




Re-Tellings: The Fourth Layer of Narrative as an Instrument for Critique

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Abstract. The fourth layer of narrative in Interactive Narrative Systems (INS), such as games, is the players' re-tellings of the stories they have experienced when playing. The occurrence of re-tellings can be considered as an indicator for a well designed INS and as an instrument of critique - the experiences of play are important and memorable to such a degree to the players that they find them worthy to tell others about. The notion of the fourth layer is added to the structural model of IN Systems having (1) a base architectural layer giving conditions for a (2) second layer of narrative design, while a (3) third layer is the narrative discourse - eg. the unique, session-specific played or traversed sequences of events. In relation to this, the Story Construction model is described.

Keywords: Interactive narrative systems · Storytelling in games
Story construction · Fan fiction

1 Introduction

Each traversal of a story stemming from an interactive narrative system (INS) is unique. Re-tellings of experiences from playing games, and experiencing other types of interactive narratives is occurring in everyday life when we tell each other about the experiences. As games and INS move towards more complexity with the increased use of procedural computational methods for both world building and story generation, re-tellings of game experiences are becoming increasingly important for those who experience them. The more unique experiences an INS affords, the more notes there are to compare in re-tellings - and this activity becomes an enjoyable activity in its own right.

Types of re-tellings span from the simple act of talking about a game in daily conversation to more elaborate efforts, such as the blog series about the Sim characters Alice and Kev [4]. Another type of re-tellings are players' narrations about their avatars lives and experiences, e.g. tellings of their fictive alternate lives in the worlds that we inhabit in games. Some re-tellings become original work of their own in the genre of fan fiction - a large body of emerging work that merits its own field of study [18].

If a player or user finds a game experience or an interactive story interesting enough to tell someone else about, it means that it is was somehow memorable,

and important enough to tell someone else about. I propose that if re-tellings emerge in the wake of a game or INS these re-tellings can be seen as indicators that the games or INS are successful designs, perhaps even artifacts with a degree of artistic originality and quality.

1.1 Traditions of Narratological Theory

A lot has been written about narrative in interactive media. In the area of games, classification spaces have been offered. Comparisons have presented similarities to other media and differences have been pointed out (e.g. analyses of interactive media from a cultural-studies perspective, including Aarseth [1], Murray [28], Juul [20], Ryan [32]).

Publications by authors with backgrounds in screen writing and film-making often refer to the Hero's Journey [6, 38], and to the restorative three-act structure of drama, described by Danzyger and Rush [11].

Prominent traditions of narrative analysis include the structuralist perspective beginning with Propp's morphology of the folk tale [29] and Greimas' actant theory [16], as well as the tradition of hypertext theory [2, 23], that is, systems for causal interactive relationships between story elements in multi-linear stories.

It can be contested whether it is a viable way forward when discussing INS to adopt theories about narrative that are constructed as means to understand linear media better, such as novels and movies. A potential benefit of doing so is that the field of interactive narrative systems can make use of well-defined concepts and use them where applicable in the area of INS. The risk with the approach is that the INS area may limit itself conceptually, being boxed into the linear form, and in this conceptual space it may be more difficult to fully appreciate the unique nature of what it means that a narrative is a system of potential stories, and the telling of these stories. A recent promising model that integrates previous work in the field as well as discussing the unique nature INS is the SPP model by Koenitz [22].

1.2 Three Layers of Text Constituting Interactive Narrative Systems

Drawing upon the rich body of work describing and systematizing the nature of interactive narratives and narratives in games, it can be said that there is an overall consensus of dividing narratives into layers, quite often three of them [1, 3, 7, 8, 15, 16, 19, 28, 33, 40]. I have previously described [12] these three layers as - at the lowest layer, a code, or architectural layer, making up the existence of a world where stories can take place. This first layer spans many genres - from table top games, text-based interactive fiction, single player story driven games to larger game worlds with thousands of simultaneous players. This base architectural layer is the foundation for adding actants with driving forces, making up the deep structure of the potential stories. A second layer is often seen as the narrated content provided by game designers and game writers, while the third layer is the narrative discourse - eg. the unique, session-specific played sequence of

events. There are many models, using different terminology to describe these three layers, among them Koenitz [22] who uses the terminology of protostory for the systemic architectural layer, process for the performative instantiation by players/interactors, and product, a played instantiated story. It is because of this general division in three layers that I propose to call the retelling of experiences in games and INS the *fourth* layer.

It has to be noted that any model that is constructed in order to understand a complex reality better is constructed in order to understand them in a certain *way*. By constructing a model, we apply a lens in order to understand a slice of reality better, and to be able to discuss complex constructs using the same language. Doing so, we minimize the inevitable degree of misunderstanding that will occur in any conversation. When mapping Koenitz's SPP model [22] to the model of Story Construction (SC) [12] it is notable that Koenitz's model adopts a lens of gaining deeper understanding when analyzing an *existing* work of INS. The Story Construction model [12] has a different focus, the lens being more adapted to discussing the *creation* of INS and constructing potential stories within them. While the main topic of this paper is the postulation of re-tellings as an important narrative layer whose occurrence can be seen as an indicator of success, a stick of measurement if you will, it is also imperative to present the underpinnings of the occurrence of said layer. Therefore I offer a partial description of the SC model insofar that it may add to the SPP model, limiting the text to the aspects that are necessary for teasing out the authorial issues to take into account from a narratological perspective when creating INS and designing potential stories for them. Further, despite the risk of adopting concepts derived from analysis of linear stories I use some of that terminology in order to make this text more accessible.

2 Fundamental Terms and Concepts

When the word *story* is used in this text it means a fixed temporal sequence of events and the actors that take part in these, that is, the content that a narrative is about.¹ Events in narratives are not necessarily told about in the order in which they have happened. In multi-linear narratives readers or players can often choose when to be told about a certain event, but the order in the sequence of events as such does not change in most cases—only the sequence of experiencing them, or being told about them. A *narrative* is a story the way it

¹ The use of the terms story and narrative in this text conforms to Genette's theoretical framework for narrative analysis. Genette's definition of *histoire*, or in the English translation, story, reads as follows [15, p. 27]: 'I propose [...] to use the word story for the signified or narrative content'. Slomith Rimmon-Kenan uses Genette's definition in her book *Narrative Fiction*, but accentuates the chronological aspect of the concept: "Story" designates the narrated events, abstracted from their disposition in the text and reconstructed in their chronological order, together with the participants in these events.'.

is told. *Narration*, or the art of story telling, concerns how to tell a story.² As players do one thing after another in a world the sequence of events that emerge is what I, in this text, call the character's *discourse*, a concept borrowed from Chatman [8].

In multi-user virtual game worlds (VGWs), being places, there is generally little to no story telling in the design of the world in the traditional sense. The same is true for INSEs, and games using procedural generation of narrative elements. Instead, in INSEs and VGWs, there are elements that have *narrative potential*, a term used by Laurel [24] and described by Fencott [14] as the integration of agency and narrative. Fencott elaborates on narrative potential in [13] as the 'accumulation of meaningful experience as a result of agency—allows participants to construct their own appropriate narratives. Narrative potential thus arises from agency but is not determined by it.' The term *agency* was defined by Murray in [28, p. 126] as 'the satisfying power to take meaningful action and see the results of our decisions and choices'. Mateas and Stern [25] distinguish between *local agency* where users' actions cause 'immediate, context-specific, meaningful reactions from the system' and *global agency*, where the global shape of the experience of the system may be determined by users' actions.

Virtual worlds as places support the emergence of stories. *Emergence* in this context means the emergence of a higher-layer structure from the interaction of many simpler, lower-level primitives. In this case, emergent narrative can be understood as a system in which lower-level elements interact to result in the emergence of a pattern of events that may be told about in ways conforming to a specific higher-level pattern of narrative structure.

Koster [26] distinguishes between impositional and expressive forms of interactive narrative in VGWs. The impositional form is used in choose-your-own adventure books, adventure games and other fixed multi-linear narratives. The expressive form relies less on a sequence of events and behaves more like an architecture. The view of story construction as a type of architecture is shared by Jenkins [19]: 'in the case of emergent narratives, game spaces are designed to be rich with narrative potential, enabling the story-constructing activity of players. [...] it makes sense to think of game designers less as storytellers than as narrative architects.'

The act of creating narrative potential is an act of *story construction*, not story telling. That is, a story is constructed by game-play or interactions where the VGW or INS and its inhabitants are providing material for potential narratives as tellings of the story.

Players of games, users of systems and readers of INS pieces are in this text collectively labeled as *interactors* in Murray's sense [28] in order to designate their role as those traversing and experiencing a game or an INS. For denoting all those who act in a performative role, adding to the fiction or character of a game or INS world, the term *expressive agents* is used, to encompass human

² When Genette uses the word narrative he means 'the signifier, statement, discourse or narrative text itself' [15, p. 27]. The French word Genette uses for narrative is *récit*.

users and computational entities alike, such as non player characters (NPCs) or more abstract entities.³ In summary, those traversing and experiencing a system are called interactors, those performing expressive actions are called expressive agents. Agents can be both expressive and experiencing, and driven by either human or computational intelligence, or be semi-autonomous.

3 Text Layers in Interactive Narrative Systems

When discussing story construction in the context of computer-based systems such as VGWs and INS I have previously found it is useful to divide story and narration into different layers [12] summarized in Fig. 1.⁴ This way it is easier to communicate where in the structure something may be implemented, and what implications a new feature may have, e.g., for authoring rights and persistence. For instance, few designers would give creation rights to players on the architectural code layer because a change on that layer would change the rules of a whole INS or game world. Note that the layers in Fig. 1 refer to different layers of authored text, not to software architecture design.

Practically, these different text layers, and thus the narrative potential of the world are usually created by persons having different roles. The code layer is written by software engineers, the story layer by game designers and writers, while the discourse layer and the narrative layer are performed by players, game masters, and sometimes live teams or other persons having roles moderating the experiences within an INS or a VGW.

4 Code Layer

The code layer itself can generally be divided into three software layers. The bottom layer is the engine which consists of very general functions such as network and communication systems, the rendering of the system's interface, the sound system, the interface for animation, the handling of the terrain, the dialogue system, the media storage, and the physics system, which governs gravitation, forces, collisions and collision response.

Above this, there is the framework of the game, a layer of abstract representations of the game's structures such as classes of game agents, classes of behavioral control and systems for action control and communication. The engine is usually general and may be used in various game genres, but the framework tends to be more specific for its genre, implementing a generic system. Above the framework there is the scripting, that is the specific content programming, which mostly consists of data and the instantiated definitions specific to the given game or

³ An example of an abstract entity that has an expressive and performative role could for example be weather, such as a storm god manifesting by changing the conditions in an environment.

⁴ As noted earlier this lens for seeing narrative is adapted towards the creation of interactive narratives rather than analyzing them.

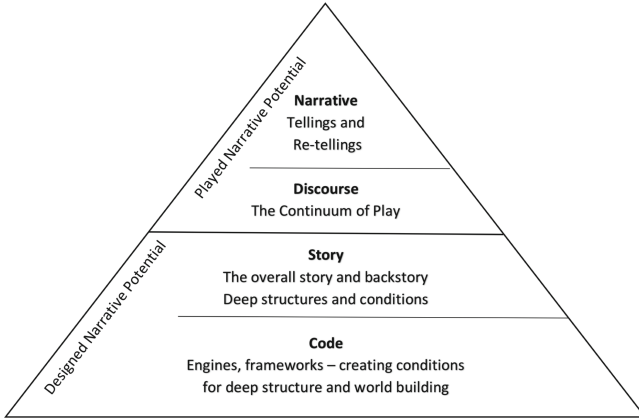


Fig. 1. Text layers in story construction

INS. These layers are co-ordinated to bring forth the media that become visible and audible to interactors, such as environments, characters, dialogues, music, sound effects and graphical user interfaces.

It is important to be aware of the implications that a certain engine or code base have for resulting play experiences and the conditions for creating narrative potential in a game world. The divisions of layers within the code layer are very general, the details vary from architecture to architecture. In order for the categorization to be useful in a production situation they can be derived from the production team structure: for example, if a game-engine group is assigned to create the engine layer, another group writes the framework and undertakes game programming. It is also vital to take coding that is done outside of the production team into account. In some cases it can be interactors coding. Cherny [9] shows an early example from LamdaMOO where players program personal and characteristic behaviors for their avatars that can be triggered by keywords typed by other players. In other, more recent cases, interactors may be computationally composed, such as Cook's Angelina system that produces level designs and content for them [10].

The Code layer is what creates the conditions for story constructors to create a deep structure for a game world or an INS. In Koenitz's model the code layer would correspond closest to the 'protostory', which in the SPP model denotes concrete content of an INS as a space for potential narratives. [22, p. 99] The protostory term is derived from prototype based programming that allows for dynamic changes of structures in run-time.

5 Story Layer

The deep structures of the potential stories are designed at the story layer – both dynamic and static elements. This aspect includes the forces motivating the

actions of the characters, their goals and the specific abilities of each individual entity. At the discourse layer, these entities (mostly characters, but also more abstract forces like weather) manifest actual stories via performed actions by the interactor.

The story layer also includes the back-story, the explicit narrative framing by the game designers or INS authors. This back-story often has a branching structure where parts of it can be mandatory for the user to traverse in order to progress in the game world or INS. The story layer described here is what would be the equivalent of the narrative design in Koenitz' SPP model [22] as part of what he understands as the protostory.

We can take some aspects of a narrative to be essential, in particular ones that are necessary for an interactor to have a compelling experience, which makes them – in Koster's terms – a type of impositional narrative, in contrast to optional, but expressive narrative. The impositional stance can be found most often in single-player adventure games and hypertext narratives, where the overall story and its content are fixed, even though, when experienced, variations in chronology and sequencing can still create a varied experience.

In VGWs there is often a mix of different story construction techniques. Both Asheron's Call 2 [27] and Star Wars Galaxies [35] are good examples of game worlds that contain mixed strategies, from the linear to the fully emergent and from the impositional to the expressive. In Asheron's Call 2 a linear story arc is mandatory for players to go through in order to be able to get to new geographic areas in the game world. The VGW Star Wars Galaxies is an example of a world where players can perform quests that are connected to linear narratives, and are not mandatory for the development of PCs. In general, VGWs mix impositional and expressive story construction, the expressive stance being inherent, deriving from the code layer and implemented in the story layer to provide a framing to what agents and player characters are allowed to do depending on their states, in the form of dependencies, constraints and affordances.

5.1 The Deep Structure

Even if not all games contain a story in the same way as films, plays and novels do, they all contain a deep structure. Games like chess and solitaire contain deep structures; there are goals, driving forces and constraining rules for achieving the goals. In these examples though, the goals that drive the mechanics of game-play are part of the predefined conception of the game. This is not always the case in VGWs and INSes, where the interactors may define their own goals that are not always be foreseen by the designers.

The concepts of deep structure and surface structure are used by Greimas [16] and summarised by Rimmon-Kenan [30, p.10]: 'Whereas the surface structure of the story is syntagmatic, that is, governed by temporal and causal principles, the deep structure is paradigmatic, based on static logical relations among the elements.' Greimas' Actant Theory models static relations as relations among actants. Actants are entities that accomplish or submit to an act.

Budniakiewicz [3, p. 76] points out that the position of the object in the model has a double function: ‘The positional value of the Object is doubly defined by the convergence of the actantial axes: both as an ‘object of desire’ and as an ‘object of communication’.’ Budniakiewicz reminds us that for Greimas the actant model and the actant grammar are foremost ways to extrapolate syntactic structure.

How can this be of use when discussing story construction? Actant theory is a conceptualization that breaks down the parts of a story into the force fields that make it possible for the narrative to come into existence. By applying this way of looking upon dynamic and static story elements it is possible to more clearly define the forces that, in Greimas’ words, make up ‘the semantic syntax’ or the micro universe that a fictional world and its overall narrative consist of.

5.2 Action, Event, State and Antecedent Driving Forces

In the context of story construction it is necessary to make clear distinctions between action, event, and state, and in this way to be able to distinguish what implications an action has for one or several states. What states are affected depends upon an action’s direction and sender. Greimas [17, p.176] defines the distinction between action and event in the following way: ‘Whereas action is dependent only on the subject concerned with the organisation of his activity, event can be understood only as the description of this activity by an actant external to action.’

An *action* is, according to these terms, dependent on the subject that performs the action or activity. An *event*, on the other hand, is a description of the same event when the description is performed by an actant standing outside of the performed action. A *state* is held by an agent and is a result of all actions performed by the agent itself and by the actions performed by other agents aimed directly or indirectly at the first agent.

Budniakiewicz [3] asks what it means when someone says that ‘we do’ something. She means that verbs are ‘unpacked’ to make descriptions of antecedent states when someone contemplates an expression of ‘something done’. Even though Budniakiewicz, just as Greimas, primarily studies syntactical structures, this terminology is useful in the current context. Budniakiewicz puts it in the following way:

These antecedent states are the wants, the goals, and plans of the agent which are interconnected in a peculiar pattern of reasoning used by the agent both before and during the performance of action, when the agent is said to ‘be doing’ something. The reasoning has been named in traditional Aristotelian commentary a practical syllogism or inference.[...]

Major premise: N wants to do O / bring about O.

Minor premise: N considers that he cannot do O unless he does P.

Conclusion: Therefore, N sets himself to do P / does P.

Put simply, an expressive agent performing a quest in may plan to, for example, find a dragon, kill it, take its treasure, give it to another character (that can be autonomous or another player character) and receive a reward for the trouble.

Ragnhild Tronstad [37] discusses what constitutes a quest and how only after its completion it becomes a story. For her, what constitutes the motivation for solving a quest is the search for its meaning (p. 81): ‘To do a quest is to search for the meaning of it. Having reached this meaning, the quest is solved. The paradox of questing is that as soon as meaning is reached, the quest stops.’

In a VGW or an INS the experiencing agent who perform quests within the rules of the system are governed by the *antecedent driving-force* constituted by their long-term goals, plan or will. Tronstad argues that when the goal is reached, or the plan is carried out, or its will is satisfied, the driving-force of the agent is neutralized.

6 Discourse Layer and the States of the Agents

Discourse, in the context of games and IN Systems, is the sequence of experiences (expressed by signifiers in the game world) that an experiencing agent goes through.

It is in the discourse layer that the state of the expressive agent evolves. This would in many cases be the way a player character gains experience, skills, and personal history. A class (in terms of software) describing the type of the expressive agent also describes what types of action are possible for the expressive agent to perform and the possible basic obstructions against performing them. This constitutes the *action potential* of the expressive agent. When the expressive agent is instantiated for the first time (whether it is embodied or not), it contains its first conditioned state. The state of the expressive agent changes depending on its own actions, what actions are aimed at it by other agents and objects. The state can also change depending on influences by other elements specific to a game or an INS.

It is in the continuum of interaction with the system, in the discourse layer, that the interactors have, ideally, a sense of agency. Using the terminology of Mateas and Stern [25], the local agency may be a result of expressive agents having an impact on story element conditioned at the story layer. Global agency would be afforded by all parts of the story layer, eg also the conditions of the elements, goals and driving forces of actants, and perhaps even affecting the code layer.

7 The Fourth Layer of Narrative: The Re-Telling

The narrative layer of re-tellings consists of tales told about events and actions in an INS or a game world. An example would be a player telling someone about something that has happened during play.

Every play-through of a game, or a traversal of an interactive narrative, is unique, and therefore it is especially interesting to compare notes. The re-tellings occur in communicative everyday interactions, and through social media, in recordings displayed at Youtube or Twitch, or in the form of avatar diaries at

LiveJournal - there is a plethora of channels for re-tellings of experiences, sharing one's own experiences and getting to know others' unique and exceptional traversals.

Thus, re-tellings comes in many forms, and from authors with different degrees of closeness to the original creators of IN Systems. They also occur at automated system level, such as event logs parsed into a narrative, such as the player characters' diaries in Shenmue II [34]. This type of re-telling correspond with Koenitz's notion of product [22], eg, the recorded instantiated output.

Some VGWs' live teams write regular newsletters about what is happening in the world and have official web sites where this history is gathered and edited. An early example of this is when the developers of the social virtual world Second Life, Linden Labs, hired the journalist James Wagner, who, starting in 2003, reported on trends and happenings that were taking place in the virtual environment [39].

The official web sites of VGWs commonly have sections dedicated to narratives about what a player has experienced via her character, told from the character's point of view. It is also common for chronicles to be written by the most active players in a guild, highlighting marriages, wars that have been won and other important events.

A multitude of communication channels exist independently from the publishers of any game or INS which are used mainly for retelling of stories, one example being LiveJournal, a social networking service that is popular among players who create fictions about their game characters' experiences and thus can be understood as a specific form of fan fiction, [18].

7.1 The Tale of Alice and Kev

Let us consider 'Alice and Kev - The story of being homeless in The Sims 3'. It is a series of retellings of game experiences by Robin Burkinshaw. Burkinshaw created two characters (Alice and Kev), moved them into a place looking like an abandoned park, and removed all their remaining money. Then, he attempted to help them survive in the game without them taking career routes that would earn them money. About his narrative stance, Burkinshaw writes: 'I have attempted to tell my experiences with the minimum of embellishment. Everything I describe in here is something that happened in the game.' [4]

In the chapter 'Selflessness' the character Alice has after many hardships finally managed to get her first salary only to give it away to charity: [5]

Alice gets to work late, but not too late. When her shift at the supermarket ends that evening, she has 100 hard-earned simoleons, but she is as exhausted as it is possible to be. She wobbles slightly after walking out the door, and only just manages to stop herself from losing consciousness there and then. But she doesn't want to rest now. She's just come up with a new wish. It's a wish that would be easily fulfilled, but the idea scares and horrifies me. I don't want to grant it to her. But it's her life, and her choice. I reluctantly let her do it.

She takes all of the money she has just earned, places it into an envelope, writes the name of a charity on the front, and puts it into a mailbox.

Burkinshaw expresses in the text how his role as author/player becomes dramatic by the need to make a choice - he doesn't want Alice to give the money away, but lets her anyway, allowing her to act according to her character. Readers of Burkinshaw's text who have also played *The Sims 3* [36] know what Burkinshaw is alluding to when Alice is 'as exhausted as it is possible to be', and what it means within the game rules that Alice has a wish. This adds to the degree of enjoyment when comparing and discussing the unique narrative experiences from the same game.

Burkinshaw's narrative has gained traction with other players. The chapter *Selflessness* has (as of 2018-08-01) 178 comments by readers. In the commentary, other players express that Alice feels real as a character, and that her gift to charity is beautiful. There is also more interpretative commentary, such as by the user *Danuab*: 'It doesn't mean anything. Alice has likely internalised her father's distaste and abuse and developed a negative self-concept. She isn't giving money away because she's altruistic, she's giving it away because she doesn't think she's worth it.'

The example of Alice and Kev shows that *The Sims 3* as an INS not only affords the emergent story construction that is taken by players as meaningful enough to narrate to others, but also how the resulting second order narration merits its own critique and commentary by other players.

7.2 Re-Tellings as an Instrument for Critique

Based on the example above, I propose that *The Sims 3* can be seen as a highly successful INS in terms of artistic quality and originality.

Conversely, I postulate that re-tellings of experiences from INS can be considered a fourth layer of narrative, and that these are indicators suggesting that the INS in question is 'well-made' or 'good' and had significant impact on the player. This means that a game or an INS - at its base level - has provided an experience that is significant or meaningful enough that it is worth telling someone else about. Re-tellings can be collected and analyzed in order to gain an increased understanding of what aspects of INSeS are particularly well received. This method has been used for example by Lisbeth Klasturp for 'The Death Stories Project' [21]. Through a web form she gathered narratives from players describing death experiences. An important goal of the project was to find suggestions that may help designers to 'become better at designing worlds which give players experiences they want to tell stories about.'

I propose that re-tellings of experiences from traversals of INS could be used as an instrument for the critique of IN Systems. Using data-mining methods, the occurrence of re-tellings could be collected and used as an - admittedly somewhat blunt - indicator of a successful design. More in-depth analysis may provide pointers to what aspects of an INS are particularly interesting and why. Related work by Ringer and Nicolaou [31] use visual analysis of game streams (twitch) to detect game highlights based on player reactions.

Figure 2 summarizes the OC model, adding some tentative types of tellings and re-tellings in the column to the left. Future work includes a typology of fourth layer narratives.

Story Construction			
Designed Narrative Potential		Played Narrative Potential	
Code Layer	Story Layer	Discourse Layer	Narrative Layer
Engines, framework, and game programming.	The overall story or back story.	The continuum of play.	Tellings and re-tellings.
These together manifest the geographic structure as well as the conditions for the deep structure of the story and its construction.	The deep structure consisting of the individual expressive agents and the story elements. At the discourse layer, these manifest the overall story and possible side stories.	The current dynamic states, experienced events, movements, and actions of the expressive agents that result in sequences of events: the actual story, or discourse.	The narratives told about the actions and events in the game world or INS. The narratives are told both in-world and out-of-world.
Scripting Detailed programming of objects specific to the game or INS.	Story Elements The specific setup of expressive agents and story elements that are to be instantiated.	Individual Story Discourse The past of the expressive agent, a chronological sequence of the actions performed and the events experienced. This is the actual story of a specific expressive agent.	Recorded system output Product in the form of narrative discourse, recorded instantiated output from a system.
Framework - Abstract model of a world and system. - The glue between scripting and engine(s)	Conditions Causal dependencies governing relations between specific agents and objects,	State The state of the expressive agent in the moment of interaction, defined by the construction of the class the agent is instantiated from, and from the agent's individual story discourse.	Simultaneous retellings. Ex: Streaming game play via Twitch or YouTube Gaming.
Engine , may include: - physics system; - graphics rendering system; - dialog system; - media storage; - communication layer - INS system. - etc.	Goals, Driving Forces Wills, motives, aspirations, and goals of the expressive agents.		Communicative re-tellings. Ex: "You won't believe what happened in the raid. We..."
			Chronicles and Reporting. Ex: guild scribes telling about marriages or funerals in VGWs, or reporters commissioned by game companies.
			Narratives with artistic or authorial intent. Avatar narratives, re-tellings of simulations (ex. Alice and Kev), fan-fiction.

Fig. 2. Story construction in games and INS

8 Conclusion

In this paper I postulated that the occurrence of player's re-tellings of diverse forms of interactive narratives (narrative video games, interactive documentaries and many others) are indicators of successful designs since they indicate that the underlying experiences were important enough to re-tell them. I described the re-tellings as a fourth layer of narrative, adding it to a three-fold structural model of interactive narrative systems as having (1) a base architectural layer giving conditions for a (2) second layer of narrative design, while a (3) third layer is the narrative discourse - eg. the unique, session-specific played or traversed sequences of events. I also suggested that analyses of corpuses of re-tellings can be used as instruments for critique of interactive narrative systems.

References

1. Aarseth, E.J.: *Cybertext, Perspectives on Ergodic Literature*. Johns Hopkins University Press, September 1997
2. Bolter, J.D.: *Writing Space: The Computer, Hypertext, and the History of Writing*. Lawrence Erlbaum Associates (1991)
3. Budniakiewicz, T.: *Fundamentals of Story Logic: Introduction to Greimassian Semiotics*. John Benjamins Pub. Co., Amsterdam (1992)
4. Burkinshaw, R.: *Alice and Kev - The story of being homeless in The Sims 3*. <https://aliceandkev.wordpress.com/>
5. Burkinshaw, R.: *Selflessness—Alice and Kev*. <https://aliceandkev.wordpress.com/2009/06/16/selflessness/>
6. Campbell, J.: *The Hero with a Thousand Faces*. Princeton University Press, Princeton (1949)
7. Cavazza, M., et al.: *The IRIS network of excellence: integrating research in interactive storytelling*. In: Spierling, U., Szilas, N. (eds.) *ICIDS 2008. LNCS*, vol. 5334, pp. 14–19. Springer, Heidelberg (2008). https://doi.org/10.1007/978-3-540-89454-4_3
8. Chatman, S.: *Story and Discourse*. Cornell University Press, London (1978)
9. Cherny, L.: “Objectifying” the body in the discourse of an object-oriented MUD. Stanford University, Technical report (1994)
10. Cook, M., Colton, S., Gow, J.: *The ANGELINA videogame design system-part i*. *IEEE T. Comp. Intel. AI Games* **9**(2), 192–203 (2017). <https://doi.org/10.1109/TCIAIG.2016.2520256>, <http://ieeexplore.ieee.org/document/7429751/>
11. Danzyger, K., Rush, J.: *Alternative Scriptwriting*. Focal Press (1995)
12. Eladhari, M.P.: *Characterising action potential in virtual game worlds applied with the mind module*. Ph.D. thesis, Teesside University, September 2010
13. Fencott, C.: *Agencies of Interactive Digital Storytelling* (2003)
14. Fencott, C.: *Virtual storytelling as narrative potential: towards an ecology of narrative*. In: Balet, O., Subsol, G., Torguet, P. (eds.) *ICVS 2001. LNCS*, vol. 2197, pp. 90–99. Springer, Heidelberg (2001). https://doi.org/10.1007/3-540-45420-9_11
15. Genette, G.: *Narrative Discourse - An Essay in Method*. Cornell University Press, Ithaca (1983)
16. Greimas, A.J.: *Sémantique structurale*. Larousse (1966)
17. Greimas, A.J.: *Narrative Semiotics and Cognitive Discourses*. Pinter (1990)
18. Hellekson, K., Busse, K.: *The Fan Fiction Studies Reader*. University of Iowa Press, Iowa City (2014)
19. Jenkins, H.: *Game Design as Narrative Architecture*. The MIT Press, Cambridge (2003)
20. Juul, J.: *A clash between game and narrative - a thesis on computer games and interactive fiction*. Ph.D. thesis, University of Copenhagen (1999)
21. Klastrup, L.: *The Death Stories Project*. [Electronic Publication] (2006). <http://www.death-stories.org/>
22. Koenitz, H.: *Towards a specific theory of interactive digital narrative*. In: *Interactive Digital Narrative: History, Theory and Practice* (2015)
23. Landow, G.P.: *Hypertext: The Convergence of Contemporary Critical Theory and Technology*. Johns Hopkins University Press, Baltimore (1992)
24. Laurel, B., Strickland, R., Tow, R.: *Placeholder: landscape and narrative in virtual environments*. *SIGGRAPH Comput. Graph* **28**(2), 118–126 (1994)

25. Mateas, M., Stern, A.: Structuring content in the Façade interactive drama architecture. In: Proceedings of the First AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment, AIIDE 2005, pp. 93–98. AAAI Press, Marina del Rey (2005)
26. Meadows, M.S.: *Pause & Effect - The Art of Interactive Narrative*. New Riders (2003)
27. Microsoft Corporation: *Asheron's Call 2 - Fallen Kings* [Computer Game - Virtual Game World]. Turbine Entertainment (2002)
28. Murray, J.H.: *Hamlet on the Holodeck*. The Free Press, New York (1997)
29. Propp, V.: *Morphology of the Folktale*. University of Texas Press, Austin (1968)
30. Rimmon-Kenan, S.: *Narrative Fiction: Contemporary Poetics*. Methuen & Co (1993)
31. Ringer, C., Nicolaou, M.A.: Deep unsupervised multi-view detection of video game stream highlights. In: Proceedings of the 13th International Conference on the Foundations of Digital Games - FDG 2018, pp. 1–6. ACM Press, New York (2018). <https://doi.org/10.1145/3235765.3235781>, <http://dl.acm.org/citation.cfm?doid=3235765.3235781>
32. Ryan, M.L.: *Beyond Myth and Metaphor - The Case of Narrative in Digital Media*. Game Studies, July 2001
33. Ryan, M.L.: *Avatars of Story (Electronic Mediations)*, 1 edn. University of Minnesota Press (2006)
34. Sega AM2: *Shenmue II* [Consol Game]. Sega, Microsoft Game Studios (2001)
35. Sony Online Entertainment: *Star Wars Galaxies: An Empire Divided*. Lucas Arts [Computer Game - Virtual Game World], June 2003
36. The Sims Studio: *The Sims 3*. Electronic Arts [Computer Game] (2009)
37. Tronstad, R.: *Semiotic and Nonsemiotic MUD Performance*. Holland (2001)
38. Vogler, C.: *The Writers Journey*. Michael Wiese Productions (1993)
39. Wagner, J.: *Second Life: Notes from a New World*. Electronic Publication (2003). <http://secondlife.com/notes>
40. Wardrip-Fruin, N.: *Expressive Processing: Digital Fictions, Computer Games, and Software Studies*. The MIT Press, Cambridge (2009)