Outlook on Methods Dealing with Ludonarrative

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Abstract: Ludonarrative has become one of the most prevalent topics in video games. More and more games are judged or analysed in accordance with ludonarrative methods. This paper will analyse the work which has been done to guide ludonarrative methods. The methods will be presented so that we are able to summarise and find the gaps in today's game development process. Most of the works on ludonarrative methods are theoretical and few are practical. They focus on specific intricacies of ludonarrative and from there procedures are built. The purpose of this paper is to present and find where and how methods in relevance to ludonarrative can be used. With the review of those methods, it can be found that most of the methods are used to review finished products (games) in accordance with ludonarrative ideas. The authors will review and compare the various works in relation to ludonarrative.

Keywords: game development; ludonarrative; methods; video games

1 RELATED WORK

The term *Ludonarrative dissonance* coined by Hocking [1] has marked gaming studies. In his blog post, he sparked the thoughts of many authors by proposing ludonarrative dissonance. This idea stems from Hocking's playthrough of the BioShock game [1]. He went on to explain the discrepancy between ludic and narrative elements in the game. This term tries to explain how some games create dissonance between game elements and narrative. At first, ludonarrative studies consisted of mostly of researching what is ludonarrative and how does it affect the games or players. Aarseth [2] and Murray [3] were one of the first to propose ideas that later will be used to study ludonarrative. Aarseth suggest that games have separate elements (ludic and narrative) and that player needs to have some kind of interactivity with those elements. Murray says that this is more about the player and "the satisfying power to take meaningful action and see the results of our decisions and choices" (1997, p. 126). Later Toh [4] in his work offered a different way to look at the ludonarrative. He branched it into plethora of different subbranches. Each branch has its own relevance depending on the style that the game is taking. Approaches from authors such as Jenkins [5], Louchart et al. [6], Seraphine [7], Frasca [8] and Roth [9] go more into theoretical realm of ludonarrative while offering new ideas how to research it. Those ideas look at the different media (books, cinema, games). With different media in mind, the ideas proposed by them are objectively looked at and try to explain what is ludonarrative or how certain ludonarrative conditions are created. Donoghue [10] takes inspiration from Toh and creates *LAF model.* LAF model tries to break down games into components. Each component has different requirements and those requirements were combined to create a scale to understand and qualify ludonarrativity inside the game. Dodds [11] research through design offers a way to create ludonarrative consistent game. His *trait systems* show how each small design ideas, if combined correctly can have a great impact on the consistency of the game. Aarseth [12] builds upon his old works and proposes how certain game elements correspond with each other. Depending on the game you wish to create, it may be valuable to have a different approach to creating it. Similarly to Aarseth, Hunicke et al. [13] and Maraffi [14] created frameworks which try to find and understand what is and how the player – game connection is created. Hunicke et al. MDA framework shows how depending on the position of the person, outlook on the game can be different and that it needs to keep both views on the game while creating it (player and designer view). Maraffi's SGRplay framework uses MDA as its basis and creates a survey to analyze the connections between player and the game. Like MDA framework offered a way to create a game while following certain approaches, Purnomo et al. [15] *GAMING* formula and Koenitz [16] *IDN* framework look at the building blocks of games and offer ideas which need to keep in mind while creating the games.

While all the methods mentioned offer insights into ludonarrative and how to plan for it, it does not tell us much about how exactly to create it. Despain & Ash [17] go in depth while looking at the *ludonarrative harmony*. Instead of testing already existing published games, Despain & Ash went on to create their own model to achieve ludonarrative harmony. Their model offered an idea how to look at the games and their creation. This model offers a specific way to achieve harmony while creating a game. By following Despain & Ash model, Söderlund & Hedlund [18] created a demo game and surveyed it to see if it works. This method proves that there are specific steps you can take to create ludonarratively harmonious game. By reviewing various ludonarrative methods, the areas those methods cover are relatively small, mostly used for reviewing papers and some touch to add to games during their creation. After compiling the methods and understanding how they are used, this paper can present the gaps, which are left in ludonarrative approach and application of its methods.

2 LUDONARRATIVE: UNRAVELING THE NEXUS OF GAMEPLAY AND STORYTELLING

In the dynamic realm of video games, the fusion of gameplay and narrative—commonly referred to as **ludonarrative**—has emerged as a pivotal area of exploration. As players traverse virtual landscapes, their decisions and interactions shape the unfolding story. Let us

delve into the theories and methodologies that underpin this intricate relationship.

2.1 Murray's Vision: Games as Narrative Evolution

In her seminal, work *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* [3], Murray posits that games represent a novel phase in narrativity. Players now wield agency, influencing the narrative trajectory through their choices. This interplay between player agency and storytelling defines the ludonarrative landscape.

2.2 Aarseth's Dichotomy: Ludic and Narrative Elements

Aarseth [2] dissects games into distinct components: the **ludic** (pertaining to gameplay mechanics) and the **narrative** (weaving the story). Crucially, Aarseth emphasizes player immersion—the act of becoming an integral part of the game. This perspective views players not merely as external observers but as active elements within the game's fabric.

3 METHODS AS A REVIEW OF LUDONARRATIVE

For this paper, all chosen ludonarrative methods comply with the following:
1) Give an understanding of what is ludonarrative
2) Present which approach was taken to address ludonarrative
3) Approach has a method which can be followed to review or avoid ludonarrative
4) Approach offers steps on how to avoid certain ludonarrative problems.

3.1 User Roles in Interactive Narrative Systems

Louchart et al. [6] delve into the practical implementation of ludonarrative. They categorize user roles within interactive narrative systems, aligning them with desired experiences. Let us explore these roles (Tab. 1):
1) **Spectator**: The passive observer, akin to an audience member at a theater.
2) **Author**: Empowered to shape the narrative, akin to a playwright.
3) **Explorer**: Curious and interactive, akin to an adventurer charting unexplored territories.
4) **Pawn**: Navigating predefined paths, akin to a chess piece following rules.

Narrative traditionally revolves around textual elements, but ludonarrative transcends mere words. It marries game mechanics (ludic aspects) with storytelling (narrative aspects). Even games predominantly narrative-driven fall under the ludonarrative umbrella. Roth [9] underscores that ludonarrative is inherently about meaning-making—a process where gameplay and narrative intertwine.
"1) when players interact with the game system and derive meaning purely based on mechanical level and 2) when they interpret the resulting narrative meaning of game events and their actions. [9]"

Table 1 User roles in interactive narrative systems by Louchart et al. [6]

Role of the user	Description	Interactivity
Spectator	In the sense of a reader or a passive audience. The user witness the work and creativity of the author without possibilities of intervention.	Extremely limited to no one.
Author	The user participates in the creation of story content and its articulation from an authorial perspective without taking part in its unfolding from a character or player viewpoint.	Interactivity is not an issue with this perspective of the user.
Spect-Actor	The user has a limited perception of the story unfolding and has limited interaction with characters concerning their decisions.	Interactivity present but limited by actor's desire to consult the audience.
Participant	As in video-games, the user is immersed in the story from a character perspective and only perceive what he as a character has access to within the limitations of its environment.	Interactivity is present but limited by the story environment and gameplay.

In certain games, player progression mirrors the prescribed narrative. Consider war games, where players assume the role of soldiers. The path forward—whether through combat or strategic choices—aligns seamlessly with the overarching story? Here, ludonarrative harmonizes player agency with the game's predefined trajectory. In the vast landscape of video games, two contrasting approaches emerge: those that align the story with player progression and those that diverge from it. Consider a game where the narrative portrays a pacifist protagonist, yet the player must resort to violence to advance. These divergent approaches yield distinct player experiences, as meaning-making remains subjective.

"Intuitively, we might understand narrative as located within a narrative product like a printed book or a movie. However, the cognitive perspective stresses the point that narrative resides within the human mind as a mental construct." [9]
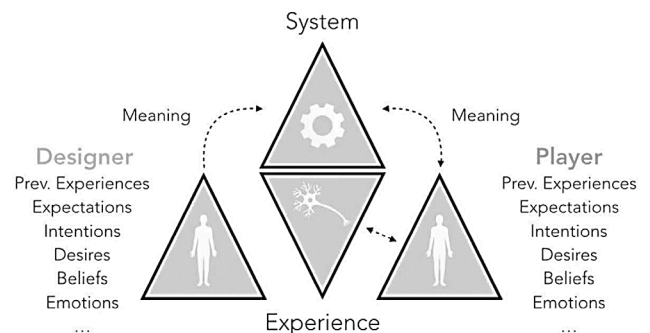
Figure 1 Factors influencing the player's ludonarrative meaning-making [9]

Roth's work (Fig. 1) sheds light on experience dynamics. It has not solely shaped by a player's gaming history but also influenced by their mindset and the game's design. Previous

gaming experiences, education, and real-life encounters all contribute. Meanwhile, a player's mentality—shaped by thought processes and moral compass—interacts with how the game system was crafted. These elements collectively mold the player's journey.

Seraphine [7] takes a different path, seeking harmony between narrative and gameplay. The game creator's direction plays a pivotal role. Understanding the distinction between **incentives** (what drives player actions) and **directives** (how the game guides players) is crucial. Additionally, players often perceive in-game avatars as extensions of themselves. Achieving **ludonarrative coherence**—where game elements seamlessly align with the story—requires a delicate balance. Developers must grapple with relinquishing authorship to empower players as co-authors.

3.2 Exploring Ludonarrative Models: Different Perspectives and Approaches

One of the most comprehensive takes on ludonarrative categories is by Toh [4]. Toh dissected ideas behind the ludonarrative and created a model that is based on a multimodal discourse analysis framework. This method uses a research approach where it is needed to carefully create questions with which you interview others and record the answers. This was done by using different games for which he had multiple sessions of research and interviews until the players concluded playing the games. After everything was done, all the results were gathered and analysed to create the model. The ludonarrative model for video game analysis was constructed by incorporating all the results from the testing. This model can be seen in Toh's work *A Multimodal Discourse Analysis of Video Games:A Ludonarrative Model* [4].

Toh's model is an idea of how to do the ludonarrative analysis for games. It highlights how different elements are tied together and are intertwined. The model was created by using a limited number of games and it needs to be tested and developed even further by creating a larger library of games, which are tested as well with a larger participant group.

A different take on the models has Donoghue [10] who proposes the LAF model (Ludonarrative Analytical Framework). This framework tries to break down games into components. The components were derived from multiple theories and frameworks (Tab. 2).

For easier understanding and visualisation, Donoghue created a ludonarrative scale. This scale is designed in a similar way as a Likert scale and it shows how much harmony or dissonance is occurring in different game components.

This scale was incorporated inside a web of all the components for an easier visual representation. The LAF model was prototyped further by using Close Playing (an adapted version of the close reading method) to gain more understanding of how the games are developed. Tests of the model were done with the Case Study method.

"The ludonarrative analytic framework (LAF) and ludonarrative scale provide an original method to understand, qualify and communicate the effective ludonarrativity within a game." [10]

The LAF method tries to show a way to understand the capacity of ludonarrativity in games as well as a basis for other frameworks to understand how game elements are connected to ludonarrative (Figs. 2 and 3).

Table 2 Donoghue LAF model components [10]

| Ludonarrative Category	Provocations for Classification/Scale
Railroad/Sandbox	Is there an ordered set of objectives or goals? What is the player experience and player journey? How much variation would there be between different playthroughs and playstyles? What kind of agency does the player have? Is there a structured temporality? Are levels designed to allow for player choice?
Character Driven/World Driven	What kind of perspective is the player provided? Does it change at any point? If so, what does the change indicate? Where is the narrative focus? How is narrative/gameplay information delivered to the player? Visuals Are there multiple streams of temporality? Micronarrative
Emergent/Embedded	To what degree does the game have an authored narrative/ an authored play experience? How much space is there for player freedom and expression? Focalisation granularity etc. Agency
Actor/Avatar	Where is the player's perspective? How do the ludic systems interact with perspective? Are there diegetic elements to the game? Does the PC have a unique voice? How do they interact with NPCs?
Affect/Cognitive	Do the ludic and physical elements of the game develop an embodied sense of the emotions present in the game? Is the player invested in the emotions present in the game or the game systems? Are there particular moments of emotional or affective responses/triggers in the narrative or within the embodied ludic interface?

Ludic - Railroad/Sandbox

Narrative - Railroad/Sandbox
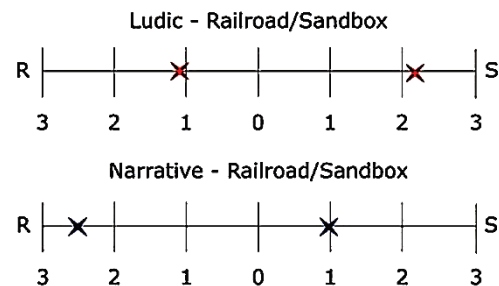
Figure 2 Donoghue scale showing Ludic and Narrative elements inside of Hollow Knight game [10]

A more creative process of creating a method is by research through design as seen in Dodds [11]. He went on to explore what are the design requirements of a ludonarrative consistent game system. Through the creation and assessment, Dodds evaluated an idea of a ludonarrative consistent game. To accomplish this, he created a few

prototypes (demo game stages) which consist of small narratives influenced by the player's actions. The explored prototype gave a new approach to designing games and creating ludonarrative consistency but did not offer a set system to do this. What can be taken from this work is the approach to each piece of the game. The prototypes explored are Player intention, Narrative agency, Dialogue, Player-character, Story development, and Combat and movement. Those prototypes are a piece of what Dodds calls *trait systems*. One such example is the clumsy trait (Fig. 4).
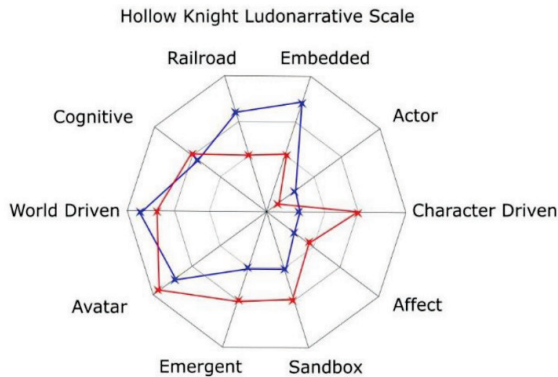
Figure 3 Donoghue LAF model web for the Hollow Knight game [10]

"An example from the prototype is the clumsy trait. The clumsy actions looked for by the system are: rolling in the dirt, rolling in water, breaking objects, 'accidentally' hitting unaggressive non-player-characters (NPCs), and 'accidentally' killing wildlife. Accidentally, in this case, is defined by whether the player continues the behaviour or not. The number of clumsy actions required for the clumsy trait to be assigned is two." [11]
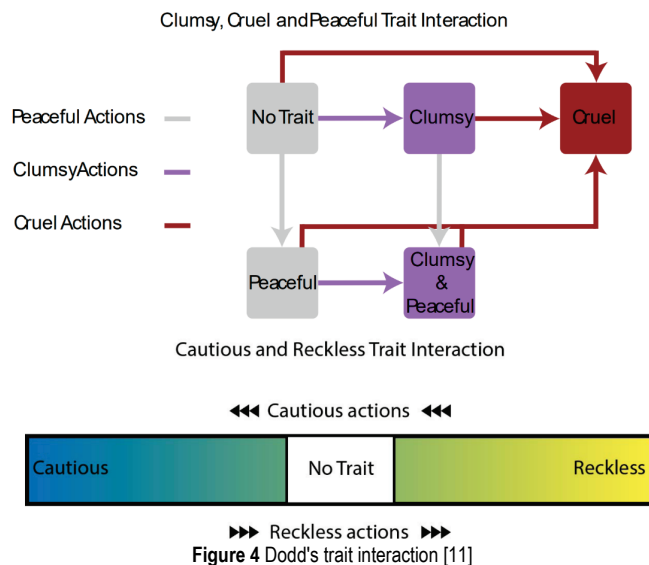

Figure 4 Dodd's trait interaction [11]

There are multiple traits inside the prototype, which are assigned in a specific way as explained in the aforementioned blockquote. It is important to be aware of the different requirements for the trait system. The requirements are narrative potential, mechanical cohesion and trait interaction.

Narrative potential describes how much traits can change and interact with the narrative. This influence can be a minor one like the use of colours in the game for different game choices, or it can be a major one like altering the story progression.

Mechanical cohesion explains how everything is connected, while primarily focusing on the connection between traits, story and game mechanics.

Trait interaction is the connection between multiple traits inside the same system. Some traits can coexist or even influence one another while others do not allow for this. The main basis for using those requirements is ludonarrative consistency. It is important to keep in mind all the different aspects while creating the story. It needs to be created simultaneously with narrative and gameplay in mind or it will be very difficult to incorporate one after the other is finished.

Because of how the trait interaction is made (mainly focusing on the gameplay and interaction), there is a lack of cohesion with the narrative. To fix this problem, the Weather system was created. The weather system used game development software, which allows switching between different light and weather conditions. This produced different times of day (morning, mid-day, evening) or different weather (sunny, cloudy) which would allude to time progression. This is an excellent example of how smaller things can make connections between the main components. To emphasize the weather system and even trait system, Dodds [11] uses artistic freedom to show the distinctions in choices and settings.

In later Aarseth's work [12], his model explains a common ground between narratology and ludology. He offers that games can go from pure story to pure game experience depending on how they are created. Their elements dictate how much story or game elements the game will contain and according to those elements, the game goes from narrative to ludic. This can be used to check the type of the game or certain progressions and see if there is a possible adaptation (connection) between the story and the game. Aarseth called these element events. Although those elements have different uses, they serve the same purpose inside the narrative and the games. Those common elements are:

- World - Ludic and extra ludic spaces where the plot/progress is happening.
- Objects, which determine the degree of player agency in a game.
- Static (usable objects).
- Destructible (e.g. buildings in RTS games, where RTS – Real Time Strategy; subgenre of Strategy games. https://blog.acer.com/en/discussion/117/what-is-an-rts-game accessed on 12/12/2023).
- Changeable (e.g. weapons in Resident Evil 4).
- Creatable (e.g. armour in World of Warcraft).
- Inventible (creatures in Spore).
- Agents (or Characters) are classified in terms of their depth/shallowness and their malleability/potential for player control. Agents are divided into three types:
- Bots (no individual identity).
- Shallow characters (little or no personality, have names and individual appearance).
- Deep characters.

- Events can be categorised by their status and the presence of kernels and satellites. They are split into:
- Fully plotted (pure story).
- Dynamic satellites (playable story).
- Dynamic kernels (multipath/quest games).
- No kernels (pure game).

Aarseth claims that every game and story has these 4 elements. It is important to note that some elements are more descriptive of ludical aspects while others are for narrative.

Taking the MDA as its basis, Maraffi [14] has created the SGRplay framework. The MDA framework by Hunicke et al. [13] focuses on game development stages instead of elements. Maraffi uses an idea of the components and creates the three-part survey in combination with the Venn diagram. Using the three types split from MDA, the SGRplay framework analyses three types of play. Maraffi states, "My framework seeks to address claims that gamers are not performers by showing how avatar acting affordances are increasing in many RPG games".

The survey from the framework serves as a connector between game avatars with the players. It tries to evaluate RPG experience as well as player understatement. This is done with a combination of questions, which are asked for each distinct part of the survey (types). Three parts of the survey are Narrative features, Competitive features and Performative features.

The survey then needs to be analysed following the number patterns (answers are numbers, which range from 1 to 10). These numbers are calculated and following a provided formula for the Game Playfulness Factor. When the survey and calculations are completed, the results are then split inside the Venn diagram as shown in Fig. 5.
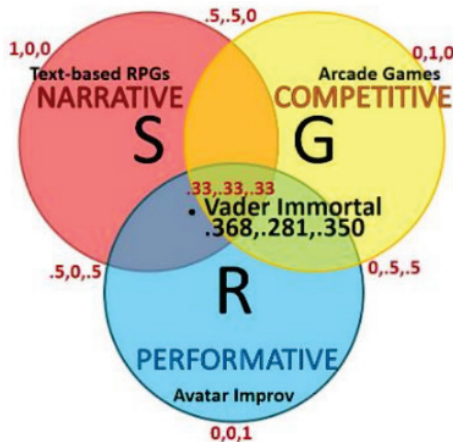

Figure 5 The SGRplay framework - Venn diagram of survey values [14]

In connection to the game avatars and players, Purnomo et al. [15] constructed a formula called GAMING (Gaming system, Attributes, Mechanics, Indexicalities, Narratives and Geosocial systems). One of the main inspirations for the GAMING formula is Hymes' SPEAKING formula ("Hymes' SPEAKING, which stands for Settings and Scenes, Participants, Ends, Act Sequences, Keys, Instrumentalities, Norms, and Genres; The formula is not intended to examine and explore the prosthetic nature of games" [15]). The

GAMING formula classifies the game avatars into three categories:

- Gamer-centric: usually created through character creation tools, e.g. Elder Scroll V: Skyrim, Final Fantasy XIV, Soul Calibur VI, etc.
- Game-centric: possible limited customisations for avatars. Mostly possible slight modifications like costumes or growth options.
- Gaming-centric: has options like the previous two, but the avatar's function is different. It is used mostly for communication with other players instead of focusing on the game progression, e.g. Dragon Ball Fighter Z.

Avatar classification is an example of how different avatar types affects the game. Some are more relevant to the game and its progress while others are only a tool for the player to use. Depending on the games and the avatars, classifications through game elements vary. Not all aspects of avatar use are available or needed in different game genres (and game progressions).

	GAMING	SPEAKING
Worlds	**Geosocial systems**	**Settings**
		Scenes
Objects	Gaming systems	Instrumentalities
Agents	**Attributes**	**Participants**
	Mechanics	
Events	Narratives	Act Sequences
	Indexicalities	Ends
		Keys
		Norms
		Genres

Figure 6 Connection between Aarseth [12] method with GAMING and SPEAKING formulas

Fig. 6 presents the connection between the three ideas ([12], Hymes SPEAKING formula and the GAMING formula). It is shown how three different ways of describing certain elements are diversified. In Aarseth's [12] work he has fewer elements, while GAMING and SPEAKING formulas offer few expansions on the same ideas (e.g. Worlds > Geosocial systems > Settings and Scenes).

The diversity of elements shown for the GAMING formula is used because the uses of the different methods and formulas have different goals. If used in cohesion shown in Fig. 6, they serve as a detailed description of certain aspects, like the game avatar types. It stands to show how the communication between the player and avatar is done through game elements. Knowledge gained through the integration of different ideas shows specific relations that can be useful during the game development stage.

3.3 Methods as a Creation of Ludonarrative

In a similar way to Aarseth [12], Hunicke et al. [13] created the MDA framework. Instead of having elements of game, they used stages of game development as a basis for this framework. Because stages differ, there needs to be a way to connect those stages and show their correlations. This framework breaks down the game into components and their design counterparts (Fig. 7).
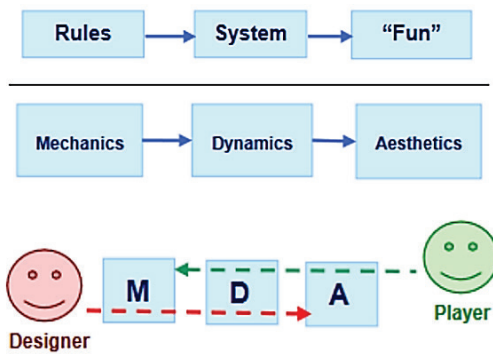
Figure 7 The MDA framework: components, counterparts and designer-player connection [13]

- Mechanics – the technical part of games, their components that are constructed from algorithms (the rules of the game).
- Dynamics – the correlation between the behaviour of the mechanics being influenced by players' inputs (how the game functions).
- Aesthetics – the emotional response in the player during gameplay (experience).

Games use different engaging factors. Some are more focused on cooperation, some on visual feedback while others on challenges. These main elements are usually catered towards a specific target audience and type of game.

Dynamics differ because they need to connect the player with the game. This is accomplished by giving the player an option of how the player can affect the game. If there are various options, different players can play in different ways (or the same player can play the game with different approaches). An example of this idea is Monopoly (1935) which leaves the decisions to the player while always having the same mechanics (throwing dice, buying-selling the properties). Although the rules are always the same, the game varies with the player's approach.

Mechanics are the backbone of games. Those are the various actions which will be allowed for the player to control together with the game's content. Well-structured mechanics create for better game experience.

Tunning is more like the hidden step of the MDA framework. Tunning stands for the acts of testing, analysing and adapting (tunning) the game. An act of tuning happens whenever we try to iteratively refine the game to achieve a certain balance. This can be accomplished if there is a certain idea of how the game should be played. In most cases, the most important thing is a balance between all game aspects. Alongside the components, Fig. 6 shows the connection between the developer sides of the game with the player side. Those two sides can be seen as separate components. The differences in these perspectives are important to grasp. The player's view (experience of the game) starts from the aesthetics part (visual feeling of the game, etc.) and then goes to the mechanics which is the last one explored. The designer's side is the opposite, starting from mechanics which are constructed and going to the aesthetics.

Koenitz [16] proposes IDN framework, which is used more as a tool for interactive storytelling than for game development. Even though it has different use, the application is similar. The main basis for this framework is how it is shown. The basic view is to show it in three parts:

- System – describes the digital artefact. This also includes codes, programs and hardware. (p. 4)
- Process – created with users' interaction with the system. Actions by which the system is used describe the process. (p. 7)
- Product – Narrative created through the act of process (instantiated narrative).

The system is the primary part. After the user starts to engage with the system, the process is created. Since this process can vary, this results in different products, which Koenitz calls instantiated narrative. IDN framework finds its use in the analysis. It can be applied to diverse works to understand the structure of the narrative and storytelling. To show this idea in a better way he created a subcategory of system called Protostory. This subcategory consists of 4 parts (Fig. 8); Environment Definitions, Assets, Settings and Narrative Design.
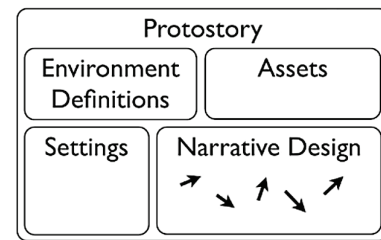

Figure 8 Koenitz IDN System elements [16]

To keep a flexible use of the system, the term narrative design is used. The narrative design describes the flexibility of narrative presentation while the vectors (arrows) show specific directions in those narratives.

One of the most practical methods is proposed by Despain & Ash [17]. They have created a method that is used for game development while also achieving ludonarrative harmony. The process of creating the model was done by establishing two different game designs for the two different directions (ludonarrative harmony and ludonarrative dissonance). While keeping the flow between the elements, the harmony should not be broken and if strayed from that, dissonance is created. Fig. 9 shows the two models.

The two models can be used together to keep track of possible deviations from harmony to dissonance.

Phases presented in Ludonarrative Harmony model are used for testing. Phase One analyses the 4 different outlines of the model (mechanic, narrative, context and emotional fulfilment) which are put in a loop to show their correlation. The 4 outlines are used to identify core aspects of each (actions taken by the player for mechanics; how the story is told for narrative and how it adds to the mechanics; context is the reason behind those actions and how it is communicated to the player why this story exists; emotional fulfilment shows connection and reason to continue using certain actions). For an easier understanding of how to explain those elements, Despain and Ash have created 4 questions:

- Mechanic: How is the player doing an action?
- Narrative: Why is the player doing the action?

- Context: Where is that action happening (broadly); Does the action fulfil the narrative; and why does the action matter?
- Emotional Fulfilment: What purpose does that action serve for the player?

Ludonarrative Harmony Model
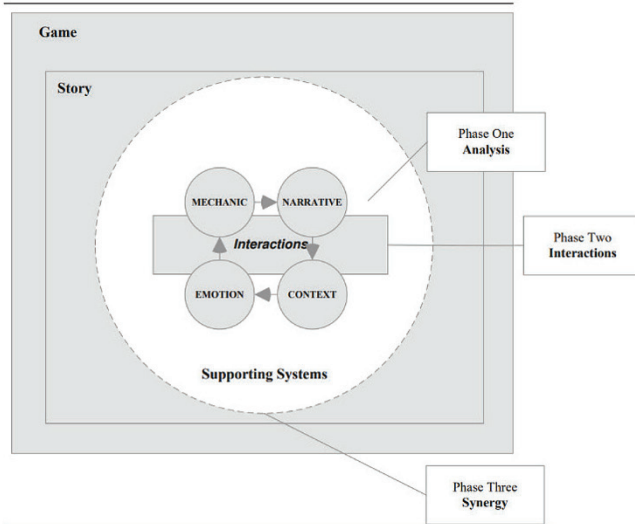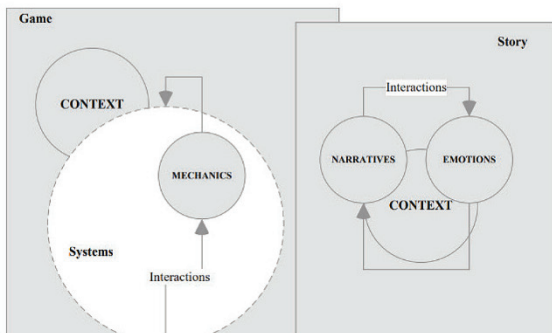

Ludonarrative Dissonance Model

Figure 9 Ludonarrative harmony model and Ludonarrative dissonance model [17]

The models use careful iteration process during which the elements are explained, polished and structured. Proposed way of using this model is during the game creation. This way it is possible to always come back and iterate what works and what does not in the model for easier game development. Despain and ash with the proposal of the model also created a demo game, which they present through the model examples. Later Söderlund and Hedlund [18] created an aretfact using the same models and then tested it, proving the validity of Despain and Ash model.

4 DISCUSSION

Methods presented here are some of the works done regarding the topic of ludonarrative. They are created to be used as a way of studying or understanding ludonarrative and its possible problems. The table below shows methods reviewed in this paper and which ones have a practical or theoretical use.

Table 3 Summarization of methods

Authors / Offers…	An understanding of ludonarrative	A way to review or understand ludonarrative in a game	A way to create or avoid ludonarrative in a game
Aarseth	✓	✓	✗
Murray	✓	✗	✗
Toh	✓	✓	✗
Jenkins	✓	✗	✗
Louchart et al.	✓	✓	✗
Seraphine	✓	✓	✗
Roth	✓	✓	✗
Donoghue	✓	✓	✗
Dodds	✓	✓	✗
Hunicke et al.	✓	✗	✓
Maraffi	✓	✓	✗
Purnomo et al.	✓	✓	✗
Koenitz	✓	✗	✓
Despain and Ash	✓	✓	✓

As shown in Tab. 3, most of the methods reviewed in this paper provide a deeper understanding of ludonarrative. Even though most of the authors help us on how to find and understand ludonarrative in games, only some provide a practical way of creating or avoiding ludonarrative.

Jenkins [5] presents an idea that interaction between the player and the game needs to be catered and created. To create a narrative in the game it is important to portray the story the game wishes to tell the player. Some games are too abstract to tell that story, such as *Tetris* (1984). In addition, because of the abstract nature of some games, it is important to look at the whole concept of the game and not only the game itself. To see the whole concept, we try to structure the story and the narrative reasonably [19]. That is why it is important to look at the whole concept of the game and not only the game itself. Games are special because of the possible interaction between the player and the medium used. Games invite the player to interact with the storyline which in turn makes them more immersed in the game [20]. Jenkins [5] offers Environmental storytelling as a solution to connect the player and the game. Environmental storytelling is a notion of combining physical space and its elements with the story previously known to most.

Theoretical methods help us understand the problem, but practical ones can be more suited for not having the problem. Most of the work focus on understanding how something is created. Although there are proposals for how to avoid, for example ludonarrative dissonance, there are not plenty of works done on proposing and showing a clear way to do so. Authors like Aarseth, Murray and Toh present an understanding of ludonarrative. That understanding always goes further with each subsequent work from other authors going into details that are more specific. Each step is questioned, tested, reviewed and understood. Authors like Donoghue even propose ways on how to review the games and present the results. Dodds, by keeping all this in mind creates a demo game. Although the development of this demo game has valid steps, it is hard to reproduce. This leaves us with a question how to create a game while adhering to knowledge gained through all those works. Ludonarrative

dissonance, depending on how it is viewed, can be problematic for some games. By considering the games impact, there is a possibility to reduce the negatives while also further enhancing player's experience. As proposed by Despain and Ash [17] and Swords [21], there are approaches to game development which take into account game creation. Those methods are not meant to be used as a reviewing tool of the game after its release, but as a guidance tool. It could be more theoretical where certain steps are followed with open structure (Despain and Ash) or more structured where specific steps need to be satisfied (Swords). Swords has created *The Forest Paths* methods that is used for narrative design. It takes specific steps in which storytelling is enabled using game as a medium.

We suggest that by reviewing other methods that are used for checking ludonarrative instances in games, more structured methods can be created which don't allow for mistakes, which can lead to loss of game immersion, game interest or game playability. Those methods would need to be catered for beginning stages of game development when the structure is most important. Such methods can be followed as a guide to know exactly what needs to be developed and if it does not work, check if something new can be added while providing value to the game. One of the problems, which occur after the game is finished, is unintentional ludonarrative dissonance. This can be brought by not having a clear understanding of fundamental game elements and their cohesion to others. It often happens that some things do not work or could not be developed so others are quickly added to fill the gap. That not only methods made for early stages of game development can guide developers, but they can be used as a teaching tool for new people in the industry or even students. This paper serves a research purpose for the creation of the methodology, which will be created and presented. This method will focus on finding applications for the ideation stage of game development from already mentioned methods.

5 CONCLUSION

With deeper understanding of how games work, more value is presented to the developers of said games. Studies such as ones on ludonarrative provide an informative outlook on games as finished products and their impact on players. That information can be valuable for the new games being created. Although information is helpful, it takes a lot of time and effort to adapt it into creative processes.

Authors that are reviewed in this paper took that information and created methods that either help with reviewing which parts cause ludonarrative or offer structured ways on how to design games to avoid some of the ludonarrative pitfalls. Methods such as those can be used inside game development to grasp an idea on how to approach specific game elements during the development. Depending on game type, methods from authors such as Despain and Ash, Koenitz or Swords can provide tools or ideas on how to design and avoid certain ludonarrative misteps. Even though those methods can be used, it does not mean they are catered for various game genres and types.

Methods presented are only a small piece of game development that needs to be used carefully as to not lock ourselves into a box on how you should go about creating a game. Ideally methods used in cohesion with the right approach and adaptability could be more suited for ideation stage of game development. If a method is created that adheres to those other methods and expands upon them with a broader perspective, it could help game developers to create better games while adhering to target audience.

6 REFERENCES

[1] Hocking. C. (October 07, 2007.) Ludonarrative Dissonance in Bioshock: The problem of what game is about [Blog post]. Click Nothing, TypePad. Retrieved April 15, 2024 from https://www.clicknothing.com/click_nothing/2007/10/ludonarrative-d.html

[2] Aarseth, E. J. (1997). Cybertext, Perspectives on Ergodic Literature. *Leonardo Music Journal, 8*, 77. https://doi.org/10.2307/1513408

[3] Murray, J. H. (1997). *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. Simon and Schuster.

[4] Toh, W. (2015). A Multimodal Discourse Analysis of Video Games: A Ludonarrative Model. *Thesis*.

[5] Jenkins, H. (2002). Game Design as Narrative Architecture. Computer, 44.

[6] Louchart, S., Aylett, R., Dias, J., Figueiredo, R. & Paiva, A. (2008). Authoring emergent narrative-based games.

[7] Seraphine, F. J. N. (2016). Ludonarrative Dissonance: Is Storytelling About Reaching Harmony?

[8] Frasca, G. (2013). Simulation versus Narrative: Introduction to Ludology.

[9] Roth, C. (2019). Video Game Violence from the Perspective of Cognitive Psychology. Role Identification and Role Distancing in A WAY OUT. In Video Game Violence from the Perspective of Cognitive Psychology. Role Identification and Role Distancing in A WAY OUT (pp. 53–62). Transcript Verlag. https://doi.org/10.1515/9783839450512-006

[10] Donoghue, A. (2021). The quest for ludonarrative: Designing a ludonarrative analytical framework for analysis and design of ludonarrative in games through analysed case studies: Hollow Knight, Celeste, and Brothers: A Tale of Two Sons

[11] Dodds, R. (2021). An Exploration of Ludonarrative Consistent Game Systems.

[12] Aarseth, E. (2012). A narrative theory of games. Proceedings of the International Conference on the Foundations of Digital Games, 129–133. https://doi.org/10.1145/2282338.2282365

[13] Hunicke, R., LeBlanc, M. & Zubek, R. (2004). MDA: A Formal Approach to Game Design and Game Research.

[14] Maraffi, C. (2022). Multimodal Framework for Enhancing RPG Playfulness through Avatar Acting Affordances (SSRN Scholarly Paper 4183800; Issue 4183800).

[15] Purnomo, Sf. L. A. Purnama, Sf. L. S., Untari, L., Asiyah, N. & Anggraini, N. (2019). Gamemunication: Prosthetic Communication Ethnography of Game Avatars. *Jurnal Komunikasi: Malaysian Journal of Communication, 35*(4), Article 4. https://doi.org/10.17576/JKMJC-2019-3504-01

[16] Koenitz, H. (2010). Towards a Theoretical Framework for Interactive Digital Narrative. In R. Aylett, M. Y. Lim, S. Louchart, P. Petta, & M. Riedl (Eds.), Interactive Storytelling (pp. 176–185). Springer. https://doi.org/10.1007/978-3-642-16638-9_22

[17] Despain, W. & Ash, L. (2016). Designing For Ludonarrative Harmony.

[18] Söderlund, S. & Hedlund, R. (2022). Mekaniker och narrativ i harmoni.

[19] Lindley, C. (2005). Story and Narrative Structures in Computer Games 1.

[20] Pearce, C. (2004). Towards a Game Theory of Game. First Person: New Media as Story, Performance, and Game.

[21] Swords, A. (2023, May 21). The Forest Paths Method for Narrative Design. Forest Paths Method.

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