uncertainty."

While some games like Chess are founded on a regime of perfect information, many others would be ruined by a perfectly transparent interface. Imagine Poker with visible hands, real-time strategy without the fog of war, or first-person shooting with transparent walls. The character as subjective interface is a diegetically grounded way to design a game's information flow. Part of the world can only be known through the partial and biased reports of characters, requiring players to obtain and cross-check testimonies.

But knowing is only half of the picture; many games also hinge on the uncertain capacity of doing. Subjective interfaces entail a context in which the player is incapable of acting directly, relying on the proxy actions of non-playing characters (NPCs). This introduces a very particular form of uncertainty, that of delegated performance: can Jean do what I told him to do? Did he understand properly? Is he motivated to act well?

Jean's flaky usability as a conversational interface and situatedness as a narrator have a lot to offer in terms of complicating interaction with a virtual world in interesting ways. Let's see if we can find or imagine ludic interactive scenarios that would put the notion of subjective interface at the center of their design.

3 Scenarios (existing and imagined)

The game design and interactive fiction worlds did not wait for this paper to develop NPCs that might effectively (though perhaps in a minor way) act as subjective interfaces to their virtual worlds. What we're looking for here is if we can foreground this dual role of informant/delegate, and upgrade it to a core game mechanic.

3.1 Leadership

The experience of relying on others for both information and action is very familiar to those who have been in a position of leadership. A boss does not have the time to consult all documents relevant to her business firsthand and generally relies on the reports of assistants dedicated to specific areas of administration. Similarly, she does not undertake all actions herself but instead delegates tasks, hoping others will do things as efficiently as she would have (or better).

Consider the complex empire management game series *Civilization*. It is hard to imagine a larger-scale leadership position to that of being the boss in these games. Although your information is limited when it comes to your adversaries, everything in

your own empire that is knowable is exposed to you. Between two diplomatic negotiations with the world's superpowers, you can home in on a single engineering team and tell them where to build the next strip of road.

In order to help out players that might feel at a loss with the abundance of things to know and do, the games offer advisors that will highlight what they consider to be the most pressing issues. Each is only concerned with its own sector (economy, military, etc.), and so there is interesting ambiguity between the advisors' competing advice— the player has to judge which suggestion to actually implement. This setup is even more developed in the clan management game *King of Dragon Pass* [11]. The main difference being that in the latter, the game state and the exact workings of the simulation are much more obscure to the player, making the advisors' opinion more important. This is complicated further by the fact that the advisors have individual characteristics and proficiencies that orient their judgment. A fully-realized subjective interface take on a leadership scenario could go a step further and remove direct player action in favor of advisors implementing player decision, thus leaving room for their interpretation and individual performance.

Other leadership-related scenarios include managing field agents; for example the hired assassins of *Assassin's Creed: Brotherhood* [12] or James Bond himself in the *British Intelligence Officers Exam* [13]. The *Football Manager* series is also ripe with "subjective interfaces" including football players themselves but also player agents, scouts, trainers, etc. Conversations with these characters are however very limited and mechanistic.

3.2   Investigation

The classical mystery fiction investigator often has to retrieve information from a world inaccessible to him first-hand: the past. He wasn't there, but others were. Witnesses are subjective interfaces between him and the events surrounding the crime. Each of them knows only part of the story and some might decide to obfuscate information to protect themselves or others. This approach can be found in LabLabLab's *SimHamlet* game [14] consisting entirely of a natural-language conversation with a witness of the tragic events having taken place at Elsinore. The player needs to interrogate the reluctant and dumb character to piece together the murders' ramifications.

In this type of scenario, the player's input is not so much to delegate actions but rather convince or coerce characters in delivering information. *SimHamlet* is however a set piece, a puzzle that once solved is of little further interest. One could imagine a crime-generating simulation (like the board game *Clue* for example) in which culprits, motives and alibi are shuffled, offering renewed challenges.

3.3   Meddling

Grand strategy and murders are not necessary to spark our interest in other people's lives. If Jean were to ask me to help him woo Annette, I'd be happy to play Cyrano de Bergerac and effectively enjoy a second-order "dating sim." In PullString's *Humani: Jessie's Story* [15], I can chat on Facebook with Jessie, my fictional best friend, helping

her out with moving, finding a new job and a boyfriend—all that without moving from my keyboard. Social simulations like *The Sims* series or *Prom Week* [16] provide great foundations for expanded meddling games about matching or breaking up a pair, mending friendships, learning something about someone or transmitting information down a social chain.

4   Technical challenges

There seems to be a number of varied gameplay scenarios that would make interesting use of the notion of subjective interface. Some games like *SimHamlet* or *Humani* even leverage it as core mechanic. For a fuller implementation of the idea, one would however hope to go beyond pre-scripted interactive fiction or chatbots—having computationally modeled characters that could generate representations of dynamic, procedural simulations. This implies a number of technical challenges. Let's walk through them with a simple, minimal example: imagine playing Chess via subjective interfaces, that is: having the pieces tell you about the game state.

First, one needs a simulated world. This does not represent a major difficulty: Chess has been computationally modeled since the early days of computing, and many modern games feature much more complex and deep simulations. The next step is having characters that are also computationally modeled to perceive and make sense of their simulated world in "subjective" ways. Interactive storytelling and agent-based AI research exists on such topics, such as Ryan *et al.* [17] or Carvalho *et al.* [18] for example. In the case of Chess, a pawn could perceive that eating that other pawn would be a good move for the team but also that this would mean being eaten back the next turn, and thus choose to recommend a course of action that would not lead to that effect.

Having the pawn talk is the next problem. Considering the combinatorial explosion of possible Chess states, an author could never write in advance all the possible lines that could be said by a pawn about its current situation. This is where some form of natural-language generation seems to be needed. Fortunately, there is also interesting current research done on similar problems such as Berhooz *et al.* [19] and Ryan *et al.* [20].

The last issue is providing users with an interface to meaningfully interact with the subjective interfaces. Natural-language understanding (NLU) seems an obvious choice but it's neither fully functional as of yet and not suited for all game playing situations (see [21] for a discussion). It is also an issue to script a NLU technology to understand player inputs referring to events and objects that might have been generated at runtime and did not exist at the time of authoring. It's likely that tailored input schemes might be best to suit specific game designs.

5   Conclusion

By proposing the notion of "subjective interface", this paper highlights the unique voice of "talkable" NPCs as situated at the intersection of narrative, interface and games

(none of those things being able to entirely account for the phenomenon by itself). Reframing and zooming in on forms of interactions that exist here and there as supporting role to larger gaming or interactive fiction experiences, we identify promising new approaches to emergent storytelling, implicating players in non-trivial interaction through conversation.

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