

# Game Mechanics as Narrative Mode



Alex Mitchell 

**Abstract** Focusing on game mechanics as a narrative mode, rather than considering story and game as two separate but related experiences, allows narrative designers to take a more integrated approach to authoring interactive digital narratives. In this chapter, I explore two ways of doing this: by making use of game mechanics as an experiential metaphor and by using poetic gameplay. I provide a survey of work that has explored each of these approaches and then suggest ways of making use of both techniques together. I then argue that both the metaphoric possibilities of game mechanics for storytelling and careful undermining of players' expectations for gameplay, provide powerful tools for authors to create compelling interactive digital narratives.

## 1 Introduction

As a player interacts with a story-focused game, the moment-by-moment actions the player is taking, based on the game mechanics, potentially work together with the other modalities (visual, auditory, and verbal) to create a story experience. By focusing on the game mechanics as a narrative mode, rather than considering story and game as two separate but related experiences, a narrative designer can more strongly integrate the gameplay and the story.

One way to do this is to make use of the game mechanics as an *experiential metaphor*, in which the player's experience of the game mechanics provides a means of understanding something else within the narrative. For example, in the game *Gravitation* [1], one of the core game mechanics involves throwing a ball back and forth with a child, an action that comes to represent the playable character's relationship with their son [2].

Another approach is using *poetic gameplay*, where the details of the game mechanics deliberately undermine player expectations to foreground certain aspects of the game experience and connect these elements to the unfolding narrative. This

---

A. Mitchell (✉)  
National University of Singapore, Singapore, Singapore  
e-mail: [alexm@nus.edu.sg](mailto:alexm@nus.edu.sg)

can be seen in *Gravitation*, in the tension between the above-mentioned ball-throwing mechanic and the other core game mechanic, which involves exploring the game world and collecting “stars”. The game is designed such that it is impossible to succeed at both mechanics, and therefore, at the goals these mechanics support, foregrounding this tension and encouraging the player to reflect on what this means [2, 3].

This chapter explores the ways that the design of the game mechanics, both in terms of the use of game mechanics as metaphor and through poetic gameplay, can form an integral part of the toolkit available for authoring an interactive story. Based on a survey of work that has explored these two approaches to using game mechanics as a narrative mode, I argue that authors who want to make use of game mechanics as part of storytelling should carefully consider the use of both approaches together. As can be seen in the examples presented above, these two approaches are closely related. When used in a complementary fashion, they can help an author of an interactive narrative to create a more cohesive integration between the game mechanics and the narrative.

## 2 Defining Game Mechanics and Narrative

Before talking about the role of game mechanics in creating an interactive narrative, it is important to clearly define what I mean by “game mechanics” and “(interactive) narrative”.

### 2.1 *Game Mechanics*

As with many concepts in game design and game studies, the idea of game mechanics is at once immediately obvious and endlessly debated and redefined [4]. For the purposes of this chapter, I draw on Sicart’s [5] definition of game mechanics as the “methods invoked by agents, designed for interaction with the game state”. For Sicart, the notion of an “agent” is not limited to the human player, but also includes “artificial agents” that are “part of the computer system” [5]. In the context of an interactive narrative, this could include, for example, a drama manager and/or agents controlling characters in a multi-agent system [6]. Sicart’s definition of game mechanics is consistent with Nealen et al.’s [7] definition of rules as “all state changes/transitions in the game”, and mechanics as “a subset of these rules that might be dependent on the game state, and can be (directly or indirectly) invoked by the player/agent through the controls.” Nealen et al. go on to also consider controls to be “the direct manipulation (hardware) actions provided to the player”, and interface to be “the entirety of the input/output feedback loop”, of which the controls are a component. Thus, the player manipulates the controls to invoke the game mechanics, which, in turn, changes the game state, which is reflected in the interface, and perceived by the

player. This is similar to Aarseth's [8] notion of the Game Object, which consists of a semiotic and a mechanical layer. Aarseth's semiotic layer "informs the player about the game world and the game state", whereas the mechanical layer affords game actions by means of the game mechanics.

## 2.2 *Narrative*

As with "game mechanics", the terms "narrative", and perhaps more problematically "interactive narrative" (whether or not it is coupled with "digital"), are equally contested. For this chapter, I follow other scholars such as Dubbelman [9], Koenitz [10], and Roth et al. [11] and adopt a cognitive narratological perspective on narrative [12, 13]. From this viewpoint, as Ryan argues, "narrative is a mental image—a cognitive construct—built by the interpreter as a response to the text" [14]. As Dubbelman suggests, this cognitive narratological perspective enables us to look beyond the traditional devices used for narrative expression when considering how to tell a story in a game, and also to consider "the procedural devices that are responsible for creating events real time, like game mechanics and rules, since the player's engagement with these devices can trigger the construction of stories in the embodied mind of the player" [9].

Similarly, Larsen and Schoenau-Fog [15] take the position that there is a "narrative quality" to game mechanics, which contributes to the player's experience of the narrative in a game. They argue that a game consists of the mechanics and the context. By mechanics, they follow Frasca's [16] categorization of mechanics into manipulation rules, goal rules, and meta rules, adding in an additional layer of "system rules" to represent any rules the player does not directly interact with. By context, they mean the various ways in which the game is presented to the player, including the graphics, audio, and so forth. As they explain, these elements are essential as "mechanics by themselves are often hidden from the player". At the same time, the context is more than simply a way of making the mechanics visible—the two elements "combine when the player begins to play", from which the meaning of the game emerges. Larsen and Schoenau-Fog see this process as paralleling the Mechanics-Dynamics-Aesthetics (MDA) model [17], with the dynamics combined with the context to create meaning, which then leads to the experience of the narrative. This narrative can be viewed as consisting of a resulting "aesthetic" experience, similar to the MDA model, plus an "after story", or the recollection of the narrative as experienced by the player during play. It is important to note that under the MDA model, "[a]esthetics describes the desirable emotional responses evoked in the player, when she interacts with the game system" [17], rather than audio-visual elements. In fact, Larsen and Schoenau-Fog highlight that "these aesthetics are understood purely as the aesthetic qualities of the ludic elements (the mechanics), and disbaring any of the context" [15]. This is consistent with Roth et al.'s [11] use of Koentiz's [10] System-Process-Product (SPP) model of interactive digital narratives to explain how the player engages in a process of interpretation that forms a double-hermeneutic

circle, or hermeneutic strip. In this model, the player is simultaneously engaged in interpretation of their interaction with the system and interpretation of the currently instantiated narrative.

Chew's [18] work on the role of interactivity in storytelling has strong similarities with the above discussion, although Chew focuses on the idea of interactivity more generally as a narrative "mode". Drawing on Page's [19] definition of mode as "[a] system of choices used to communicate meaning", and Kress's [20] consideration of mode as "a socially shaped and culturally given semiotic resource for making meaning", Chew argues that "interactivity can contribute to meaning-making and can be considered a mode [but] does not function alone... It needs to work with narrative content and other perceptual and semiotic modes". Here Chew is focusing on interactivity rather than game mechanics, but she later extends this argument to include game mechanics [2, 21]. This later notion of game mechanics as a narrative mode, which I follow in this chapter, is consistent with Larsen and Schoenau-Fog's model of the narrative quality of game mechanics, and Roth et al.'s double-hermeneutic circles.

### 3 The Role of Game Mechanics in Meaning-Making

There has been increasing interest in the question, not of whether games can tell stories, but *how* games can tell stories [15, 22–32]. There are several strategies that authors can take to create meaning within their interactive stories. One way is to make use of traditional storytelling techniques at the level of context or the semiotic layer, while at the same time avoiding what is often referred to as ludonarrative dissonance [33], or a disconnect between embedded narrative and the game mechanics. Although potentially effective, this is a very traditional approach to game storytelling, one that fails to see game mechanics as an active, integral part of the process of forming the cognitive construct that is the narrative in the player's mind. It also ignores the possibility that some forms of dissonance, and the effort required to overcome or make sense of that dissonance, as Roth et al. [11] have argued, can itself form part of the process of meaning-making.

An alternative approach is to focus specifically on the design of the game mechanics to convey the desired narrative and create the intended meaning. Given the above discussion, e.g., that game mechanics work together with the other modes (context in Larsen and Schoenau-Fog's model, or the semiotic layer to use Aarseth's terminology) to create narrative meaning, it is important to consider, in the context of this volume, what can be done to help authors to make use of game mechanics as an integral part of their efforts to tell interactive stories. One way to do this is to harness the ability of game mechanics to encourage meaning-making through the use of *game mechanics as metaphor* [30, 34, 35]. The other possibility that I will discuss in this chapter is to undermine a player's expectations regarding the game mechanics, making use of my notion of *poetic gameplay* [3, 36, 37].

I will begin by discussing the idea of game mechanics as metaphor in the following subsection, then shift to a focus on poetic gameplay.

### 3.1 *Game Mechanics as Metaphor*

There has been considerable attention paid to the idea of using game mechanics as metaphors in games that attempt to create some meaning through play [34, 35, 38–50]. Here, I will focus largely on the work by Rusch [41–46], Begy [34, 47], and Möring [35, 48–50]. I begin by considering how narrative meaning is created in a game and the role of game mechanics in this process. This leads to the potential of using metaphor to create meaning.

According to Rusch and Weise:

For a game to successfully convey its message it needs to be implemented within the rule system. It has to become tangible to the player in the moment-to-moment game-play. It must make use of the medium-specific possibilities to get the experience across, and strategies that worked well in traditional media may not work the same way in games. [42]

One way to do this, they argue, is through the use of metaphor, as “the essence of metaphor is understanding and experiencing one kind of thing in terms of another” [51] (quoted in [42]).

#### 3.1.1 *Interface Metaphors and Experiential Metaphors*

As Rusch and Weise argue, games are always a mediated experience [42]. The player can’t reach into the screen and touch the game world. Everything is mediated through the game interface. As a result, there is a need to represent the game world in the interface. This involves providing the player with *interface metaphors* through a systematic process of abstraction [52], deciding what is implemented into the rule system and what is purely fictional (in Juul’s [53] sense of the terms). An important point here is that there is a strong connection between metaphor and meaning-making. As Rusch and Weise explain, “[w]e classify our experiences in terms of complex concepts, so called *multidimensional gestalts*... consist[ing] of a variety of structural elements (dimensions) that have a fairly obvious experiential basis” [42]. This builds from Lakoff and Johnson’s position that:

It is by means of conceptualising our experiences in this manner that we pick out the “important” aspects of an experience. And by picking out what is “important” in the experience, we can categorize the experience, understand it, and remember it. [51] (quoted in [42])

This suggests that metaphors, when embodied in game mechanics, don’t just enable the player to successfully interact with the game or interactive narrative, but also to *make sense* of the experience, focus on the “important” aspects, and internalize these meanings. It also suggests that game designers can make use of the various

elements of the game experience, its participants, parts, stages, linear sequence, and purpose [51], when designing a metaphor for use in a game.

However, games traditionally use interface metaphors to provide abstractions of concrete, physical concepts, such as shooting a gun or running. These concrete experiences are then abstracted into interface metaphors, such as pressing a button on a controller to shoot or pushing an analogue stick forward to run. There is a clear mapping [54] between the interface action and the game action. The challenge when trying to represent more abstract concepts, such as LOVE,<sup>1</sup> is figuring out the *experiential* dimension, and how this can be abstracted and translated into the game world, in terms of goals and obstacles. Essentially, the abstract concept needs to first be made concrete before it is again abstracted as a metaphor.

Rusch and Weise suggest that this can be done by recognizing that complex abstract concepts can be considered *experiential gestalts*, and then using these experiential gestalts to structure the concrete goals and obstacles in the game world that correspond to the abstract concept. They provide two examples of games that they claim do this effectively: *Passage* [55], which represents the abstract concept of LOVE and *Ico* [56], which represents COMPANIONSHIP. These games use straightforward interface metaphors to represent an abstract concept. For example, the game *Passage* involves walking through a maze together with your “spouse”, and *Ico* gives the player’s character a companion whom you need to always be with.

Rusch and Weise argue that it is possible to use more complex, what they call “more visible”, multi-modal interface metaphors to expand the range of experiences that can be represented metaphorically. However, this suggests a possible danger in terms of the use of abstraction:

To avoid breaking the “immersive spell” with interface metaphors that draw attention to themselves, the physical concepts employed tend to be either very simple to begin with or, if they are very complex, they are often so abstracted that they can be conveyed in a simple manner. This strategy may foster immersion, but the drawback is that a lot of meaning potential is lost. [42]

To go beyond this, they argue that using a more complex *experiential metaphor* that draws the connections to the surface and makes them visible, while possibly disrupting immersion, can actually be a powerful way to encourage meaning-making:

These sense-making processes are largely unconscious. To make games that successfully tackle abstract ideas, it is crucial to make these sense-making processes conscious again, to abstract from the abstract and to make it concrete by finding suitable metaphors that can be enacted by the player. [42]

This can be seen in their discussion of the games *Vanguard* [57], which provides a complex interface for parleying, and *Mr. Mosquito* [58], with its highly sexualized depiction of a mosquito’s process of feeding. As the authors suggest, “[h]aving to identify metaphors for everyday experiences to bridge this gap can make the player see the usual from an unusual perspective” [42].

---

<sup>1</sup> Following Rusch and Weise [42], I adopt Lakoff and Johnson’s [51] convention of writing concepts represented by a metaphor in capital letters.

The emphasis here, on the use of an unusual perspective and potentially deliberately breaking immersion, is very similar to the process of foregrounding and defamiliarization that I will discuss below, in the context of my notion of poetic gameplay. I will return to this when discussing ways of combining these two approaches in interactive narratives.

### 3.1.2 Simulation and/versus Metaphor

At this point, it is worth considering the relationship, if any, between other approaches to meaning-making in games and the use of metaphor. Rusch [41] suggests that there are three different “design devices” that can be used to express deeper meanings in games: fictional alignment, procedurality, and experiential metaphors. Device I, *fictional alignment*, is very much the same as the avoidance of ludonarrative dissonance mentioned above. Rusch’s device II, *procedurality*, is the notion that a game can “foster reflection and understanding about *how things work*” [41]. This draws on Bogost’s procedural rhetoric [59], which involves “enhanc[ing] our understanding of the human condition... by representing the processes inherent in it” [41]. However, as Rusch argues in her analysis of *The Marriage* [60], this approach only works if the player is already aware of what the game is about. In this case, there is a fictional metaphor at work, in the form of the representation of the partners in the marriage as coloured squares, but the metaphor does not extend to the gameplay. This, Rusch suggests, can be compensated for by using an *experiential metaphor* of the type described earlier by Rusch and Weise [42], which Rusch proposes as device III.

Rusch is careful to point out that there is not a clear distinction between devices II and III—in fact, they simply focus on different aspects of the meaning-making process. Device II appeals more to the cognitive understanding of the concepts being represented, whereas device III works at an immediate, emotional level. Rusch suggests that designing for both levels can enhance game comprehension.

The relationship between simulation and metaphor is further explored by Begy [34]. He makes use of Bogost’s concept of the “simulation gap” [59, 61], or the “gap between the rule-based representation of a source system and a user’s subjectivity” [61] (quoted in [34]) to explain how, in the case of a simulation, the player is given a source system, whereas, in an experiential metaphor, interpretation tends to take place either during play or in later analysis, *without* the nature of the source system being provided ahead of time.<sup>2</sup> This aligns with Rusch’s comments regarding her difficulty understanding *The Marriage*, where Rusch struggled to make sense of the game due to her lack of understanding of the details of the source system, other than what was provided by the title of the game.

However, the notion of metaphor as used in game studies has been criticized by Möring [35, 48–50] as being somewhat problematic, particularly in terms of the

---

<sup>2</sup> Note that here the term “source” does not refer to the underlying computer source code of a given simulation. Instead, the “source” system refers to the simulation as experienced by the player, which is intended to represent a given “target” system, e.g., the thing being simulated.

(lack of) distinction between the concepts of simulation and metaphor. He considers this to be what he calls the “simulation/metaphor paradox”, referring to how the two concepts seem to come to mean the same thing in many discussions, but that the two terms continue to be used separately. In particular, he uses an analysis of the game *The Marriage* to show how the game is simultaneously a simulation and a metaphor. He contends that Juul [52], Rusch [41], and Bogost [62] see *The Marriage* as a metaphor, whereas Begy [47] sees it as a simulation, and uses his analysis of the game to attempt to clarify the distinction between the two concepts.

Looking back over the use of the term “simulation” in game studies, Möring observes that Frasca sees simulation as high-fidelity and detailed, by which one is able “to model a (source) system through a different system that maintains to someone some of the behaviours of the original system” [63] (in [50]), whereas a metaphor is viewed as abstract and low fidelity. Thus, the difference between simulation and metaphor is one of high versus low fidelity. Möring disputes this, arguing that simulations can be either high or low fidelity, detailed or abstract. Instead, Möring highlights Begy’s distinction between games as simulations, where the source system is communicated directly to the player, and games as metaphors, where the player figures out the outside system during play. Möring suggests this makes *The Marriage* a simulation—but of what?

Drawing on the same definition of metaphor as Rusch and Weise [42], Möring contends that most of our understanding of the world is structured through conceptual metaphors, in which “one conceptual domain is understood ‘in terms of another conceptual domain’” [51] (quoted in [48]). Conceptual metaphors provide us with a cognitive model for understanding the world. Following from this, Möring argues that conceptual metaphors of love form the basis for the simulation in *The Marriage*. In addition, *The Marriage* realizes the conceptual metaphor at the semiotic (Aarseth) layer, but also at the mechanical and dynamics level. Thus, the game is a *simulation of a metaphor*, and can only be interpreted by drawing on our conceptual model of that concept. However, Möring [35] emphasizes that “the game does not simulate love, and the player does not experience love when playing the game”. Instead, the game simulates “the spatial precondition of our metaphorically structured understanding of love”.

This discussion seems to imply that, as Rusch suggested, there is an important distinction here, possibly regarding the relationship between experiential metaphors and non-experiential metaphors. Perhaps the important distinction is not in terms of whether a metaphor is a simulation, but rather a question of *what* is being simulated?

When trying to resolve this, Möring suggests that “the notion of simulation should be taken for granted for all computer games, due to their procedural character”. Further, he proposes a distinction “between a first-order simulation and a second-order simulation, of which the latter can be considered metaphoric” [48]. He argues that a “self-contained game” refers to itself, e.g., *Space Invaders* [64] is about an alien invasion, represented by the pixels on the screen and the game mechanics of moving the player’s turret and shooting at the aliens. If the community interpreting the game has always seen it this way, then it is considered a first-order



simulation. However, if the simulation, in this case, *Space Invaders*, instead “associates the conventional object of a symbol with a seemingly unconventional object through a change of context” [48] (such as associating the alien invasion with societal frustration), then it can be seen as a metaphoric simulation, what he refers to as a *second-order simulation*.

Implicit here seems to be a claim that for the player to create new meaning from the experience, there is a need to structure the game mechanics (or the broader game experience) such that the player looks beyond the accepted interpretation of the first-order simulation and instead makes an unconventional association, resulting in a metaphoric (or second order) simulation. Although the game mechanics clearly simulate some source system (the pixels simulate an alien invasion), something about the mechanics or the game experience encourages the player to further interpret this source system as representing something else (the alien invasion represents societal frustration). This is reminiscent of Rusch and Weise’s [42] argument that using experiential metaphors in unexpected ways forces the player to work to make sense of the connection between the representation and represented, therefore, encouraging meaning-making and reflection. It also sounds similar to the process of foregrounding and defamiliarization that forms the core of my [36] notion of poetic gameplay.

### 3.1.3 Other Perspectives on Metaphor and Meaning in Games

At this point, it is worth noting that in psychology there are several competing theories about how people process metaphors that may or may not align with the above discussion, which draws exclusively on Lakoff and Johnson’s conceptual metaphor theory (CMT). As summarized by Karzmark [65], deliberate metaphor theory (DMT) distinguishes between a *deliberate* metaphor, where the receiver is made aware that a metaphor is being used, and a *non-deliberate* metaphor, where the receiver is unaware of the use of metaphor [66, 67]. A weaker version of this theory argues that a deliberate metaphor arises in the context of communicative purpose, contested metaphors, and humour [68]. Through an empirical study of player response to the game *Loneliness* [69], Karzmark [65] found that players who were aware of the metaphorical nature of the game showed a significant change in feelings of both loneliness and acceptedness after playing the game, whereas those who were unaware showed little or no change. This suggests that conscious awareness of metaphor may have a role in whether there is an emotional impact on the player. As Karzmark observes, *Loneliness* is an abstract game and can be considered an “artgame”, one where the use of metaphor is used to prompt reflection. In this case, it is possible that this reflection may be necessary for the game to have an emotional impact. He suggests that on repeat experience, players may be more likely to view the game mechanics metaphorically. The same may be true for players who are more experienced with this type of game.

Wardrip-Fruin [70] provides another perspective on meaning-making through game mechanics, building from his earlier concept of operational logics [71, 72] and his and Mateas’s notion of playable models (first mentioned in [73]). Wardrip-Fruin defines an operational logic as consisting of an abstract process and a communicative

role, where “an abstract process is a specification for how a process operates”, and “a communicative role describes how the logic is being employed by an author, as part of the larger game system, to communicate something to players” [70]. Playable models “encompass the abstract processes and structuring information that allow the model to operate as well as the types of domains the model is designed to represent and enable play in terms of” [74]. While Wardrip-Fruin suggests that most games make use of conventional operational logics and playable models, there are three approaches that game designers can use to create new meanings from games: alternative approaches, expansive approaches, and inventive approaches. I will briefly discuss expansive and inventive approaches here, as they parallel the approaches to metaphor I have covered above. I will return to alternative approaches in the discussion of poetic gameplay in Sect. 3.2 below.

According to Wardrip-Fruin, expansive approaches “start with an existing logic or model, then seek to add an additional communicative role, one that moves beyond the activities games conventionally make playable through this logic or model” [70]. An example of this approach can be seen in *Papers, Please* [75], where the use of a pattern-matching logic functions in two roles: that of the player’s need to engage in informational pattern matching, and the playable character’s need to satisfy bureaucratic requirements as a border guard. The deciphering required of the player due to this doubling of meaning is very similar to the sense-making required by an experiential metaphor. In addition, Wardrip-Fruin describes inventive approaches as the use of “one or more operational logics and/or playable models that aren’t in the common vocabulary of video games” [70]. An example of this approach can be seen in games that use social models, such as *Prom Week* [76] and *Blood and Laurels* [77]. Again, there is a similarity here with experiential metaphors.

### 3.1.4 Applying Experiential Metaphors to Interactive Stories

In the context of this chapter, it is important to acknowledge that most of the previous work discussed above, particularly that of Möring and Karzmark, is in the context of abstract games, without an explicit narrative framing. What happens if there is a consistent narrative presented as part of the experience, together with the use of metaphor in the game mechanics? To phrase this differently, what if there was more to the context, in Larsen and Schoenau-Fog’s sense of the term, rather than simply abstract shapes as in *The Marriage and Loneliness*? Would this narrative context work together with the game mechanics to create meaning? Interestingly, Larsen and Schoenau-Fog do not make any explicit reference to metaphor, although their description of the game *Papers, Please* seems to be drawing both on procedural rhetoric and experiential metaphors. Similarly, Sim [29] analyses several “wordless” games to explore the role of gameplay in conveying the narrative, without direct reference to metaphor. Finally, Dubbelman [9] also presents an analysis of several narrative games, exploring how the game mechanics directly influence the type of story being told, but without any direct use of concepts related to metaphor. However, all these discussions seem to imply that the game mechanics are enabling the player

to understand one thing (the narrative) in terms of another (the game mechanics). This suggests that it would be productive to consider how game mechanics as metaphor fits with these various discussions of narrative game mechanics.

Before doing this, I will consider another approach that has been taken to understand the use of game mechanics to create meaning: poetic gameplay.

## 3.2 *Poetic Gameplay*

The second approach to making use of game mechanics as a narrative mode that I will discuss draws on my concept of poetic gameplay [3]. This involves undermining the player's expectations for gameplay, to draw attention to the game mechanics and thereby encourage reflection. Whereas looking at game mechanics as metaphors focuses on *what* the mechanics mean, poetic gameplay instead focuses on *how* the mechanics mean.

### 3.2.1 **Defamiliarization and Meaning-Making**

When people repeatedly encounter a phenomenon, such as a game mechanic, they tend to become desensitized to that phenomenon, in a process known as automatization. This automatization can be disrupted through a deviation from expectations, what is referred to as foregrounding [78]. In the context of literature, Balint et al. [79] argue that this foregrounding can take the form of deviations, or specific textual features; perceptions, when a recipient perceives these deviations; and experiences, which is the way that a recipient senses the perceived deviation. This process of foregrounding is what Shklovsky [80] describes as defamiliarization, or the undermining of expectations so as to slow down perception and “impart the sensation of things as they are perceived, and not as they are known.” From the perspective of cognitive poetics, Tsur describes this delay in perception as resulting from “[s]ystematic disturbance of the categorization process [which] makes low-categorized information, as well as rich pre-categorial sensory information, available to consciousness” [81].

This process of defamiliarization or de-automatization has been connected to meaning-making. Leech and Short [82] argue that it can lead to new awareness and insights. Empirical studies by Fialho [83] and Miall and Kuiken [84] explore the role of defamiliarization in meaning-making. Miall and Kuiken assert that “during an encounter with foregrounded text, the reader may engage in what we have called ‘refamiliarization’: the reader may review the textual context in order to discern, delimit, or develop the novel meanings suggested by the foregrounded passage”. While these studies have focused on literature, there has been work to explore similar experiences in games. My co-authors and I [85] explored player responses to defamiliarization, finding that players did begin to “reflect upon issues beyond their immediate game experience... when the gameplay was made unfamiliar in ways that directly supported the emerging meaning of the game”.

### 3.2.2 Poetic Gameplay Devices

This suggests that, in an interactive narrative, one way to encourage meaning-making and to convey something of the experience of the story through the game mechanics is to make use of defamiliarization, to engage players in the process of refamiliarization and connect this to the context or semiotic layer of the interactive story. Here, I will focus specifically on my notion of poetic gameplay, which I have elsewhere defined as:

the structuring of the actions the player takes within a game, and the responses the game provides to those actions, in a way that draws attention to the form of the game, and by doing so encourages the player to reflect upon and see that structure in a new way. [36]

I see poetic gameplay as a way to encourage the player to reflect on the structure of the work, and from there see those structures in a new way. While I only hint at the meaning-making potential of this approach, and I do so in the context of artgames [62, 86], rather than interactive narratives, this work was extended by Chew [21, 87] in the context of interactive life stories. Chew argues that in some cases, poetic gameplay doesn't just promote critical appreciation of the form of the work, but also draws the player back into the work, much like the refamiliarization process described by Miall and Kuiken.

My development of poetic gameplay parallels work by Pötzsch [88–90] on the application of Shklovsky's concepts to games. Pötzsch identifies a form of defamiliarization particular to games, which he labels “procedural *ostranenie*”. This involves the use of “formal devices to slow down and complicate the acquisition of play skills thereby bringing otherwise internalized frames for interaction with game-worlds to the sudden awareness of players” [88]. There have been numerous uses of defamiliarization and poetic gameplay to critically analyse games. For example, Pötzsch [88] examines *This War of Mine* [91], and drawing from Pötzsch, Gerrish explores the use of defamiliarization in *Nier: Automata* [92]. My co-authors and I [36, 37, 85, 93, 94] have analysed several games and artworks, including *Kentucky Route Zero* [95], *Thirty Flights of Loving* [96], *Save the Date* [97], and *Project December* [98]. Finally, as mentioned above, Chew [21, 87] has explored the use of poetic gameplay in interactive life stories.

The most comprehensive discussion of the various poetic gameplay devices is by my co-authors and I [3], which combines and expands upon my earlier work, and draws from Chew's application of poetic gameplay to interactive life stories, to present a set of 26 poetic gameplay devices, grouped into 5 categories: interaction, gameplay, agency, time, and boundaries. While many of these devices, such as “unfamiliar interface controls” and “game objective is not what it seems”, are not specific to games with a strong narrative component, others, such as “non-chronological game sequences” and “repeated refusal of closure”, while not requiring that a game have a narrative component, suggest an application to interactive narrative.

As with the discussion of experiential metaphors, there is an interesting parallel here with Wardrip-Fruin's approaches to the use of operational logics and playable models to create meaning in games. I briefly described Wardrip-Fruin's expansive

and inventive approaches in Sect. 3.1.3 above. In the third approach described by Wardrip-Fruin, alternative approaches, “models and logics employ the same abstract processes and communicative roles as mainstream uses. However, they employ them in a domain that is novel or unusual and may remove them from common groupings with other logic or models” [70]. An example of this approach can be seen in *Gone Home* [99], with its use of first-person shooter spatial logics and removal of any combat, combined with its initial framing as a horror game and eventual exploration of the playable character’s “high school sister’s discovery of her queer identity and of the fateful choices made by her and her partner” [70]. This clearly involves defamiliarization of the game mechanics, but also of the genre and type of story players expected of this type of game at the time of its release.

### 3.2.3 Defamiliarization Beyond Gameplay

It is important to note that undermining a player’s expectations for gameplay is not the only way to trigger the process of defamiliarization and refamiliarization. As mentioned earlier, game mechanics work together with other narrative modes as part of the process of meaning-making. As van Vught [100] has suggested, while the poetic gameplay devices described by my co-authors and I [3] are very much ludically focused, other conventions within a game can also be thwarted. Drawing on Thomashevsky’s [101] concept of motivations, van Vught proposes that a broader range of devices can be categorized in terms of compositional, realistic, transtextual, artistic, and ludic motivations. The poetic gameplay devices discussed in this chapter fall under the category of ludic motivations. It is worth considering, in future work, the ways in which devices with other motivations can work together with poetic gameplay devices to create meaning in interactive stories.

In the next section, I will discuss ways that both poetic gameplay and game mechanics as metaphors can be harnessed by authors of interactive stories.

## 4 Telling Interactive Stories Through Game Mechanics

So far, I have laid out two approaches to understanding how game mechanics create meaning: game mechanics as metaphor, and poetic gameplay. Chew [18] argues that although interactivity in general, and gameplay more specifically, cannot create meaning on its own, gameplay works together with other narrative modes to support the overall meaning-making process. This aligns with Larsen and Schoenau-Fog’s [15] description of the contribution of game mechanics, together with context, to the creation of narrative meaning, and with Roth et al.’s [11] notion of the double-hermeneutic circles which work at the System and Process layer of an interactive digital narrative. In all these descriptions of narrative meaning-making in interactive narratives, there is a role for the game mechanics, not simply to allow access to

additional elements of the narrative, but to themselves be an integral part of that meaning-making process.

To design an interactive narrative in which the game mechanics are actively contributing to the overall narrative meaning, there needs to be some reason for the player to pay attention to the game mechanics while building their mental model of the storyworld. Recalling Rusch and Weise's discussion of complex, experiential metaphors, they suggest that using these types of metaphors can "make these sense-making processes conscious again [and] make the player see the usual from an unusual perspective" [42]. This parallels my definition of poetic gameplay as something that "draws attention to the form of the game, and by doing so encourages the player to reflect upon and see that structure in a new way" [36]. This is also reminiscent of Möring's argument that game objects "become second-order simulations, and therefore, metaphors, when they are associated with an additional referent through a change of context" [48]. Interestingly, this emphasis on the need for there to be something that draws the player's attention either to the relationship between the source and target domain in the case of metaphor, or to the structure of the game mechanics in the case of poetic gameplay, also echoes Karzmark's [65] finding that players of an abstract game were more impacted by the use of metaphor when they were aware of the metaphoric nature of the game.

This suggests that authors of interactive narratives who want to make use of the game mechanics as a narrative mode can make use of two strategies for meaning-making:

1. Think about unusual associations between what they want to describe in the narrative and the way they embody this metaphorically in the game mechanics. This will encourage players to actively engage in a meaning-making process to make sense of the connections suggested by their gameplay experience.
2. Think of ways that they can break the player's expectations for the way that the game mechanics work, to create a sense of defamiliarization. This will trigger the process of foregrounding and refamiliarization, drawing the player's conscious attention to the work and forcing them to put in the effort to connect the poetic gameplay device to the context.

The parallels between these two approaches suggest that they can, and perhaps should, be used in combination such that the unusual nature of the metaphor underlying the game mechanics and the unexpected structure of the game mechanics can work together to help the player attend to both hermeneutic circles (system interaction and narrative), integrating them into a coherent model of the storyworld.

An example of the use of both a complex experiential metaphor and poetic gameplay can be seen in the game *Brothers: a Tale of Two Sons* [102]. The game tells the story of two brothers going on a quest to save their dying father. As described in [29], the player "simultaneously controls both brothers on the same controller, the elder brother [is] controlled using the left joystick and triggers and the younger brother using the right joystick and triggers." Each brother has slightly different strengths and abilities. While games often involve the player controlling more than

one character, this is rarely something that happens simultaneously. This simultaneous control comes to represent the interdependence and at the same time the difference between the two brothers, in the form of an interface metaphor. The complex control scheme creates the sort of visible, multi-modal interface metaphor that Rusch and Weise suggest makes visible the relationships being represented. Arguably, this creates what Möring sees as a second-order simulation. At the same time, the use of two joysticks to simultaneously control two slightly different characters violates the player's expectations for a control scheme, creating what my co-authors and I [3] refer to as *unfamiliar interface controls*.

Later in the game, further use is made of the experiential metaphor by first breaking what has by then likely started to become familiar, when the elder brother dies. At this point, the player first discovers that they only need to use one joystick, with the sudden loss of the use of the second joystick mirroring the younger brother's loss of his elder sibling [29, 103]. This can be seen as what my co-authors and I call an *unexpected change of controls*. Later, the player encounters challenges that seem to require both brothers to work together. By asking the player to make use of both joysticks in these moments, the game makes use of the experiential metaphor to mirror the younger brother's ability to draw on his dead brother's strength in his moments of need. In this example, the use of poetic gameplay draws the player's attention to the structure of the interaction. This, coupled with the complex experiential metaphor embodied in the dual controls, encourages the player to focus both on the system interaction and the emerging narrative, drawing together both hermeneutic circles and forming a unified narrative from the gameplay.

From this example, and based on the discussion above, I suggest that authors who intend to make use of game mechanics as an integral part of the narrative meaning-making process in an interactive narrative should consider both the metaphor that connects the game mechanic to the narrative and the ways in which this game mechanic can be structured to create some sense of defamiliarization. This will, in turn, begin the process of foregrounding and refamiliarization, which encourages a deeper narrative meaning-making that draws on both the game mechanics and the narrative context of the interactive narrative.

## 5 Conclusion

In this chapter, I have explored ways that game mechanics can be used as a narrative mode. Drawing on two different but related approaches to this, game mechanics as metaphor and poetic gameplay, I have argued that authors should consider the game mechanics not as something that simply needs to be carefully designed so as not to conflict with the narrative, but instead as something that actively supports and forms an integral part of the narrative meaning-making process. To do this, I encourage authors to think of suitably complex, multi-modal experiential metaphors that will engage players in meaning-making and signal the metaphorical nature of the game mechanics, and at the same time to consider how the game mechanics themselves

can be structured so as to defamiliarize the gameplay and de-automatize the process of narrative meaning-making, so as to help players experience the evolving game narrative in a new way.

## References

1. Rohrer J (2008) *Gravitation* [PC computer game]
2. Chew E, Mitchell A (2016) "As Only a Game Can": re-creating subjective lived experiences through interactivity in non-fictional video games. In: Reinerth MS, Thon JN (eds) *Subjectivity across media: interdisciplinary and transmedial perspectives*. Routledge, pp 214–232. <https://doi.org/10.4324/9781315643625>
3. Mitchell A, Kway L, Neo T, Sim YT (2020) A preliminary categorization of techniques for creating poetic gameplay. *Game Stud* 20
4. Lo P, Thue D, Carstensdotir E (2021) What is a game mechanic? In: *International conference on entertainment computing*. Springer, pp 336–347
5. Sicart M (2008) Defining game mechanics. *Game Stud* 8:1–14
6. Mateas M, Stern A (2000) Towards integrating plot and character for interactive drama. In: *Socially intelligent agents: the human in the loop, AAAI symposium*
7. Nealen A, Saltsman A, Boxerman E (2011) Towards minimalist game design. In: *Proceedings of the 6th international conference on foundations of digital games*, pp 38–45
8. Aarseth E (2011) Define real, Moron! *DIGAREC Series*, pp 50–69
9. Dubbelman T (2016) *Narrative game mechanics*. In: *Interactive storytelling*. Springer, Cham, pp 39–50. [https://doi.org/10.1007/978-3-319-48279-8\\_4](https://doi.org/10.1007/978-3-319-48279-8_4)
10. Koenitz H (2015) Towards a specific theory of interactive digital narrative. In: *Interactive digital narrative: history, theory and practice*. Routledge, pp 91–105
11. Roth C, van Nuenen T, Koenitz H (2018) Ludonarrative hermeneutics: a way out and the narrative paradox. In: *International conference on interactive digital storytelling*, pp 93–106
12. Herman D (2002) *Story logic: problems and possibilities of narrative*. University of Nebraska Press
13. Ryan ML (2006) *Avatars of story*. University of Minnesota Press
14. Ryan M-L (2004) *Narrative across media: the languages of storytelling*. University of Nebraska Press
15. Larsen BA, Schoenau-Fog H (2016) The narrative quality of game mechanics. In: *Interactive storytelling*. Springer, Cham, pp 61–72. [https://doi.org/10.1007/978-3-319-48279-8\\_6](https://doi.org/10.1007/978-3-319-48279-8_6)
16. Frasca G (2003) Simulation versus narrative. In: Wolf MJP, Perron B (eds) *The video game theory reader*. Routledge, New York, pp 221–235
17. Hunicke R, LeBlanc M, Zubek R (2004) MDA: a formal approach to game design and game research. In: *Proceedings of the challenges in game AI workshop, nineteenth national conference on artificial intelligence*
18. Chew E, Mitchell A (2016) How is empathy evoked in interactive multimodal life stories? *Concentric: Literary Cult Stud* 42:125–149. <https://doi.org/10.6240/concentric.lit.2016.42.2.08>
19. Page R (2009) *New perspectives on narrative and multimodality*. Routledge
20. Kress G (2009) *Multimodality: a social semiotic approach to contemporary communication*. Routledge
21. Chew EC, Mitchell A (2020) Bringing art to life: examining poetic gameplay devices in interactive life stories. *Games Cult* 15:874–901. <https://doi.org/10.1177/1555412019853372>
22. Dubbelman T (2021) Teaching narrative design. *Narrative mechanics: strategies and meanings in games and real life*. 82:79
23. Elson M, Breuer J, Ivory JD, Quandt T (2014) More than stories with buttons: narrative, mechanics, and context as determinants of player experience in digital games. *J Commun*



24. Haahr M (20187) Playing with vision: sight and seeing as narrative and game mechanics in survival horror. In: International conference on interactive digital storytelling. Springer, pp 193–205
25. McGill KM (2018) Narrative game mechanics and interactive fiction. In: International conference on interactive digital storytelling. Springer, pp 289–292
26. Mitchell A, McGee K (2009) Designing storytelling games that encourage narrative play. In: Iurgel I, Zagalo N, Petta P (eds) Interactive storytelling. Springer-Verlag Berlin, Guimaraes, Portugal, pp 98–108. [https://doi.org/10.1007/978-3-642-10643-9\\_14](https://doi.org/10.1007/978-3-642-10643-9_14)
27. Suter B, Bauer R, Kocher M (2021) Narrative mechanics: strategies and meanings in games and real life. Transcript Verlag
28. Aarseth E (2021) A narrative theory of games. In: Proceedings of the international conference on the foundations of digital Games, pp 129–133
29. Sim YT, Mitchell A (2017) Wordless games: gameplay as narrative technique. In: Nunes N, Oakley I, Nisi V (eds) Interactive storytelling, ICIDS. Springer, Madeira Interact Technologies Inst, Funchal, Portugal, pp 137–149. [https://doi.org/10.1007/978-3-319-71027-3\\_12](https://doi.org/10.1007/978-3-319-71027-3_12)
30. Magnuson J (2019) Playing and making poetic videogames. eScholarship, University of California
31. Fernández-Vara C (2010) Innovation methods in story-driven games: genre variation
32. Logas H (2011) Meta-rules and complicity in Brenda Brathwaite's train. In: DiGRA conference. Citeseer
33. Toh W (2018) A multimodal approach to video games and the player experience. Routledge
34. Begy J (2013) Experiential metaphors in abstract games. *Trans Digital Games Res Assoc* 1
35. Möring S (2015) 16 what is a metaphoric artgame? A critical analysis of metaphor in the artgame discourse and in artgames. In: Embodied metaphors in film, television, and video games: cognitive approaches
36. Mitchell A (2016) Making the familiar unfamiliar: techniques for creating poetic gameplay. In: Proceedings of DiGRA/FDG 2016
37. Mitchell A (2014) Defamiliarization and poetic interaction in Kentucky route zero. *Well Played: J Video Games, Value Meaning* 3:161–178
38. Brathwaite B, Sharp J (2010) The mechanic is the message: a post mortem in progress. In: Ethics and game design: teaching values through play. IGI Global, pp 311–329
39. Extra Credits (2012) Mechanics as metaphor—I: how gameplay itself tells a story—extra credits
40. Extra Credits (2012) Mechanics as metaphor—II: creating narrative depth—extra credits
41. Rusch DC (2009) Mechanisms of the soul-tackling the human condition in videogames
42. Rusch DC, Weise MJ (2008) Games about love and trust? Harnessing the power of metaphors for experience design. In: Proceedings of the 2008 ACM SIGGRAPH symposium on video games, pp 89–97
43. Phelps AM, Rusch DC (2020) Navigating existential, transformative game design. *Proceedings of DiGRA 2020*
44. Rusch DC, Phelps AM (2020) Existential transformational game design: harnessing the “Psychomagic” of symbolic enactment. *Front Psychol* 11:3021
45. Rusch DC (2020) Existential, transformative game design. *JGSS* 2:1–39
46. Rusch DC (2017) Making deep games: designing games with meaning and purpose. Routledge
47. Begy JS (2010) Interpreting abstract games: the metaphorical potential of formal game elements
48. Möring S (2013) The metaphor-simulation paradox in the study of computer games. *Int J Gaming Comput Mediated Simul (IJGCMS)* 5:48–74
49. Möring S (2013) Games and metaphor—a critical analysis of the metaphor discourse in game studies. IT University of Copenhagen
50. Möring S (2015) Simulated metaphors of love: how the marriage applies metaphors to simulate a love relationship. In: Game love: essays on play and affection, pp 196–215
51. Lakoff G, Johnson M (2008) *Metaphors we live by*. University of Chicago Press

52. Juul J (2007) A certain level of abstraction. In: *Situated play: DiGRA 2007 conference proceedings*, pp 510–515
53. Juul J (2005) *Half-real: video games between real rules and fictional worlds*. MIT press
54. Norman D (2013) *The design of everyday things: revised and expanded edition*. Basic books
55. Rohrer J (2007) *Passage*
56. Team Ico (2001) *Ico* [playstation game]. Sony
57. Sigil Games Online (2007) *Vanguard: saga of heroes* [PC game]. Sony Online Entertainment
58. Eidos Interactive (2002) *Mr. Mosquito* [playstation 2 game]. Sony Computer Entertainment
59. Bogost I (2007) *Persuasive games*. MIT Press, Cambridge, MA
60. Humble R (2007) *The marriage* [computer game]
61. Bogost I (2006) *Unit operations: an approach to videogame criticism*. The MIT Press
62. Bogost I (2011) *How to do things with videogames*. U of Minnesota Press
63. Frasca G (2003) Simulation versus narrative. *The video game theory reader*, pp 221–235
64. Nishikado T (1978) *Space invaders*. Taito
65. Karzmark CR (2020) Lonely or just distant? The role of interpretation in the emotional impact of a metaphorical game. <https://escholarship.org/uc/item/90b42276>
66. Steen G (2008) The paradox of metaphor: why we need a three-dimensional model of metaphor. *Metaphor Symb* 23:213–241
67. Steen GJ (2008) When is metaphor deliberate. *Selected papers from the*, pp 43–63
68. Steen G (2017) Deliberate metaphor theory: basic assumptions, main tenets, urgent issues. *Intercult Pragmat* 14:1–24
69. Magnuson J (2007) *Loneliness* [computer game]
70. Wardrip-Fruin N (2020) *How Pac-Man eats*. MIT Press
71. Mateas M, Wardrip-Fruin N (2009) Defining operational logics. In: *Conference of the digital games research association-DIGRA*
72. Osborn JC, Wardrip-Fruin N, Mateas M (2017) Refining operational logics. In: *Proceedings of the 12th international conference on the foundations of digital games*. ACM, New York, NY, USA, pp 27:1–27:10. <https://doi.org/10.1145/3102071.3102107>
73. Scacchi W (2012) *The future of research in computer games and virtual world environments*. University of California, Irvine, Institute for Software Research
74. Wardrip-Fruin N (2018) Beyond shooting and eating: passage, *Dys4ia*, and the meanings of collision. *Crit Inq* 45:137–167. <https://doi.org/10.1086/699587>
75. Pope L (2013) *Papers, please* [computer game]
76. The Prom Week Team (2012) *Prom week* [computer game]. UCSC
77. Short E (2014) *Blood and laurels* [iPad app]
78. Mukařovský J (2014) Standard language and poetic language. *Chapters from the history of Czech functional linguistics*
79. Bálint K, Hakemulder F, Kuijpers MM, Doicaru MM, Tan ES (2016) Reconceptualizing foregrounding. *Sci Study Liter* 6:176–207. <https://doi.org/10.1075/ssol.6.2.02bal>
80. Shklovsky V (1965) Art as technique. In: *Russian formalist criticism: four essays*. University of Nebraska Press, Lincoln/London, pp 3–24
81. Tsur R (1992) *Towards a theory of cognitive poetics*. North Holland Publishing Co
82. Leech GN, Short M (2007) *Style in fiction: a linguistic introduction to English fictional prose*. Pearson Education
83. da Fialho OC (2007) Foregrounding and refamiliarization: understanding readers' response to literary texts. *Lang Lit* 105–123. <https://doi.org/10.1177/0963947007075979>
84. Miall DS, Kuiken D (1994) Foregrounding, defamiliarization, and affect: response to literary stories. *Poetics* 22:389–407. [https://doi.org/10.1016/0304-422X\(94\)00011-5](https://doi.org/10.1016/0304-422X(94)00011-5)
85. Mitchell A, Sim YT, Kway L (2017) Making it unfamiliar in the “Right” way: an empirical study of poetic gameplay. In: *DiGRA 2017*. Melbourne, Australia
86. Sharp J (2015) *Works of game: on the aesthetics of games and art*. MIT Press
87. Chew E (2018) How can I tell you what I felt? Conveying subjective experience in computer-mediated interactive life stories

88. Pötzsch H (2019) From a new seeing to a new acting: Viktor Shklovsky's *ostranenie* and analyses of games and play. In: Viktor Shklovsky's heritage in literature, arts, and philosophy. Lexington Books, pp 235–251
89. Pötzsch H (2017) Playing games with Shklovsky, Brecht, and Boal: *Ostranenie*, *v-effect*, and spect-actors as analytical tools for game studies. *Game Stud* 17
90. Pötzsch H (2016) Constraining play: steps toward a neo-formalist game analysis. In: *WAR/GAME: extending perspectives*. Charles University, Prague, 1 June 2016. Available at: <http://wargameuit.wikidot.com/constraining-play-neo-formalist-game-analysis>. Accessed 18 Dec 2017
91. 11 Bit Studios (2014) *This war of mine* [computer game]. 11 Bit Studios
92. Taro Y (2017) *Nier: automata* [playstation 4 game]. Square Enix
93. Mitchell A (2018) Antimimetic rereading and defamiliarization in *save the date*. In: *DiGRA '18—proceedings of the 2018 DiGRA international conference*. Turin, Italy
94. Mitchell A (2022) Repetition and defamiliarization in *AI dungeon* and *project december*. *EBR*
95. Cardboard Computer (2013) *Kentucky Route Zero* [PC computer game]
96. Blendo Games (2012) *Thirty flights of loving* [PC computer game]
97. Paper Dino Software (2013) *Save the date* [PC computer game]
98. Rohrer J (2020) *Project december* [conversational AI]
99. Gaynor S (2013) *Gone home* [computer game]. Fullbright
100. Van Vught J (2021) What is videogame formalism? Exploring the pillars of Russian formalism for the study of videogames. *Games Cult*. <https://doi.org/10.1177/15554120211027475>
101. Tomashevsky B (1965) *Thematics*. In: *Russian formalist criticism: four essays*. University of Nebraska Press, Lincoln/London, pp 61–95
102. Starbreeze Studios (2013) *Brothers—a tale of two sons* [Xbox 360 Game]
103. May A, Bizzocchi J, Antle AN, Choo A (2014) Fraternal feelings: how brothers: a tale of two sons affects players through gameplay. In: *2014 IEEE games media entertainment*, pp 1–4. <https://doi.org/10.1109/GEM.2014.7048074>