

Puzzle Art in Story Worlds: Experience, Expression and Evaluation

Veli-Matti Karhulahti
University of Turku
vmmkar@utu.fi

1. Introduction

Due to the growing support of neuroscience (Brown et al.: 2011), pragmatist aesthetics must be treated with increased interest. For videogame aesthetics, Phillip Deen's (2011) suggestion to consider John Dewey's pragmatist theory as a framework for analyzing the aesthetic character of videogames may be considered a solid point of reference. This paper continues to explore Dewey's experience-based framework by concentrating on the aesthetics of a particular videogame challenge, the puzzle.

While puzzles may even be older than recorded history (Olivastro 1993: 5–11), videogames have established several new ways to present them. This scrutiny will be limited to a particular puzzle type of story-driven videogames, termed as the *fiction puzzle*. Many games provide the player with fiction puzzles, yet their gameplay rarely relies on these mental challenges alone. In this respect, the adventure game genre makes an exception. The numerous forms of fiction puzzles can all be distinguished from the 35-year-old history of adventure games; hence the examples used in this paper are primarily selected from that particular genre. (Fernández-Vara 2009; Karhulahti 2011.)

Initially, the fundamental concept of Dewey's theory, the *aesthetic experience*, and the fundamental concept of this paper, the fiction puzzle, are defined. Subsequently, it will be argued that puzzle-solving may produce aesthetic experiences as well as support them. The fiction puzzle will be studied as a miniature piece of art, which has its own unique mode of expression. Lastly, the paper will pursue to discuss the fiction puzzle's aesthetic value to establish criteria for evaluation in means of art criticism.

2. An Aesthetic Experience

As mentioned, Phillip Deen has already introduced John Dewey's pragmatic philosophy of art to game studies. While the reader is strongly encouraged to look up Deen's (2011) comprehensive article, this section gives a summary of how Dewey's experience-based theory "directly addresses the unique concerns and qualities of video games as a medium."

Dewey's aesthetics is based on aesthetic experiences that take the place of artworks. Whereas some physical products tend to arouse these experiences, the products are not artworks themselves:

Art is quality of doing and of what is done. [...] The work takes place when a human being coöperates with the product so that the outcome is an experience that is enjoyed because of its liberating and ordered properties. (1934: 222)

Artworks, thus, can be described as special moments or events that are experienced usually as an outcome of an art product that has been created to generate this particular kind of experience. Yet the experience is not necessarily the result of an art product. For Dewey, the roots of aesthetics are in everyday life:

The sources of art in human experience will be learned by him who sees how the tense grace of the ball-player infects the onlooking crowd; who notes the delight of the housewife in tending her plants, and the intent interest of her goodman in tending the patch of green in front of the house; the zest of the spectator in poking the wood burning on the heart and in watching the darting flames and crumbling coals. (Ibid.: 3.)

An aesthetic experience arises from a special sense of presence. Whereas the sense of presence invites one to compare Dewey's theory to the widely used concept of immersion (e.g. Ermi & Mäyrä 2005), those intensive short-term events do not represent the complete nature of the aesthetic experience. Although an experience always requires intense interaction between the interactor and the object, it can also be formed of plural events. Dewey exemplifies this through longer-lasting event patterns such as writing a book, taking part in a political campaign and playing games. These aesthetic experiences he calls *integral*, as they continue after interruption to be constructed post hoc. (1934: 37.) Though Dewey does not distinctly separate short-term experiences from integral ones—in most contexts, the two would be hard to distinguish—the split-up is helpful for understanding the different aesthetic roles of the fiction puzzle.

3. The Fiction Puzzle

Tetris (Alexey Pajitnov, 1986) makes a fine example of how videogames have employed the puzzle tradition to develop entirely new types of puzzles. The game combines the traditional jigsaw with real time interactivity. The player is provided with an infinite number of puzzle pieces (tetrominos) so that the serene assembling becomes ultimately a hectic state of play, and finally, ends up with the player's loss. Whereas the case no doubt makes an interesting use of the medium's possibilities, its real time nature also loses the feature that is characteristic to traditional jigsaws and most other puzzles: the rush-free manner of solving.

Whereas intensive *Tetris*-like challenges represent what most games are about—and they are without doubt art products capable of arousing aesthetic experiences in Dewey's terms—the digitalized puzzle need not be identified with real time action or physical engagement. Ontologically speaking, those that do not require physical skills to solve can be considered closer digital relatives to the age-old tradition of puzzle solving. This paper will focus on a specific type of these non-physical puzzles that were presented in the 1970s along the first text adventure games, but are today confronted in most other story-driven games as well (see Bates 2004: 119–134). They will henceforth be referred to as *fiction puzzles*.¹

Fernández-Vara defines a puzzle in the context of her study of adventure games as follows:

A puzzle is a challenge where there is no active opponent, but rather it is a problem that needs a solution. The solution entails logical thinking, rather than physical skills, and it is the result of insight thinking. Puzzles usually have a single solution, even if it may [be] possible to obtain it in more than one way. (2009: 125–126.)

The fiction puzzle has one more fundamental element that literally defines the whole concept: they are integrated to fictional story worlds. The term "fictional story word" refers exclusively to fictional worlds in which stories take place, and not to the fictional worlds of games in general. For

¹ Clara Fernández-Vara occasionally uses the term "adventure game puzzle" in her studies of adventure games (e.g. 2009: 156; also Tronstad 2005). The puzzles she describes can be considered comparable to the ones discussed here, however, since they are not exclusive to adventure games, they are termed "fiction puzzles" instead.

instance, the world of *Tetris* makes a fictional world, but since the game is not story-driven, it is not a fictional story world. Henceforth, the term is referred to as a plain *story world*.²

Fiction puzzles are typically, but not necessarily, solved through a player character. Whereas a case such as typing an answer to a fiction puzzle does not actually involve the player character, the direct input still represents the character's act in the story world. These acts work as means for achieving a specific state of affairs in that world and so they simultaneously advance the story that takes place in it. (See Fernández-Vara 2011.)

Accordingly, puzzle-solving can form a continuous state of simulation that embodies an entire gameplay—as in the case of adventure games—and is therefore a suitable candidate for arousing aesthetic experiences despite its lack of (significant) physical contribution. The final definition of the fiction puzzle is outlined as follows: *A fiction puzzle is a mental challenge where there is no active opponent. It is integrated to a story world and there is usually a solution, which may be possible to obtain in more than one way. The solution entails logical and insight thinking, and it is attained by interacting with the story world primarily through a player character.*³

The fiction puzzle has many forms.⁴ Traditional language and picture puzzles like riddles and jigsaws become fiction puzzles when they are integrated to a story world. For instance, in *Leisure Suite Larry in the Land of Lounge Lizards* (Sierra On-Line, 1987) the game begins with a set of questions that need to be answered correctly to start the actual game.⁵ While these questions are part of the software, they are not part of the world in which the events of the game take place. Hence, this initial trial is entirely metafictional, and not a fiction puzzle. An identical quiz becomes a fiction puzzle when it gets integrated to the story: a password is requested from Larry as he tries to enter an underground room. Here the challenge takes place in the story world and solving it opens a new location for Larry to enter.

A typical fiction puzzle, however, is neither a literal question nor a jigsaw but has its own unique mechanics. These mechanics are based on manipulating objects and characters of the story, that is, interacting with the existents of the story (Fernández-Vara 2009: 139). A simple example would be opening a locked door: the player may have to find a key, after which she may be able to unlock the door with the key. This problem would require the player first to solve the navigational puzzle of locating and obtaining the key, and then, the object-manipulation puzzle of unlocking the door with the key. Paraphrasing Jon Ingold (2011: 231), a fiction puzzle can thus be any non-physical challenge “outside of the basic interaction set of the game that generates progress within the game.”

² For more about the concept of fictional world, see Juul 2005: 121–138. In Espen Aarseth's (2005) terminology, fiction puzzles would be integrated in “virtual story worlds” instead.

³ The two modes of thinking—logical and insight—derive from Charles Peirce's division of *logica utens* and *logica docens*. While the first one refers to the sophisticated use of logic in the manner of mathematicians and scientists, the latter is something indeterminable; a skill that everyone possesses and that requires no special training. (E.g. Peirce 1932: §10; §14.)

⁴ Fernández-Vara (2009: 144–156) distinguishes four main categories and several subcategories of puzzles in adventure games: navigational puzzles, state of affairs puzzles, language puzzles and mini-games.

⁵ The questions were supposed to prevent underage players from playing the game, which dealt with sexual themes.

4. Aesthetics of the Fiction Puzzle

At this point, it is essential to recall the duality of aesthetic experiences: the short-term experience, and the longer, integral experience. The integral experience is a coherent consummation of several short-term experiences, which may appear in form of challenges on the way towards an end:

Struggle and conflict may be themselves enjoyed, although they are painful, when they are experienced as means of developing an experience; members in that they carry it forward, not just because they are there. There is [...] an element of undergoing, of suffering in its large sense, in every experience. (Dewey 1934: 42.)

If a game is an integral experience, it should consist of challenges that produce short-term experiences of this suffering nature. For story-driven games, some of these experience-producing challenges are fiction puzzles.

Marcel Danesi calls the peculiar pleasure gained from puzzle-solving an *aesthetics of mind*. He states that "a puzzle is indeed a small work of art that stimulates curiosity and provides a kind of aesthetic pleasure all its own." (2002: 133; 227.) The statement is compatible with Dewey, who in fact names problem-solving as an avenue to an aesthetic experience (1934: 36–37). While the age-old puzzle tradition might be capable of arousing aesthetic experiences, the fiction puzzle gets even closer to Dewey as the motivation to solve it derives from the desire to advance the narrative, which reminds of the everyday need to overcome obstacles to proceed towards a goal.

So Far (1996), a text adventure by Andrew Plotkin, opens with a situation that simultaneously represents a motivation for the story and a fiction puzzle. When the protagonist's date, Aessa, does not show up to a meeting, he (or she) starts to look for her. At the same time that this search becomes the driving force of the story, it is also a navigational challenge to locate something that is missing in the story world. This could well be a problem in real life too; an incident that might produce an aesthetic experience after receiving its solution via undergoing a long search.

Notwithstanding the previous claims about adventure game puzzles (Trondstadt 2005; Fernández-Vara 2009: 123), a fiction puzzle does not necessarily have a solution. After a few steps in *So Far*, the player is soon faced with a locked door that is implied to conceal a hint about where Aessa has gone. Entering the room behind the door becomes a fiction puzzle of its own, which, however, has no solution. While exploring the surroundings for another entry, the player will—instead of finding a solution to the door puzzle—get pulled into an event that transports the protagonist to another location. This shows how a fiction puzzle may receive its consummation—and thence produce an aesthetic experience—by letting the player know that her effort, despite failing to solve the puzzle, has advanced the story in another way.

4.1. Pacing and Intensifying an Experience

Pacing is a central concept in narration. Dewey refers to it as "rhythm:"

In rhythmic ordering, every close and pause, like the rest in music, connects as well as delimits and individualizes. A pause in music is not a blank, but is a rhythmic silence that punctuates what is done while at the same time it conveys an impulsion forward, instead of arresting at the point which it defines. (1934: 179.)

Whereas non-interactive narration, literature for instance, is paced with shifting the amount of detail description and regulating the sequence of events they portray, story-driven games do the same by providing the player with diverse challenges. In addition to producing miniature aesthetic experiences of their own, short-term puzzles—like finding a way to enter a room—also pace the integral experience of progressing the story as a whole.

This method of pacing narrative can be well explained in contrast to Roland Barthes' amusing concept of text as a controllable striptease performance. He describes how

we do not read everything with the same intensity of reading; a rhythm is established, casual, unconcerned with the integrity of the text; our very avidity for knowledge impels us to skim or to skip certain passages (anticipated as "boring") in order to get more quickly to the warmer parts of the anecdote[.] (1975: 10–11.)

Fiction puzzles as well as other game challenges alter the concept by limiting the reader's sense of control. She is no longer capable of undressing the story cloth by cloth with a rhythm of her own as the challenges interfere. Instead of one-sided striptease, story-driven games might thus be better described as two-sided foreplay between the player and the game. (Cf. Montfort 2003: 3.)

As already implied, the structure of a story may in fact be—and it usually is—a fiction puzzle. When the player in *So Far* becomes aware that Aessa cannot easily be found, the unsolved problem turns into the driving force of the story. Although the player confronts several other challenges along the game, the initial one of finding Aessa persists as the ultimate motive for all input. This kind of plot structure can be seen as an upside-down pyramid, in which the primary puzzle branches into minor ones that ultimately construct the game (fig. 1; cf. Fernández-Vara 2009: 146). Accordingly, a narrative integral experience may actually arise from a construction of interrelating fiction puzzles.

In his book *Art of Videogames* Grant Tavinor (2009: 117) argues that a "particular difficulty that videogames face is that they are simply long, and this can have an effect on the ability of the player to sustain their interest in the narrative." Epics notwithstanding, this is true in comparison to most narrative arts. The observation introduces another role that puzzles have in pacing an integral experience: intensifying the player's interest in the story.

As works like *War and Peace*, *Don Quixote* and *Crime and Punishment*—not to mention *In Search of Lost Time* in its own unique sense—confirm, length does not necessarily exhaust the flow of an integral experience (cf. Barthes 1975: 11). If aesthetic experiences are co-products of interactors and objects (Dewey 1934: 259), mental states and external factors essentially affect the experience. Even the most absorbed reader must confess that reading the 4000 pages of *In Search*

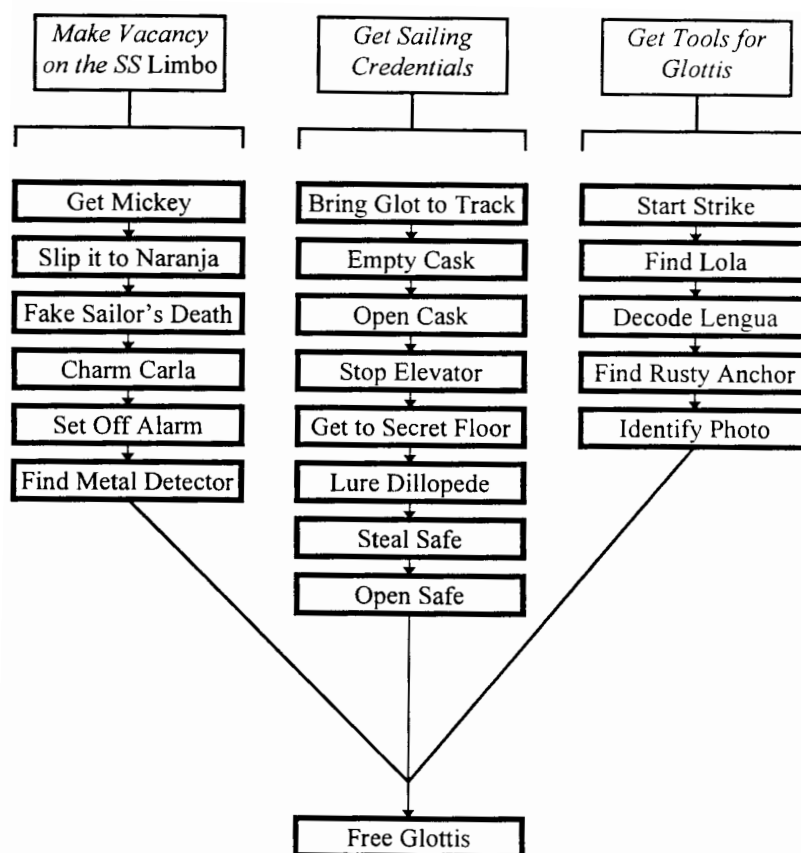


Figure 1. In the second episode of *Grim Fandango* (LucasArts, 1998) the storyline is driven by the fiction puzzle of releasing an NPC (Glottis) from prison. This requires the player to solve three other fiction puzzles (make vacancy, get credentials, get tools), which in turn require solving 19 smaller fiction puzzles. ©1996 LucasArts Entertainment Co. (Schafer 1996: 22.)

of *Lost Time* involves several moments of interruption or reduced concentration. Fiction puzzles are able to reduce the number of these disoriented moments, and so intensify even the already intense narrative experience. In Ragnhild Tronstad's (2005) words: "a well constructed puzzle may function as a manifestation of our sense of knowing and belonging to the game world."

An illustrative fiction puzzle type to demonstrate how a challenge can intensify narration is the conversation-based puzzle. A well-known recent case would be that of *L.A. Noire* (Team Bondi, 2011), in which the player is a detective interrogating several suspects and witnesses. These interrogations are implemented through a system of choosing between three options—truth, doubt and lie—which depict the player's sentiment and response on the NPC's answer. As players have only one chance to pick their choice—which heavily affects the progression of interrogation and thereby the events of the story—the puzzle encourages them to connect the previous events of the story before advancing it. The effect is even stronger if they choose to accuse the NPC of a lie. The claim must be evidenced by pointing out a proper proof, which again encourages players to piece up the complex plot.⁶

The more complex, parser-based conversation systems produce the same intensifying effect inherently. In the detective text adventure *Make it Good* (Jon Ingold, 2009) the player must type a specific topic about which to discuss with NPCs. In a sense, this interrogation system can be considered more intensifying than that of *L.A. Noire* as the player will not be able to properly advance the story without inquiring about the decisive topics. Instead of encouraging the player to construct the plot, it more likely *forces* one to do it. This nevertheless bears the risk of disintegrating the whole experience in case the challenge proves too hard.

On the other hand, a difficult fiction puzzle that interrupts the story does not always disintegrate the integral experience. Jon Ingold (2011) points out that occasionally players keep thinking of puzzle solutions far away from the game screen, which more likely strengthens the player's relation to the story. Furthermore, wrong answers are usually replied with a reaction that guides the player towards a better guess so that she learns about the entities and rules of the story world, which can alone be aesthetically satisfying. The dilemma of difficulty will be given a closer examination in the fifth section.

4.2. Expressing within an Experience

In addition to producing aesthetic experiences, artworks are expressive. Dewey believes that "works of art are the only media of complete and unhindered communication between man and man that can occur in a world full of gulfs and walls that limit community of experience." And because artworks communicate, they also form an expressive language; or rather, several languages. (1934: 108–110.)

The expressiveness of fiction puzzles is not to be understood as emotional expression. Puzzles rarely deal with emotions in a manner of music or drama, yet they frequently convey meanings and ideas about the world in general. This must not happen outside the experience, neither it should be an explicit statement: "Science states meanings; art expresses them." (Ibid.: 87.) In Dewey's theory, art may involve cognitive content, but that must be embodied in the experience. Understanding an expressed meaning or idea should never require laborious cyphering; it should always happen within the experience itself.

⁶ Although the interrogation model of *L.A. Noire* works as an effective way to intensify narration, it received a mixed reception from critics. See for example Tom Bissell's (2011) review.

If one is to believe in Marcel Danesi (2002: 235), all puzzles are “elusive bits of evidence of a theory of the world that is lurking around somewhere, but that seems to evade articulation.” “In their own miniature way,” he declares, “puzzles fill an existential void [...] that we would otherwise feel constantly within us, by providing small-scale experiences of the large-scale questions that life poses.” (Ibid.: 208.) The words bear striking resemblance to the way in which Dewey connects aesthetics to everyday life. This subsection will demonstrate how fiction puzzles express in practice. The topic will be revisited in the last subsection.

Although the riddle is no doubt the most drained puzzle exemplar, it must be brought up once more. Thanks to mankind’s persistent fascination for age-old fables and to the expertise of more recent storytellers like Lewis Carroll, the riddle is a case familiar to all readers as well as one that has been fluently integrated to games. Still the primary reason for discussing it here is the fact that it also represents the structure of fiction puzzles in general (Trondstadt 2005; Fernández-Vara 2009: 123; cf. Montfort 2003: 50–51.) Against the referenced contributions—and as a distinction from the acknowledged definitions of the riddle—it was already argued that a fiction puzzle (or a puzzle in an adventure game) does not necessarily have a solution. In other respects, the following examples aim at developing the expressive relation between the riddle and the fiction puzzle. The fantasy text adventure *Beyond Zork: The Coconut of Quendor* (Infocom, 1987) shall lead the way:

*Never ahead, ever behind,
Yet flying swiftly past;
For a child, I last forever,
For adults, I’m gone too fast.*⁷

The answer should not take long for the reader to figure out. But what, or rather, *how*, does it express? It is worth quoting Richard Wilbur as he writes that solving a riddle requires one

to see the peculiar qualities of an object or creature, to discern its resemblance to other forms and forces, and to have an insight into the relatedness of all phenomena, the reticulum of the world. (1989: 334.)

In the light of Wilbur’s words, the riddle could be described as an expression of the underlying nature of youth. The solver, the riddlee, is guided to realize not what youth means, but also how it is recognized (within a specific culture). For instance, distinguishing the hint of the last line (*For adults, I’m gone too fast*) entails one to become aware of the high standing of youth; how adolescence is generally considered as something to be longed-for.

The idea expressed through the above riddle is not an argument. It leads one to become aware of the certain state of affairs in the real world—youth is generally treasured—but it does not take a stand; it does not make an opinion whether youth should or should not be treasured. The insight that leads the riddlee to understand the expressed idea does not increase her knowledge, but awakens it. As Nick Montfort (2003: 60; with reference to Shlomith Cohen) puts it, “the riddle is best at giving a new perspective on something already familiar in certain ways, in recognizing our perception or thinking.” This concerns the fiction puzzle in general.

Now, there are two things that need clarification: the claim that all fiction puzzles are expressive riddles, and the claim that their mode of expression is based on providing the solver with recognition of perception and thought. To prove that both arguments are valid even when applied to minor fiction puzzles, the next case is selected from the 19 simple fiction puzzles presented in the puzzle structure diagram of *Grim Fandango* (fig. 1). In this example, the player character Manny

⁷ How the riddle is integrated to the game world will be discussed later.

needs to stop an elevator to enter an area called "the vault." Tim Schafer describes the sequence of events that form the puzzle:

The cask roller guy dumps Manny's cask off in the basement, picks up a full cask with the forklift, and goes back to sleep upstairs. Manny can ride the elevator up and down to his heart's content, but it's an express elevator. It only goes all the way to the top, and all the way to the bottom. In the middle, Manny sees a secret [open] floor which must be "the vault," but he can not get the elevator to stop on this floor. (1996: 29.)

Since the structure of the fiction puzzle is essentially the same as that of the riddle, the puzzle in question should be transformable into a riddle-like form. The first two verses could go something like this:

*In this way,
The elevator stops between the floors;*

These verses are not much of a riddle yet; they merely pose the dilemma at hand. For the two verses, an answer could be many things, for instance, breaking the elevator circuit while between the floors. But in the context of *Grim Fandango*, there is only one correct solution:

So, while the elevator is passing the secret hallway, going up, Manny drives the forklift so its blades stick out of the elevator door, catching on the roof of the secret hallway, and stopping the elevator dead. (Ibid.)

Like the solutions of riddles are related to the systematic worlds they constitute (Montfort 2003: 43–44), so are the solutions of fiction puzzles related to their story context. Finding a solution to a fiction puzzle requires one to make a connection between specific components and actions available in the fictional situation; which in this case means connecting two components to a single action: the forklift blades (C_1) and the up-going elevator (C_2) to forklift driving (A_1). In one sense, C_1 , C_2 and A_1 may be rephrased to complete the elevator riddle:

*In this way,
The elevator stops between the floors;
A ride up will make things easier;
A ride within a ride,
A lift within a lift.*

The experimental riddle demonstrates how entities and affordances of story worlds can also be read as hints that bear resemblance to the structure of the riddle. Obviously, how evident these hints are is a matter of ad hoc estimation. The setting may provide so many functional components that the correct ones do not stand out as proper hints, yet this concerns riddles too. Not all riddles are flawless or cleverly structured.



Figure 2. *Discobolus* of Myron. Circa 450 BCE. National Museum of Rome, Italy.

Finally, it is indeed worth asking in what way the elevator puzzle is expressive. With reference to Montfort, it was earlier stated that fiction puzzles have a riddle-like structure and are hence best at providing the solver with recognition of perception and thought. While the previous example guided the solver to recognize the relations connected to the concept of youth, the elevator puzzle does not appear to deal with the same ambition.

Despite its simplistic appearance, the elevator puzzle represents the most profound mode of puzzle expression. It does not convey a specific idea like the riddle from *Beyond Zork*, but it makes the player aware of everyday relations of objects through the story world. By requiring one to apply everyday logic to the fictional situation, it links the real world to the fictional one, thereby providing the solver with a small experience of recognition. Like the classic Greek sculpture *Discobolus* of Myron (fig. 2) can be seen as an expression of momentary stasis before the release of movement, the elevator puzzle might well convey a miniature sensation of stopping movement at the moment of insight. For a moment, the player can "see through the mind's eye the inner nature of some specific thing." (Danesi 2002: 28.)⁸

Whereas some critics will certainly exclude the elevator puzzle from genuine artistic expression, these miniature expressions accommodate Dewey's theory to the full. Expressive communication, in Dewey's opinion, is rarely the intent of an artist, and when it occasionally is, it only limits the expressiveness of the artwork (1934: 108–109).⁹ The pure, unintentional expression of the elevator puzzle is inherent for all fiction puzzles that require the player to connect an insight to the story world.

5. The Aesthetic Value of Fiction Puzzles

Since puzzles are aesthetic objects, solvers pass value judgments on them. Those judgments are a question of art criticism. Throughout ages, evaluation has been the subject of many critics and theorists of art—including the author (2010)—for which the topic of aesthetic value is a natural part of puzzle aesthetics as well.¹⁰

Even though the focus is still on the fiction puzzle, the discussion will begin with Marcel Danesi's thoughts about the value of puzzles in general. He establishes the concept of "aesthetic index," which is to indicate the aesthetic value of puzzles:

The *aesthetic index* of a puzzle, as it may be called, seems to be inversely proportional to the complexity of its solution or to the obviousness of the pattern, trap, or trick it hides. Simply put, the longer and more complicated the answer to a puzzle, or the more obvious it is, the less

⁸ Tronstad (2005) juxtaposes the revealing insight of riddles with the manner in which adventure games reveal new game spaces as a reward for finding the solution. But she also speculates how the solution might contribute "a significant element which adds to the experience of inhabiting an alternative reality"—by which she might signify the same idea presented here.

⁹ Duncan Stevens (2011) discusses and gives examples of intentional argumentation in interactive fiction (text adventure games).

¹⁰ It must be noted that though value is discussed here as a quality of puzzles, the act of solving them could be examined as an evaluable artistic performance as well. In early adventure games, the player's performance was in fact commonly evaluated by the game. Players were able to solve puzzles in alternative ways, and their performance ultimately constructed an overall score. For instance, in *King's Quest II: Romancing the Throne* (Sierra, 1985) players are rewarded with more points if they solve the puzzle of entering a boat by tricking the boatman instead of simply paying him. (Cf. Humble 1993.)

appealing the puzzle seems to be. Puzzles with simple yet elegant solutions, or puzzles that hide a nonobvious principle, have a higher aesthetic index. (2002: 227)

In short, aesthetic index appears to present two criteria against which puzzles ought to be evaluated: *elegance* and *difficulty*. For Danesi, an ideal puzzle is elegant, and not too easy. This section will suggest that difficulty should not be taken into consideration when evaluating fiction puzzles. Instead, the aesthetic value of fiction puzzles should construct exclusively of elegance, which is divided into an *elegance of form* and an *elegance of content*.¹¹

The elegance of puzzles reminds one of minimalist aesthetics. Edward Strickland (1993: 4) starts his survey of Minimalism with a solid definition: "Minimalism is a style distinguished by severity of means, clarity of form, and simplicity of structure and texture." In this respect, the formal elegance puzzles refers to three factors:

- (i₁) The purity of means of solving (solution does not entail exceptional knowledge).
- (i₂) The clarity of manifesting the problem.
- (i₃) The briefness of solution.

These formal criteria are to be understood in the same way as Monroe Beardsley's (1958: 462–463) objective reasons for evaluating artworks: The aesthetic value (formal elegance) is always improved when fulfilling these criteria, and it is never improved when not fulfilling them. Accordingly, a puzzle being clear does not mean that it is of high aesthetic value (formally elegant), but the feature will always make the puzzle aesthetically more valuable (formally elegant). Ultimately, formally elegant puzzles provide enriched aesthetic experiences for all solvers when compared to puzzles with less formal elegance if their elegance of content is equal.

Formally elegant puzzles are not necessarily of high aesthetic value. The mathematical puzzle "What is greater than three but smaller than five?" does not require exceptional knowledge and it is clear as well as brief, but hardly elegant. Consider another mathematical challenge " $\sqrt{4775501025}$," which is also formally articulate, but again, not elegant. Despite coherent form, both cases lack content that would provoke an urge in most solvers to face the challenge; and this content evidently relates to difficulty.

Difficulty is a problematic concept to evaluate. Since a given task is never equally challenging to all players (Juul 2005: 94), it seems contradictory to pass value judgments on challenges. Whereas some solvers find a puzzle too difficult, others find it is too easy. Too difficult challenges disintegrate the experience; too easy ones never even trigger it.

The dilemma is not exclusive to puzzles and games, but concerns arts in general. Whereas for an advanced art critic some allegories seem too obvious, and hence do not produce an aesthetic experience, the same allegories may well please less refined viewers and provide them with strong aesthetic experiences. But while obviousness and difficulty no doubt affect aesthetic experiences, they cannot be measured as definite quantities. They exist only in relation to the viewer (the player), her surroundings, and the other elements of the artwork. For different people in different situations and in the contexts of different artworks, the same level of obviousness or difficulty has different aesthetic significance.

Instead of speculating with the concept of difficulty, it is more constructive to focus on art forms' unique aspects that form their contexts in which difficulty functions as well. When it comes to the specific context of fiction puzzles, Tronstad provides some related thoughts. As she also speaks of

¹¹ The division could be applicable to game challenges in general.

“elegance” as an evaluative term, referring to this unique context as *elegance of content* is coherent. Ultimately, to evaluate the elegance of content of fiction puzzles, three criteria are submitted:

- (ii₁) Logicality in the story world.
- (ii₂) Level of integration to the story world.
- (ii₃) Success of expression that coheres with the story world.

The criteria will be examined respectively in the next three subsections. The given examples will also touch on the criteria of the elegance of form.

5.1. Logicality in the Story World

All story worlds have their own rules. Although they typically follow the rules of the real world, the abstraction of simulation confirms that no story world is identical with the real one. The level of abstraction is the level on which the player can act (Juul 2007), and the player can never act as freely as she does outside the game. For this reason, the logic of a fiction puzzle is always in relation to the abstraction, that is, to the unique rules of the particular world it is integrated to.¹²

One of the finest examples of employing the game’s unique rules into a fiction puzzle can be found in *The Secret of Monkey Island* (LucasArts, 1990). While the game simulates the real world to a large extent, the point-and-click interface does not follow the laws of physics. Since the game’s primary method for overcoming challenges is manipulating objects, the player character Guybrush Threepwood is able to carry objects without having to worry about their weight. In



Figure 3. The Secret of Monkey Island. © LucasArts, 1990.

this particular world, the objects in Guybrush’s possession cease to weigh anything, and so he ends up carrying books, ropes, shovels and swords without difficulty moving.

At one point, Guybrush gets thrown into the sea with a heavy weight tied to him with a thin rope (fig. 3). There are several sharp objects around to cut the rope with, but not close enough for him to reach. Obviously, the solution is simply to pick up the weight, as in Guybrush’s pocket it loses its heaviness. In this way, the solution employs the exceptional physics of the story world; directing the player to initially consider the option that would be logical in the real world—reaching for the sharp objects—but letting her eventually figure the way out via the unique means of the story world.

¹² Tronstad (2005) argues that the elegance of adventure game puzzles depends largely on how much they rely on the unique rules of the story world. She calls this criterion as “metaphorical tension” after Dan Pagis.

The case fulfills the other criteria of elegance as well. At this point of the game, each player knows how the interface works so they must have the knowledge required for the solution (i_1).¹³ The puzzle presents itself clearly, as the game does not permit pursuing other goals before resolving the situation (i_2). Resolving the situation is an actual event in the story, for which the puzzle is also integrated to the story world flawlessly (ii_2). Lastly, the solution is as brief as possible, as it entails nothing but using a single "pick up" command (i_3).

The case appears also relatively easy, which confirms that elegance does not necessarily depend on difficulty. Its contribution to the integral experience does not derive from the actual struggle against the obstruction, but from the coherent harmony of its form and content. It intensifies the experience by making the player become more aware of the story's original setting; letting her know that the game does not merely try to simulate reality but functions through its own rules (ii_3).

Yet the artistic freedom in employing a unique logic may also exceed the limit. Tronstad (2005) presents a simple method for estimating whether the line is crossed or not:

One of the characteristics of a good riddle or puzzle is that after we've solved it – or even been told its solution – this solution will appear obvious to us. If the solution still appears far-fetched it is simply not a very good puzzle.

Let the method be applied to an exceptionally obscure puzzle in *Simon the Sorcerer 3D* (Headfirst Productions, 2002). In the very end of the game, the protagonist needs to operate a CD-ROM drive that refuses to open. The solution is that the player must eject her real world CD-ROM (or DVD-ROM) drive, which for some reason opens the fictional drive as well. Since the game does not imply the causality between worlds, the solution does not appear logical. Consequently, the puzzle cannot be considered elegant when it comes to the criterion of logic.

5.2. Level of Integration to the Story World

Fiction puzzles are integrated to story worlds. Without any integration, a puzzle is not a fiction puzzle but a metafictional one. What defines the level of integration is how strongly a fiction puzzle and its solution are related to the existents of the story world.

Puzzle integration relates closely to what David Bordwell and Katie Thompson call diegetic elements of film. Streets, skyscrapers, people and the sounds they make are all diegetic elements because they exist in the world that the film depicts. On the contrary, films often include music, narration and credit texts that are extraneous, i.e., they do not exist in the film world. These elements are nondiegetic. (2004: 70–71.) When it comes to fiction puzzles, their level of integration depends largely on the extent to which they can be considered diegetic.

To begin with an example of extremely low level of puzzle integration, *Puzzle Agent* (Telltale, 2010) provides the player with a detective story that unfolds through solving puzzles. These puzzles, however, can hardly be considered events in the story, nor do they require the player to employ the existents of the story. They pop up as nondiegetic screens that explain the rules of the particular puzzle in a fashion of a traditional puzzle book. After successful solving, the player is set free to continue exploration until she faces another puzzle screen. (Cf. Fernández-Vara 2009: 30–31.) While these puzzles can be enjoyed as separate small-term experiences, they do not exploit the unique possibilities of the art form in question, and are thus left without higher aesthetic significance. Overcoming challenges in story-driven games should always advance the story, not merely the game.

¹³ If the game had begun with this puzzle, (i_1) would be arguable.

Traditional puzzles like those of *Puzzle Agent* can be integrated deeper into the story world by connecting them to the world's existents. The previously discussed youth riddle from *Beyond Zork* is more integrated than the literal puzzles of *Puzzle Agent* since it is an actual part of the story. The riddle is written on a boulder that is an existent of the story world; which makes the riddle an existent (and diegetic) as well. The player has to first examine the boulder to notice the writing, after which it can be read. Solving the riddle has a magical effect that advances the story, which is logical within the fantasy world in question. There is a logical relation to the story; hence the *formal* level of integration can be considered high.

The youth riddle, however, is not a textbook case of integration, as the solution is not related to the story world. Because the solution does not connect to the existents of the story, it can be figured without knowledge about the story it is related to. So whereas the riddle's formal level of integration is high, its integration of *content* is low.¹⁴

In another Infocom text adventure *Sherlock: The Riddle of the Crown Jewels* (1988) riddles are successfully integrated in both measures, form and content. The story constructs on pursuing a thief who leaves riddle-form clues behind him. They are presented on diegetic letters and paper pieces that must be first obtained and read, hence they are well formally integrated. Yet in this case also the solution relates to the story and its existents:

*London Bridge is falling down.
All that's under it will drown.
With it falls Victoria's reign,
Britannia ne'er to rule again.*

The riddle above makes no sense outside the game context, but a player familiar with the story world can logically deduce something to be hidden in a specific location (London Bridge) and that getting it has most likely something to do with the high tide that is about to arise. The content is highly integrated via direct connection to the existents of the story.

5.3. Success of Expression That Coheres with the Story World

Tronstad (2005) excludes the expressive means of fiction puzzles from their elegance as she separates comical, absurdist, educational, ironical and provocative elements of puzzles from "features that are desirable and functional." In contrast, this final subsection suggests that expressing a special message may increase a fiction puzzle's aesthetic value by making the audience become aware of the expressed in a new way, as Montfort (2003: 60–63) argues in advocacy of riddles.

The mode of expression of fiction puzzles was already discussed in the fourth section. Whereas not all of their expressiveness—like that of the elevator puzzle—is reasonably evaluable, there are puzzles that deserve special recognition for their unique means of conveying ideas. At this point the paper moderately disagrees with Dewey who negates the aesthetic value of conveying a special message, such as a moral one (1934: 108–109). To give a counter-example for his argument, the following case illustrates how a moral statement expressed through fiction puzzles may enrich an integral experience.

A graphical horror adventure *Harvester* (DigiFX Interactive, 1996) is set in the fictional town of Harvest, in which the player character Steve wakes up without remembering anything from his past.

¹⁴ One might argue that the solution (youth) does have a thematic relation to the story. The paper will thus merely use the terms "high" and "low" for defining the level of integration.

To figure out what has happened, Steve is advised to take part to meetings of the town's governing organization. Participating a meeting requires him to prove that that he is morally capable of following the town rules. This means completing tasks that form the structure of the story.

The tasks are presented in form of puzzles. What makes them a unique case is their moral character. As an argument against the naïve traditions of storytelling, the player needs to prove his immorality instead of virtuousness. The initial tasks involve modest pilferage and vandalism, yet soon Steve is asked to carry out duties that lead to heavier crimes such as arson and brutal violence. While in the early game the player is able to avoid immoralities by discovering alternative solutions, the more moral alternatives are gradually taken away. Eventually, advancing the story requires the player to perform utterly inhuman acts such as torture and murder.

Emily Short (2009) suggests that a game challenge can be seen as an effective way to measure the protagonist's devotion to a cause. In *Harvester*, the challenges become the measure of the player's devotion to the cause. Even if the player finds herself capable of advancing the story, the immoral means of doing so force her to consider. The concatenation of *Harvester*'s fiction puzzles reflects the player's moral flexibility. Though the acts performed in the game cannot be compared to real life acts, the urge to advance the story despite the simulated cruelties encourage the player to become aware of her ethical borders, at least in relation to games. This special message gets emphasized in the very last scene, in which the player's devotion is rewarded with an explanation: Harvest is a virtual reality that has been created to test whether one could be turned into a serial killer through simulation.

Harvester confirms that expressing a specific message does not necessarily undermine an aesthetic experience, but can in fact function as an essential component in its construction. In this case, fiction puzzles can be interpreted as arguments for inborn human immorality—a statement about the real world—yet the expressed message is also a fundamental component in building up the cathartic mayhem unique to the particular aesthetic experience produced by the game. Consequently, expressing a special message may increase the aesthetic value of a fiction puzzle.

In the end, it must once more be stressed that expression does not always enhance the integral experience. This is well illustrated via several educational games, which are fundamentally designed to convey special messages to players. For instance, in *Physicus: Save the World with Science!* (Ruske & Puhretmaier Edutainment GmbH, 1999) the puzzles stand out as operations of physics that repeatedly encourage the player to study the educational physics manual. By learning physics the player will eventually save the world, which indeed is an evident expression of recognition of physics. In this case, the expression does not connect to the story (about an emerging meteor) in any other way than by letting the player enter new locations. Poorly integrated thematic challenges merely overshadow the story, and expression becomes a limitation.

6. Conclusions

This paper defined the concept of *fiction puzzle*, which is an essential game challenge in most story-driven games, and the defining element of adventure games. The fiction puzzle was examined as an art product through John Dewey's pragmatist theory of aesthetics, and it was argued to be capable of producing *aesthetic experiences* as well as pacing and intensifying *integral experiences*. In addition, the fiction puzzle was found to be inherently expressive. Its structure being similar to riddles, it was affirmed as an art product capable of conveying artistic expression.

The aesthetic value of the fiction puzzle was suggested to divide in two: an *elegance of form* (i) and an *elegance of content* (ii). For aesthetic evaluation, three criteria were given to distinguish both types of elegance:

- (i₁) The purity of means of solving (solution does not entail exceptional knowledge).
- (i₂) The clarity of manifesting the problem.
- (i₃) The briefness of solution.
- (ii₁) Logicality in the story world.
- (ii₂) Level of integration to the story world.
- (ii₃) Success of expression that coheres with the story world.

Ultimately, the aesthetic value of a fiction puzzle is always improved when fulfilling these criteria, and it is never improved when not fulfilling them (with a moderate exception for the last criterion). An aesthetically valuable puzzle provides enriched aesthetic experiences for all solvers when compared to puzzles of lesser aesthetic value.

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Games

BEYOND ZORK: THE COCONUT OF QUENDOR. Infocom. Macintosh, 1987.
 GRIM FANDANGO. LucasArts. Microsoft Windows, 1998.
 HARVESTER. DigiFX Interactive. DOS, 1996.
 L.A. NOIRE. Team Bondi. PS3, 2011.
 LEISURE SUIT LARRY IN THE LAND OF LOUNGE LIZARDS. Sierra On-Line. DOS, 1987.
 MAKE IT GOOD. Jon Ingold. (Z-code), 2009.
 PHYSICUS: SAVE THE WORLD WITH SCIENCE. Ruske & Puhretmaier Edutainment GmbH. Microsoft Windows, 1999.
 PUZZLE AGENT. Telltale Games. Mac, 2010.
 SIMON THE SORCERER 3D. Headfirst Productions. Microsoft Windows, 2002.
 SECRET OF MONKEY ISLAND, THE. LucasArts. DOS, 1990.
 SHERLOCK: THE RIDDLE OF THE CROWN JEWELS. Infocom. DOS, 1987.
 SO FAR. Andrew Plotkin. (Z-machine,) 1996.
 TETRIS. Alexey Pajitnov. DOS, 1986.

References

- Aarseth, E. (2005): "Doors and Perception: Fiction vs. Simulation in Games." Paper presented at Digital Arts and Culture Conference, December 2005. Copenhagen. Available at http://www.escritasmutantes.com/fileManager/file/fiction_Aarseth_jan2006.pdf. [Accessed March 2, 2012.]
- Barthes, R. (1975): *The Pleasure of the Text*. Trans. Richard Miller. Hill and Wang: New York, NY.
- Bates, B. (2004): *Game Design*. 2nd ed. Course Technology: Boston, MA.
- Beardsley, M. (1958/1981): *Aesthetics: Problems in the Philosophy of Criticism*. 2nd ed. Hackett Publishing Company: Indianapolis, IN.
- Bissell T. (2011): "Press X for Beer Bottle: On *L.A. Noire*." Column at *Grantland*. June 8, 2011. Available at http://www.grantland.com/story/_/id/6625747/view/full/la-noire. [Accessed December 28, 2012.]
- Bordwell, D. & Thompson K. (1986/2004): *Film Art: An Introduction*. 7th ed. McGraw-Hill: New York, NY.

- Brown, S.; Gao, X.; Tisdelle, L.; Eickhoff, S.; Liotti, M. (2011): "Naturalizing Aesthetics: Brain Areas for Aesthetic Appraisal Across Sensory Modalities." In *Neuroimage*. Vol. 58 (2), pp. 250-8. Elsevier.
- Danesi, Marcel (2002): *Puzzle Instinct: The Meaning of Puzzles in Human Life*. Indiana University Press: Bloomington, IN.
- Deen, P.D. (2011): "Interactivity, Inhabitation and Pragmatist Aesthetics." In *Game Studies*. Vol. 11, (2). Available at <http://gamestudies.org/1102/articles/deen>. [Accessed June 10, 2011.]
- Dewey, J. (1934/2005): *Art as Experience*. Penguin Group: New York, NY.
- Ermi, L. & Mäyrä, F. (2005): "Fundamental Components of the Gameplay Experience: Analysing Immersion." In *Changing Views: Worlds in Play. Selected Papers of the 2005 Digital Games Research Associations's Second International Conference*, pp.15–27. Eds. Suzanne de castell & Jennifer Jenson. DiGRA.
- Fernández-Vara, C. (2009): *The Tribulations of Adventure Games: Integrating Story Into Simulation Through Performance*. Doctoral Dissertation. Georgia Institute of Technology.
- (2011): "From 'Open Mailbox' to Context Mechanics: Shifting Levels of Abstraction in Adventure Games." Paper presented at Foundations of Digital Games: Bordeaux.
- Humble, P.N. (1993): "Chess as an Art Form." In *The British Journal of Aesthetics*. Vol 33 (1), pp. 59–66. Oxford University Press: Oxford.
- Ingold, J. (2011): "Thinking Into the Box: On the Use and Deployment of Puzzles." In *IF Theory Reader*, pp. 229–247. Eds. Jackson-Mead K. & Robinson Wheeler J. Transcript On Press: Boston, MA.
- Juul, J. (2005): *Half-real: Video Games between Real Rules and Fictional Worlds*. MIT Press: Cambridge, MA.
- (2007): "A Certain Level of Abstraction." In *Situated Play: DiGRA 2007 Conference Proceedings*, pp. 510–515. Ed. by Akira Baba. DiGRA Japan: Tokyo.
- Karhulahti, V. (2010): *The Limits of Objective Art Criticism: Establishing an Objective Concept of Evaluating Artworks*. Master's Thesis. University of Eastern Finland.
- (2011): "Mechanic/Aesthetic Videogame Genres: Adventure and Adventure." In *Proceedings of Academic Mindtrek Conference 2011*. ACM: New York, NY.
- Montfort N. (2003/2005): *Twisty Little Passages: An Approach to Interactive Fiction*. MIT Press: Cambridge, MA.
- Olivastro, D. (1993): *Ancient Puzzles: Classic Brainteasers and Other Timeless Mathematical Games of the Last 10 Centuries*. Bantam: New York, NY.
- Peirce, C. (1932): *Collected papers of Charles Sanders Peirce*. Harvard University Press: Cambridge, MA.
- Schafer, T. et al. (1996) *Grim Fandango Puzzle Document*. Unpublished Manuscript. LucasArts Entertainment: San Francisco, CA.
- Short, E. (2009): "Cavanagh on Challenge and Complicity." Column at *Game Set Watch*. July 15, 2009. Available at http://www.gamesetwatch.com/2009/07/column_homer_in_silicon_cavana.php. [Accessed December 1, 2011.]
- Stevens, D. (2011): "IF as Argument." In *IF Theory Reader*, pp. 101–110. Eds. Jackson-Mead K. & Robinson Wheeler J. Transcript On Press: Boston, MA.
- Strickland E. (1993/2000): *Minimalism: Origins*. Indiana University Press: Bloomington, IN.
- Tavinor, Grant (2009): *Art of Videogames*. Wiley-Blackwell: Hoboken, NJ.
- Tronstad, R. (2005): "Figuring the Riddles of Adventure Games." In *Online Proceedings of Aesthetics of Play 2005*. Paper presented at the Aesthetics of Play conference: Bergen, Norway. Available at <http://www.aestheticsofplay.org/tronstad.php>. [Accessed December 1, 2011.]

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Wilbur, R. (1989): "The Persistence of Riddles." In *The Yale Review*. Vol. 79 (3), pp. 333–351. Wiley-Blackwell: Hoboken, NJ.