

Meaning Making Through Constraint: Modernist Poetics and Game Design Analysis

Anonymous Anonymous

School of Anonymous, Anonymous Institute
686 Anonymous Street NW
Anonymous, AN 12345
848-anonymous
anonymous@gmail.com

ABSTRACT

The process of reading a modernist poem is just as much a process of deconstructing it: the language is designed to make meaning through inefficient means. The reader must decode the text. The process of reading is not unlike the process of playing. I compare masocore games with the poetics of William Carlos Williams to discuss how constraints can be meaningful through the affordances of each medium.

Keywords

game studies, modernist poetry, close readings, constraints, masocore, William Carlos Williams, *Limbo*, Super Meat Boy

INTRODUCTION

Games can be expressive in a number of ways; one method is through a single, narrow mechanic. Rather than offer an assorted set of mechanics, a game can revolve around a few focused mechanics that the player explores thoroughly. This encourages the player to play with and master a very specific ruleset. Expert play is one way a videogame can be meaningful: it is more demanding of the player, which requires her to be more attentive to and have more control over her play style. Masocore is a videogame genre that best demonstrates this. This genre emerged fairly recently and is often produced by independent game developers. The portmanteau combines both “masochism” and “hardcore,” making reference to the genre’s notoriously extreme levels of difficulty. *Limbo* is an example of a masocore game. It is an Xbox Live Arcade game released in 2010 and, like *Silent Conversation*, is a platformer. Instead of controlling a capital letter and traversing lines of poetry, the player controls a small boy and must dodge hazards such as spiked pits and giant spiders. Its controls are pared down to running, jumping, and interacting with objects (e.g. pulling switches, pushing boxes). Even though *Silent Conversation* has even simpler controls—the player only runs and jumps—*Limbo* demands more of its players. A comparison of the two games’ jump mechanics reveals *Limbo*’s much more constrained gameplay. *Limbo* requires much more of the player even though it is mechanically similar to *Silent Conversation*.

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Both games pit the player against environmental hazards, which is standard for platformers. The player must dodge powerful words in *Silent Conversation*, while the boy in *Limbo* faces dangers like spinning saw blades and, in this particular example, electrocution from a malfunctioning neon sign. In the screenshot below, the player needs to progress to the right of the screen, but must avoid the flickering neon sign when it is lit.

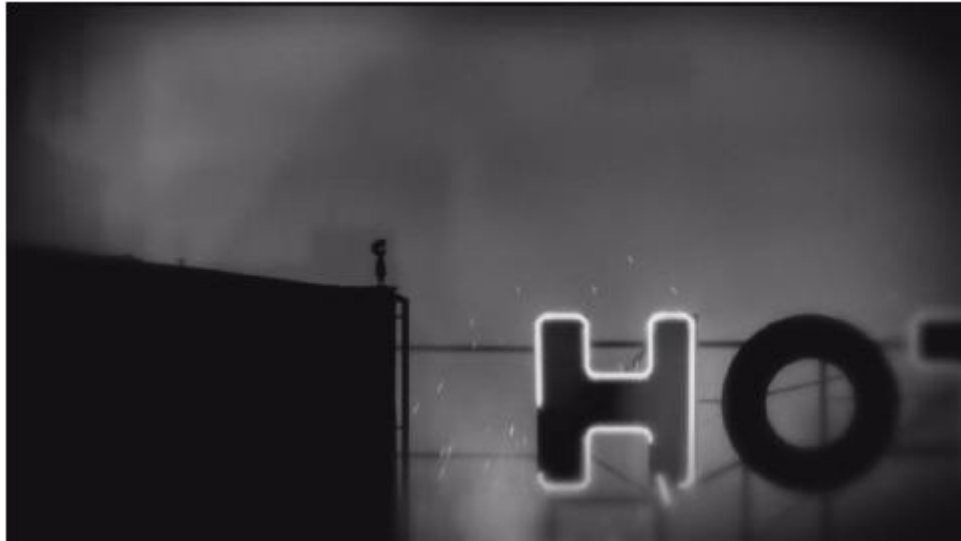


Figure 3-A

In both cases, the player must jump strategically in order to avoid each game's penalty (dimmed letters and death, respectively). The specters in *Silent Conversation* float in the general direction of the player; she has a variety of ways to avoid them. She can wait a few seconds until the specters float higher in order to run underneath them. Alternatively, she can jump over them before they float too high. In some cases, the player can simply backtrack through the level in order to avoid the specters entirely, thus bypassing the jump mechanic altogether. In the *Limbo* example, there is no other way to proceed through the level: the player must jump from the ledge to the left half of the H, from the left half of the H to the right half, and from the right half to the O. She can only do this successfully when the neon sign flickers off, which lasts exactly three seconds. This is just barely enough time to execute all three jumps. The player must have expert control of the jump mechanic in order to proceed. The player must time her initial jump when the neon light is still lit so that she lands on the left half of the H just as the light is turning off. This is similar to the "pinned" example in *Silent Conversation*, except that this precision is constant throughout *Limbo*, whereas most of *Silent Conversation* allows for more flexible play. This tension between flexibility and constraint is a key element of play and is an avenue explored in both videogames and poetry. In both media, constraints offer players and readers ways to explore and interpret literary and ludic texts. Constraints are also valuable for a text to be expressive by encouraging a more intimate relationship between the reader and the text, as well as the reader and her own reading habits.

OULIPO AS LUDIC LITERATURE

The relationship between constraints and play has been explored in poetry. In the same way that videogame players rethink their playing habits, constraints in literature have traditionally focused on the reevaluation of reading practices, particularly through innovations in literary form (“Six Selections” 148). One of the most notable groups in this tradition is the Oulipo collective, assembled in 1960 in France by Raymond Queneau and François Le Lionnais. The group name stands for “Ouvrir de Littérature Potentielle,” or the Workshop of Potential Literature (ibid). One of the explicit aims of the group is to be “aesthetically and politically engaged in an ethos of play for the sake of play,” as well as “to experiment with constrained forms in order to offer them to others for use” (Baetens and Poucel 622, 613). Oulipo is significant in its own right; most obviously, it explicitly integrates a ludic quality into its texts. More significantly, Oulipo is an example of a larger literary tradition called constrained writing that is valuable for game design. Constraints offer a way to question the traditional reader/writer binary in poetry and the designer/player binary in game design. William Carlos Williams’ poetics are significant in his own application of poetic constraint even though he’s not a formal member of the constrained writing tradition. Like members of the Oulipo, he also pays close attention to structure in his poetry, which produces meaning through its formal configuration. Both constrained writing and Williams’ poetics are ways through which poetry is relevant to videogame design.

The most recognized work to emerge from Oulipo is Raymond Queneau’s “Cent mille milliards de poèmes.” In this piece, Queneau writes ten sonnets where each line is interchangeable with any other. Each line is written using the same rhythm and rhyme scheme so that there are 1014 possible configurations, each of which is a complete, unique, and coherent sonnet. Jan Baetens and Jean-Jacques Poucel write of constrained writing in an introduction to a 2009 issue of *Poetics Today*. In it, they describe “Cent mille” as “chance operations.” The term originates from poet Jackson Mac Low and refers to the self-selected restraints produce new texts, but the reader has nothing to guide her decision when creating a new sonnet (Baetens and Poucel 621). They describe these constraints as a “complex game” in which the reader must discover the “formal rules” in order to make sense of the text and derive meaning from it (Baetens and Poucel 628). Queneau uses constraints in other works as well, including some of his prose work. Both Queneau and Oulipo are part of the literary tradition of constrained writing, which Baetens and Poucel define as the application of a “self-chosen rule (i.e., different from the rules that are imposed by the use of a natural language or those of convention)” (613). An example of this is the lipogram, in which an entire text is written while omitting a single letter. The authors’ definition is somewhat vague. They acknowledge that constraints, to some extent, are implied and exist *a priori* in any body of work: “...the notion of constraint is not new, for it is in the very nature of *form* to impose limits, establish rules, and design structures that more or less play a role in the meaning of a particular work or genre” (Baetens and Poucel 615). In this way, constrained writing is not so much a genre or tradition that exists on its own, but more like a continuum along which texts are more or less constrained. Even though these rudimentary definitions of constrained writing make it sound superfluous, it underscores characteristics of the tradition that parallel videogames, such as the emphasis of rules and design structures, which are constitutive of the latter medium.

Baetens and Poucel argue that one of the values of constrained writing is the production of “surprises that would have been unthinkable without the use of constraints” (616). This is certainly true of “Cent mille,” but Queneau’s chance operations are not useful within

the context of game design. They highlight the procedurality of constrained writing; Queneau's constraints create much of the „meaning' of the text(s). He designs his sonnets so that each line is interchangeable with every other one. “Cent mille” isn't so much a collection of poems as much as it is a rule-based process from which poems emerge. Constrained writing is perhaps most useful in the context of game design in that they offer a point of access for the reader/player: “Constraints are not ornaments: for the writer, they help generate the text; for the reader, they help make sense of it” (Baetens and Poucel 613). The rules offer additional ways of reading the text, much like procedural rules make sense of a game to a player. Constraints highlight patterns or sequences through which a reader can make meaning beyond the thematic content of a written text. In “Cent mille,” for example, the way in which the sonnets are produced offer as much meaning as the semantics of the poem: each produced sonnet is coherent without a poet having written each one of the 1014 individually. This creates a number of possible meanings: it might speak to the nature of language, or suggest that words are inherently objective. The constraints and structure of the poem are crucial to whatever interpretation the reader infers. In “Cent Mille,” specifically, the constraints literally generate the text. This differs from constraints that already exist *a priori* in the “nature of form” in that constraints in “Cent Mille” are intentionally applied to the work. It introduces a valuable point of entry to the text through which an author can express meaning.

CONSTRAINTS AS CRITICAL READING

Constrained writing has particular impacts on a literary text that I find useful when applied to game design. The first is that of context: constrained rules can create better context for making meaning. An example of this is Anna Anthropy's game *Mighty Jill Off*. It is a two-dimensional platformer where the player must move upwards—instead of to the right—to progress the game. The level design is solely composed of two elements: dangerous tiles (spikes, fire, etc.) and the platforms, or „safe' tiles (Anthropy, “craft”). The gravity is weaker than most platformers such that a jump reaches a high distance. However, the player must often navigate narrow spaces, so this distance is counterproductive. The player can cut her jump short by hitting the jump button in mid-air, which returns the player back to the ground. Alternatively, the player can hover briefly by hitting the jump button repeatedly. This is useful for parts in the game where hazards are both above and the below the player. Playing *Mighty Jill Off* requires the player to constantly push the spacebar in order to navigate the dangerous level design. The narrative is also significant: the player is a slave in a BDSM relationship that is trying to earn the affections of her master at the top of the tower. There is a close mapping between the extreme difficulty of the mechanics and the game's thematic content. Anthropy uses constrained mechanics to explore the theme of sadomasochistic relationships.

The addition of constraints also creates a narrower scope; tighter focus on a smaller subset of rules encourages deeper engagement with that system, be it literary or procedural. Baetens and Poucel write that the “deliberate planning” of constrained writing “is based on awareness and engagement” (622). They refer to Queneau's work in which only some of the rules were made obvious to the reader. The reader's partial awareness encourages a closer reading of the text in order to uncover other layers of meaning; the authors refer to this as “interpretive paranoia” (Baetens and Poucel 628). The constrained text becomes a space in which a reader must navigate the internal rule system as a way of engaging with the literature. This is not to say that a text with more constraints is consequently more engaging. The authors acknowledge this fallacy in his discussion of free verse writing. Within the field of constrained writing, it serves as its *de facto* foil:

“the notion of constraint cannot be disassociated from the symmetrical notion of ‘freedom’” (Baetens and Poucel 616). Unsurprisingly, proponents of constrained writing believe it to be a form that is more creative and expressive than free form writing, a literary tradition popular around the same time Oulipo assembled. Similar discussions of the constraint/freedom binary already exist in videogames as a necessary part of the design process: how much control will a player have in any given game? One example of this is the tension between games that are linear and those that are considered “sandbox” games. The latter offers a three-dimensional space in which the player can deviate from the core, scripted events of the game. One example is *Grand Theft Auto IV*, in which the player can choose from a variety of activities, from online dating to bowling to watching television. Linear games offer a much more scripted play experience in which a player has less control over how game events unfold.

I am more interested in the ways in which the constraint/freedom argument applies to a specific game system and which rules or mechanics are available to a player at a given time. I am not suggesting a value argument in which the addition or lack of constraints subsequently leads to a better or more engaging play experience. Constraints offer additional means through which a player can interpret a game. Mechanics function much like the “nature of form,” but in game systems instead of poems. A reader initially looks to established rules of grammar, syntax, etc. to make sense of a poem. Similarly, the mechanics available to a player creates particular expectations through which she makes sense of the game. Mechanics can be constraints and vice versa; the difference is that constraints add some restrictions to what a player can do. A basic example is when a player is given the ability to fly, but only for a limited time. In *Super Mario 2*, Princess Peach’s jump allows her to float briefly before falling back to the ground. This differs from other jumps in the game because Peach’s jump suspends gravity for a predetermined amount of time. This constraint puts the impetus on the player to be strategic when using this ability, paying careful attention to the space around her for particularly hazardous jumps, etc. When a constraint takes something away from a player, she learns something new about existing rules. In this example, the player learns the limitations of the default jump mechanic. The value of constraints in a videogame system is how they organize rules: in the same way that constrained writing offers a reader different ways of reading a text, constraints in a videogame offer a player different ways of playing the game.

Baetens and Poucel argue that one of the values of constrained writing is the reader’s deeper engagement with the process of reading. They describe it as “the systematic comparison of what the text actualized and what the reader can tease out of it” (623). As the reader plays with the rules, there is greater room for interpretation. This is not a new argument: theorists such as Roland Barthes have written on the increased role of the reader in the creation of a text’s meaning (Barthes). The significance of this quote is in the way it echoes descriptions of a videogame; the medium is often defined as a feedback mechanism, or a system of feedback loops (Koster). The “text actualized” is more applicable to videogames such that the underlying code is almost always inaccessible to the player. This inaccessibility does not prevent different modes of play. The best example of this is how different players approach two-dimensional fighting games, such as *Street Fighter*. There is the “text actualized” that is identical for all players: the move lists are consistent. Each character has a normal move, special move, super move, and throw. These constraints, or Baeten and Poucel’s “deliberate planning,” are also consistent. What varies is what the player “can tease out of it:” some players approach *Street Fighter* as a game of tactics and precision, while others see it as a game of speed. The latter group engages in what is generally referred to as “button-mashing,” where a

player pushes the buttons on a controller as fast as possible in hopes of stringing combos together as a way of attacking. There is, arguably, some degree of skill involved, though this mode of play is largely based on chance. Other *Street Fighter* players engage with the game's rules on a much more precise level. These players understand the game system on a different level than button-mashers, which Sirlin labels "scrubs" (Sirlin, "Guide"). David Sirlin was the lead designer of *Super Street Fighter II Turbo HD Remix*, a popular game in the *Street Fighter* series. He describes the game as "controlling space" (Sirlin, "Tutorial"). He analyzes one character's attacks in spatial terms. In Figure 3-B, Sirlin visualizes and explains a sequence of Chun-Li's attacks, as well as the space that each takes up on screen.



Figure 3-B

The first attack in the first frame is a slow fireball, which takes up the lower half of the screen. This forces the opponent to dodge the attack, either by blocking or jumping. If the opponent chooses the latter, the player (as Chun-Li) can follow up with a jumping short kick, which covers the top half of the screen (see second frame). The combination of these two moves forces the opponent into a corner, where Chun-Li can continue her on-screen dominance with a fierce punch, thus keeping the opponent trapped. Sirlin's walkthrough demonstrates how a player manipulates the rules in order to maintain control of the playfield. This reading of the system's rules calls for strategy and precision. Sirlin's "good players" rely on an intimate knowledge of the game's countermeasures, knowing what move can best respond to particular attacks (Sirlin, "Guide"). Compare this to the play of button-mashing scrubs, who rely on speed and chance. Speed is a factor for good players as well, but it is not the primary motivation behind the player's style. The value of constrained writing is in the interpretive potential accessible to the player: both button-mashing and strategic play are equally valid forms of playing *Street Fighter*. What is significant is that both use the same set of rules that allow for varied ways of reading the game and its mechanics. The constraints create space for the player to "tease out" modes of play that interpret the rule systems in different ways.

The *Street Fighter* example highlights another way in which constrained writing is relevant to poetry. As a player engages with and interprets a set of rules, there is a move towards mastery of the game system. In *Street Fighter*, the level of mastery is judged by the number of moves and combos that a player has internalized. The more strategies she has in her arsenal, the better equipped she is to successfully counter the attacks used against her. Her knowledge set is valuable because of its breadth. Mastery can also work as an insular process: rather than controlling an expansive move list, as in *Street Fighter*, a player can equally master a game by fully exhausting one or a few mechanics. This is where the masocore genre is most useful in my analysis. I refer to Anna Anthropy, the designer of one of the genre's most infamous titles, *Mighty Jill Off*. She defines the genre as one that "plays with the player's expectations, the conventions of the genre that the player thinks she knows" (Anthropy, "masocore"). The screenshot below shows an example of a platformer convention with which players are familiar: low-hanging objects

that fall on the player as she moves close to them. In one level of *Kirby's Dream Land*, there are coconuts in the trees, which fall as Kirby passes underneath. If the player stops moving under the tree, the coconut will hit her and she will take damage.



Figure 3-C

This expectation is subverted in the classic masocore game, *I Wanna Be The Guy* (*IWBTG*). Anthropy uses this example when defining masocore. The second screen the player encounters in *IWBTG* features a row of apple trees. The player must make her way to the right side of the screen, jump up on the elevated platform, and jump across the staggered row of platforms to the left side of the screen in order to progress to the next screen.

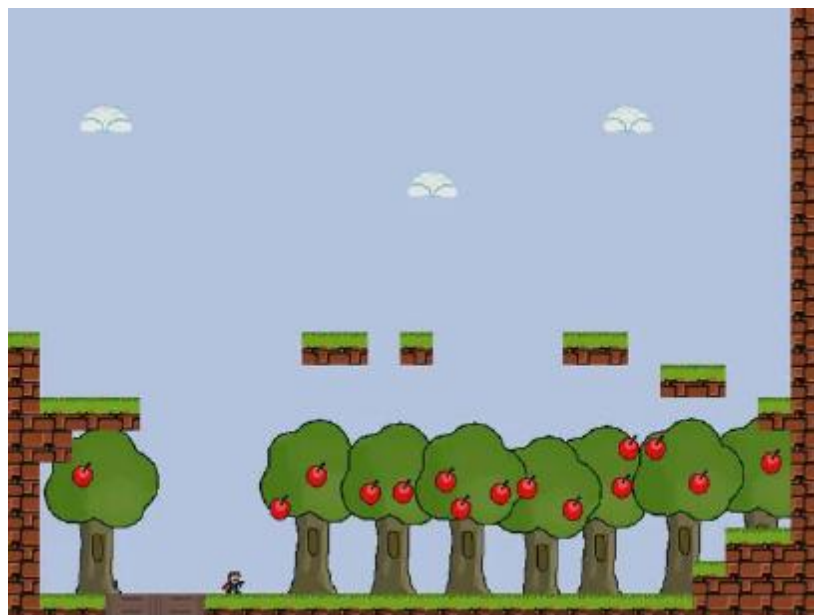


Figure 3-D

Of the 14 apples on the right side of the screen, some of them fall down toward the ground. The player expects this and thus knows how to dodge the hazard. However, as the player makes her way to the right, she discovers that some of the apples subvert gravity. As the player jumps up to dodge the anticipated falling apple, she is killed by the apples flying upwards. The apple on the very right side of the screen falls up, which will kill the player as she tries to jump up on the elevated platform along the right wall. By contrast, the apple on the very left of the screen falls down. This doesn't pose a threat to the player, though it does further subvert expectations, as she expects the final apple to fall up and kill her. This echoes Baetens' description of one of the effects of constrained writing. The player's engagement with a constrained text leads to a more critical reading of it; Baetens refers to this as "explicit reevaluation" (623). In the same way that rules can guide the interpretation of a text, it also encourages self-reflexivity: not only does a reader interrogate the text, but the reader also interrogates her own practices of reading.

CONSTRAINTS IN MASOCORE

Many of the well-known masocore games are platformers, though this trait does not define the genre. This includes the aforementioned *Mighty Jill Off*, *N+*, *I Wanna Be The Guy*, *Syobon Action*, *VVVVVV*, and *Super Meat Boy*. For the sake of my analysis, I will focus on the last two as puzzle-platformers, which is a common subcategory. Platformers also map well onto the concept of constrained texts: masocore platformers are often pared down to the genre's core mechanics, namely running and jumping. As mentioned in the introduction, simplistic mechanics aren't necessarily unique to masocore. The main difference between masocore games and conventional platformers is the demand for more precision and control from the player, as seen in the *Silent Conversation/Limbo* comparison. In reference to Baetens' definition of constrained writing, the run and jump mechanics are those that the player already anticipates because of her familiarity with genre conventions. She expects that there is a two-dimensional space where the player progresses towards a goal (often to the right of the screen) and will have to navigate around objects in the environment in order to do so. The additional constraint in masocore platformers comes from the precision required in order to successfully move through the space. In this way, the player enters a dialogue with her process of playing; she must exert more effort to make sure that her jump is precise and exact. Terry Cavanaugh's *VVVVVV* is a canonical puzzle-platformer masocore game. It is a fairly conventional two-dimensional platformer: the player controls an avatar that must traverse various platforms and obstacles. The significant difference between *VVVVVV* and other platformers—that is, its main constraint—is that it eliminates the traditional jump mechanic and instead gives the player the ability to reverse gravity. Cavanaugh's level design reconfigures the space such that the player has to reconsider elements with which she's familiar.

One rudimentary example of this reconfiguration is that the player is no longer protected on the ground; the ground can be as perilous as the ceiling is safe. In typical platformers, the ground is a way for the player to orient herself: it is the point to which she returns after jumping. *VVVVVV* subverts this spatial anchor; the player must reconsider every surface because each one is as safe or hazardous as the others. This kind of reflective design is prevalent in constrained writing as well. One of the canonical texts, John Cage's *I-VI*, was critiqued for being "unreadable." Baetens argues that it served a very different purpose as "a carefully plotted over-determination designed to overcome our conventional reading habits," which echoes Anthropy's philosophy on masocore games

(“masocore”). As a player encounters design that subverts her learned expectations—such as the *IWBTG* example—she reflects on her own reading habits. Ian Bogost encourages this kind of explorative design, referring to it as “plumbing the depths” (“Plumbing”). The article originally addresses changes in hardware, the same philosophy applies to game rules. By revolving the system around a single mechanic, the player learns to explore the potential afforded to them by both the game system and its designer. Cavanaugh’s careful level design reintroduces the flip mechanic in different contexts such that a player continually questions how to use it in spite of its apparent simplicity. This parallels Baeten’s “interpretive paranoia,” albeit in a slightly different context. Baetens’ reader is paranoid about uncovering rules in Queneau’s work. The paranoid player knows what the constraint is in *VVVVVV*, but is unsure of how to proceed. In the screenshot below, the title of the level alludes to the puzzle the player must solve in order to continue in the game.

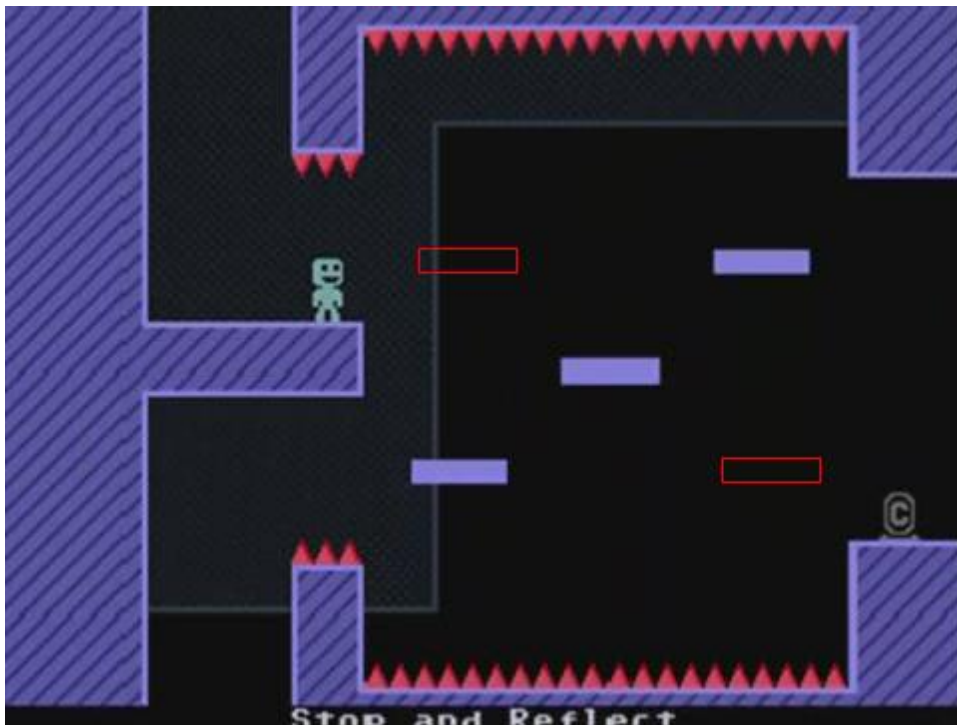


Figure 3-E

The player must make her way to the right side of the screen and onto the next. After she is finished off-screen, she must make her way back to the left side of the original screen (i.e. the one shown above) in order to move on to the screen under her. The three platforms are staggered and operate on a vertical loop. The platform on the very left is at the lowest point of the loop while the right most platform is at the top of the loop. Because the player can’t jump, she must stand on the left platform and wait until the platforms are in the opposite formation (indicated by the red rectangles). This allows for her to simply walk across the platforms to the checkpoint on the right side of the screen. When the player has to her way back across to the lower left exit, she discovers that her previous strategy will be ineffective because of the three spikes on the left, preventing her from simply walking onto that ledge. The previous strategy is only effective if she flips and traverses the platforms upside down. The player’s paranoia of this level comes from

having to reconfigure the space to account for the flip mechanic. She reconfigures the space again when she needs to use the same obstacles in order to reach a different destination point.

In this example, the way to overcome “interpretive paranoia” is by “plumbing the depths:” the player must use her knowledge of the flip mechanic and apply what she’s already learned in order to resolve new problems. Bogost’s argument is partially inspired by recent videogame releases that seek to revolutionize current hardware’s capabilities. He makes reference to the gaming industry and its tendency to release new hardware every five to ten years, like the Nintendo Wii or Microsoft Kinect (Bogost, “Plumbing”). This trend extends to rule systems as well; there is a constant push for „new’ and innovative mechanics. *VVVVVV* does this through the exploration of a single mechanic, which encourages a player to exhaust the possibilities afforded to her. *VVVVVV* is paradoxically innovative by “plumbing the depths” and creating something „new’ out of established conventions. This is modernist: the “make it new” ethos is emblematic of the literary movement. This kind of introspective innovation is also characteristic of the constrained writing movement: “writing under constraint has proved its potential in fostering a productivity that transcends the exhaustion of traditional forms or—better yet—a productivity that redeems and extends their usefulness” (Baetens 617). By adding constraints, poets are forced to be more creative with fewer parameters.

In the case of *VVVVVV*, the “traditional forms” are the running and jumping of two-dimensional platformers. The “productivity” is produced through the subversion of the jump mechanic. A conventional jump is a brief departure from the ground; the player only has to account for a short distance in the air. Though this distance varies, the player quickly learns the limits of this mechanic within the context of each game. By contrast, a flip in *VVVVVV* is much more inconsistent: the player stops moving through the air when she collides with another object, like the ceiling, a platform, or an enemy. The level design in *VVVVVV* often requires the player to flip through various screens. One of the game’s most infamous levels—“Veni, Vidi, Vici”—is designed such that a player must flip up through seven different screens before landing on a platform. There is a narrow, twisty passage that is covered in spikes. This gives the player a very restricted space that she must navigate while in free fall. Through these extreme constraints, *VVVVVV* encourages the mastery of the game system in order to succeed. Baetens and Poucel suggest that this is an inherent property of constrained writing: “its very mode of being is to *encode innovation* [...] in such a way that selecting and overcoming constraints masters them” (622, emphasis mine). While a player may have to repeat a level in *VVVVVV* several times in order to master it, this differs from regular grinding in games. Masocore gameplay poses a challenge: the constraints do not simply oppose or slow down a player, but tests her knowledge and expertise of the game.

The notion of “encoded innovation” reveals another paradox of constrained game design. I have been arguing that constrained writing is valuable as a point of comparison because it deepens the relationship between the player and the game system, but this also necessarily involves the designer. Constrained writers acknowledge this paradox of having a work stand on its own, while simultaneously “communicating the indelible charm of a writer’s signature” (ibid). In the same way that poets or writers leave the “indelible charm” of their writing style on their works, game designers inevitably leave traces of their design principles on game systems that reflect their perspective on the player/system relationship. This emphasizes the role of the designer in relation to the game system. In order for the game rules to be „encoded,’ the designer needs to have

strong authorial control. Of course, by definition, there is some degree of authorial control in order to design a game. The difference is that the designer who „encodes innovation’ is more considerate of the ways in which a player interacts with the rules of a game system. The way these rules are designed speaks to how much innovation or creativity is afforded to the player.

THE PARADOXICAL POETICS OF WILLIAM CARLOS WILLIAMS

This tension is not unique to videogames; authorial intention has always been a contentious issue in literary studies. Auteur theory suggests that texts are a transparent vehicle through which writers deliver their intentions. Later, poststructuralism isolates the reader-text dynamic as the sole site for making meaning, like Roland Barthes and his declaration of the death of the author (Barthes). Similar debates exist in the context of poetic interpretation (Ramazani et al., 948). Modernist poets have also asked how a text produces meaning, which is one of the motivations behind the drive to „make it new.’ Modernist poet William Carlos Williams looks at poems as systems; he innovates his work through the explicit emphasis on the form and structure of a text. He is typically associated with the Imagist movement, though later in his career, Williams himself explicitly disassociates himself from that poetic tradition (Williams, “Field”). Williams’ emphasis on poetic structure remains constant regardless of his associated poetic tradition. Throughout his entire corpus, both prose and poetry, Williams focuses his attention on the materiality of language. This refers to the ways in which words create connections among each other on the page. One example is Williams’ poem “Between Walls.” It is short and only contains five couplets. Williams uses enjambment to break each line:

the back wings
of the

hospital where
nothing

will grow lie
cinders

in which shine
the broken

pieces of a green
bottle

The lines are staggered. The spaces parallel the incremental discovery of the “green / bottle.” the reading of the poem is as drawn out as the revelation of the object at the end of the text. Williams’ constant use of enjambment is more significant as the line breaks force the reader to reevaluate the semantic content of the poem. Williams’ symbolism invokes nature imagery, namely “wings” and “green,” located at the end of lines 1 and 9, respectively. As the reader scans “the back wings,” the phrase is easily associated with bird imagery. It is not until she reads the third line that she discovers that the “wings” actually belong to a physical structure (“the / hospital”). Similarly, the “green” that appears at the end of the poem could refer to shrubbery or foliage, especially because of the earlier mention of “grow” in the fifth line. The line break reveals that the “green” is not a reference to nature, but in fact to its converse: the synthetic debris of a broken

bottle. William pays close attention to the materiality of the poem and how the arrangement of words influences how the text is read. His poetics insist on the careful composition and deliberate construction of a poem in order to convey meaning.

This calculated literary design is characteristic of Williams' work. He famously compares poetry to machinery in the introduction to his 1944 poetry collection, *The Wedge*. Williams writes in direct opposition to the Romantics: "There's nothing sentimental about a machine, and: A poem is a small (or large) machine made of words" (Williams, "*Wedge*"). Williams argues that this industrial metaphor speaks to the differences between prose and poetry, the latter of which is "pruned to a perfect economy" (ibid). Williams' use of language speaks to the canonical affiliation of his work with the Imagist movement. Writers in this tradition—Ezra Pound, most famously—wrote their poetry such that their words were efficient, chosen so as to evoke very concise and specific imagery (Ramazani et al. 348). This also applies to game design; Ian Bogost has cited Imagism as an influence both in his writings and artistic creation, specifically his 2010 Atari VCS game, *A Slow Year* (Bogost, "*Slow*"). What is more significant than the reference to Imagism is what Williams' metaphor reveals about his poetics. Williams' comparison to the industrial reveals that words are components of a system and produce meaning procedurally. To Williams, there is—to some degree—objectivity in language. The meaning of his poems are built into the design: "There is no poetry of distinction without formal invention, for it is in the intimate form that works of art achieve their *exact meaning*, in which they most resemble the machine" (Williams, "*Wedge*," emphasis mine). Whereas Queneau left meaning-making up to "chance operations," Williams argues that poets take words and compose them to communicate their "exact significances" (ibid). Williams' poetics is based in a kind of objectivism: he believes that poets can encode meaning through the structure and composition of their writing.

While one of Williams' concerns is with the transparency of language, he simultaneously argues for poetics that are seemingly the opposite. In 1948, Williams delivered a lecture at the University of Washington titled "The Poem as a Field of Action." He calls for "sweeping changes from top to bottom of the poetic structure" (Williams, "Field"). He critiques the "rigidity" of poetic conventions and calls to find "an objective way" to develop and improve upon structure. He specifically identifies poetic measure as the convention that has remained unchanged. Paradoxically, Williams also points to measure as the convention through which reinvention must happen, stating that it is "the only reality that we can know" (ibid). This change must happen through measure specifically because it is so accepted as a standard poetic convention. This appeal to the 'real' demonstrates that Williams still maintains a similar impulse for the objective as he did in *The Wedge*. Later in the lecture, however, Williams makes a curious reference to Albert Einstein's work and argues that poets should work relativity into their poetics. This is a starkly different direction than the "exact significances" described in *The Wedge*: while relativity certainly works against the "rigidity of the poetic foot," it is still open to interpretation and contradicts the metaphor of the machine. Williams argues that poets should be influenced by local speech and dialect: "we here must *listen* to the language for the discoveries we hope to make" (Williams, "Field," emphasis mine). To Williams, poetic measure is more natural and authentic when people speak, which makes speech a model around which poets should structure their writing. This is the foundation of a new rhythmic unit that Williams' calls the *variable foot* and is a key structural element in his poetry. The paradox is in the ambiguity of the variable foot: there aren't any rules or criteria for determining each individual unit beyond Williams' own subjectivity. For Williams, however, it is "the origin of form, the origin of measure" (Grenier 9). This

method is supposed to encapsulate the organic measure inherent in speech; Williams marks each unit with a line break, such that each line is a single variable foot. Williams constructs and uses a poetic device through which his poetry resembles a machine, but the device is based on a measure that is fluid and variable (i.e. speech). For Williams, this ambiguity is what makes his variable foot innovative as it offers a solution to the rigidity of prior poetic structures.

Williams' poetics appear contradictory; they are two polarized impulses that are seemingly irreconcilable. What this paradox reveals is a move towards structured, transparent design, while still allowing for ambiguity and interpretation. This harkens back to Baetens and Poucel's argument that constraint cannot be divorced from freedom. A poet cannot have complete authorial control over her work, no matter how many constraints are in the text. Williams was concerned with how a poet can control the meaning she conveys through a poem's form. Consider Williams' critique of previous poetic traditions: "Our poems are not *subtly enough made*, the structure, the staid manner of the poem cannot let our feelings through" (Williams, "Field," emphasis mine). Later in the lecture, he calls for the "opportunity to expand the structure, the basis, the actual making of the poem" (ibid). The variable foot is Williams' response to this, which he uses to "expand the structure" and produce meaning. The indeterminacy of the variable foot offers different possibilities for interpretation, thus „expanding' the poem. As much as Williams' calls for subtlety to allow for expressing "feelings," he imposes his own "rigidity" through his use of the variable foot. It is a measure that is dictated by Williams' interpretation of speech, which renders the measure inaccessible to the reader. In spite of this, there is value to Williams' poetry: it creates a paradoxical dialogue between "rigidity" (i.e. a consistent unit) and flexibility (i.e. his own ambiguous measure). He uses the variable foot as a way to control the interpretation of his text. By placing the line break after "wings" in the first line of "Between Walls," Williams calls attention to the multiple implications of the word. The paradox is that Williams' control over the poem—i.e. that each line is its own unit—actually allows for more flexibility in its interpretation.

Williams' "Spring and All" is one of the canonical examples of his use of the variable foot. His use of enjambment is almost consistent throughout the entire poem. Consider the first two stanzas:

By the road to the contagious hospital
under the surge of the blue
mottled clouds driven from the
northeast—a cold wind. Beyond, the
waste of broad, muddy fields
brown with dried weeds, standing and fallen

patches of standing water
the scattering of tall trees

The end of the second line suggests "the blue" is a noun. Within the context of the poem so far, "the blue" can be read as another way of referring to the sky. It is not until the reader moves to the next line—the next variable foot—that "the blue" is recast as a descriptor for "mottled clouds." Had this been written on a single line, there would have been no ambiguity as to whether "the blue" was its own contained unit; it would have been clear that it was an adjective belonging to "mottled clouds." By introducing a line break, Williams fragments "the blue/mottled clouds." "The blue" is its own semantic unit,

but simultaneously belongs to the line that follows it. This happens again at the end of the stanza with the phrase “standing and fallen.” Instead of using a terminal caesura to mark the end of the line, Williams introduces a line break and white space. An initial reading of the line suggests that the “standing and fallen” refers to the “dried weeds” that precede it. The end of the stanza suggests that this is one coherent semantic unit: the “dried weeds, standing and fallen.” The next stanza complicates this as the “standing and fallen” now also refers to the “patches of standing water.” Unlike “the blue,” “standing and fallen” does not change in syntax; what shifts is the referent to which “standing and fallen” refer. Both of these examples are ways in which Williams complicates meaning through formal innovation.

As much as Williams imposes his constraints on his poem, it is up to the reader to “tease out” meaning, much like my earlier *Street Fighter* analysis. There are, of course, some differences between reading “Spring and All” and playing *Street Fighter*, but I want to highlight the way in which constraints function similarly in both texts. In *SF*, the “text actualized” is composed of the move lists for each character in the game. The player knows which button maps to which move, but it is up to her to interpret which move is appropriate at a given time. A player chooses how deeply to engage with the game system. Similarly, the variable foot is the base formal unit in “Spring and All,” which provides the reader with a consistent pattern with which she can structure her reading of the poem. The reader knows where each variable foot is (i.e. each line), but does not know the logic and reasoning behind each line break, which creates enough vagueness that she can read various interpretations from the text. One difference between *SF* and “Spring and All” is that someone can read Williams without having knowledge of a variable foot. Baetens argues that the reader’s knowledge of an implemented constraint is crucial to her understanding the text (Baetens, “Free Writing”). This is a literacy issue and is not limited to poetry; not all *SF* players, for example, are aware of all the moves for a character. What is significant is that both *SF* and “Spring and All” create a consistent underlying structure, while simultaneously allowing for enough ambiguity for players and readers to form their own ways of reading the text. It is this space for interpretation that gives a text greater potential for expression.

‘RIGIDITY’ IN GAME MECHANICS

Consider a comparison of two similar games, *Super Meat Boy (SMB)* and the aforementioned *Limbo*. The latter is often heralded as a particularly expressive and artistic game, winning awards such as the IGF’s Excellence in Visual Art in 2010 and the Game Developers Choice Award for Best Visual Arts in 2011 (“Award Nominees”). As mentioned in the introduction, the player is in control of a small boy in a sinister environment, including the bodies of dead children and parasites that take control of the player’s direction. The art is entirely in monochrome, which contributes to the game’s tone. This is in contrast to *SMB*, which features bright colors and pixel graphics reminiscent of videogames from earlier generations. Based on aesthetics alone, *Limbo* appears to be the more expressive of the two games. The two are more similar when comparing their core mechanics. Both are two-dimensional puzzle platformers in which the main actions available to a player are the ability to move and jump. They are also both considered masocore games because of their difficult nature. Success often relies on trial-and-error, where the player attempts the same move or level repeatedly.

I refer to the work of Katie Salen and Eric Zimmerman in their 2004 book, *Rules of Play*. Their definition of a videogame as an experiential system is useful for contextualizing my comparison of the jump mechanic: how are the formal rules organized such that it affects

a player's experience of the game? I am limiting my analysis of *SMB* to the earlier levels to preclude the special abilities that are part of later gameplay. Similarly, I am ignoring the latter half of *Limbo*, which has a heavier emphasis on solving puzzles. I am focusing this analysis on each game's treatment of the jump mechanic. I contend that *Super Meat Boy* is actually more expressive than *Limbo*, in spite of the latter's reputation. Both games offer similar means through which a player gains pleasure, namely that of overcoming tension. This is a key element of any videogame, but changes depending on a number of variables, including genre, etc. The tension of a boss battle in a role-playing game (RPG) differs from a tactical attack in a real-time strategy game, for example. The latter puts pressure on the player to make decisions in real-time, while the former might be more an endurance challenge, as RPG bosses often spawn minions that the player must also fight. In both *SMB* and *Limbo*—as is the case for most masocore games—the player must nimbly navigate the given play space while avoiding hazards (e.g. saw blades, drowning).

Even though both games are in the masocore genre, there are subtle differences in the challenges that each game poses. *Limbo* presents surprise traps for the player, often catching them off guard. In the screenshot below, the player triggers a swinging bear trap when she walks underneath the platform (indicated by the left red arrow). There is no indication that a trap exists until the player triggers it. If the player attempts to outrun the swinging trap by continuing to run to the right, she triggers a second bear trap that swings in the opposite direction (indicated by the right red arrow). One possible solution is to dodge the first trap and outrun the second by backtracking to the left. The second trap, however, is also on a swinging rope. The player cannot run fast enough in order to avoid the second swinging bear trap. In order to avoid death, the player must trigger the first trap, backtrack to the left a few steps to dodge it, then immediately run to the right to dodge the second swinging trap. The player cannot deduce this solution until she is killed by both traps and learns how they work.



Figure 3-F

SMB, by contrast, offers puzzles like VVVVVV where the player can see the threats that lie ahead. Anthropy refers to this as “known fear,” where the challenge is not “because of

what the player doesn't know, but because of what she does" (Anthropy, "craft"). This is a different kind of difficulty for the player: it is not about the surprise of the unknown, but rather the resilience necessary to overcome a challenge that the player knows is achievable. The jump mechanic in *SMB* is an example of the latter difficulty. The screenshot below is of Level 1-15 of *SMB* called "Cactus Jumper." In this level, the player must reach the goal at top of the screen (the pink character to the top left) while dodging saw blades that run in the directions indicated by the red arrows. All four blades fly out simultaneously every two seconds. The player immediately recognizes the threat and how to avoid it (i.e. jumping over the blades).

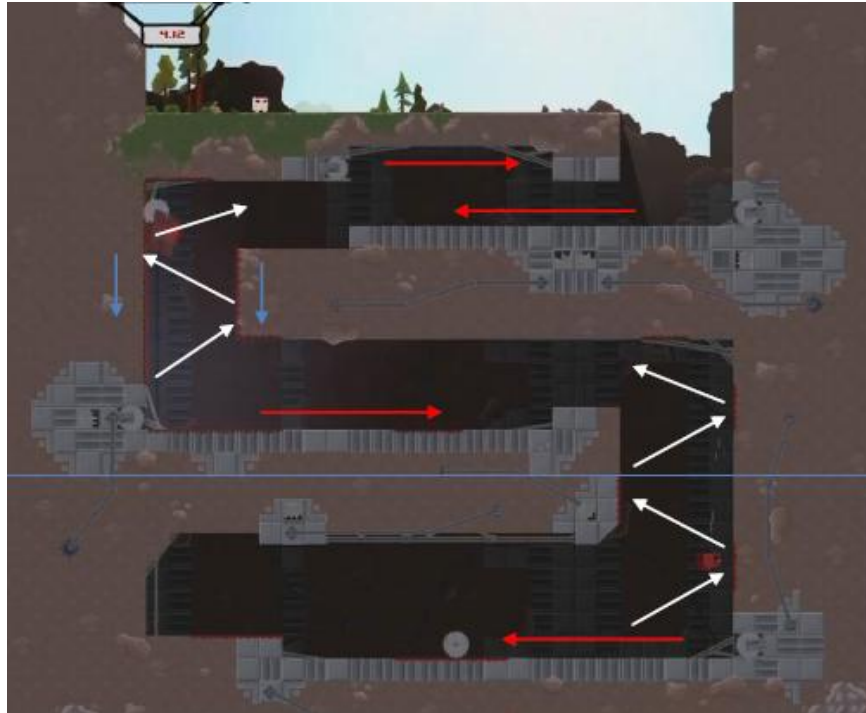


Figure 3-G: *The above screenshot is a composite of two attempts at this level. The first Meat Boy has successfully dodged the first saw blade. The second Meat Boy jumped directly into the third blade. Please note that the level is not visible to the player in its entirety. The perspective shifts to the top screen when the player reaches the second blade. The screen split is indicated by the horizontal blue line.*

The jump in *SMB* also allows for wall-jumping, which is how the player reaches the second blade. The lower Meat Boy in the above screenshot is about to ricochet off the wall—indicated by the lower set of white arrows—in order to reach the first platform. She then makes her way to the left across this first platform and must dodge the second blade, also by jumping over it. Again, she must ricochet off the wall in order to reach the second platform. She must repeat this strategy in order to reach the second platform. There is a trick, however: if the player ricochets up the second corridor in the same way that she did the first—that is, jumping directly from wall to wall—then she will jump directly into the third blade, as indicated by the second Meat Boy in the screenshot. The level is designed in such a way that the player who maintains a constant rhythm from the beginning of the level will be punished by the third blade. That is, a player *cannot complete the level based on twitch-reactions alone*. As indicated by the blue arrow, the

player must slide down either wall of the second corridor for a split second to wait for the third saw to shoot out. Then the player can jump up to the second platform and proceed to the top. The level design forces the player to reflect on her own play style.

This is like Williams' treatment of a line of poetry. The reader cannot make sense of the text based on prior knowledge alone. Williams' "green" might initially invoke natural imagery, but the reader's assumptions are challenged by the "glass" in the next line. Her conventional methods of reading the text are inadequate; Williams designs the poem in order to highlight this. Similarly, the player cannot complete this level of *SMB* by timing her jumps perfectly, which is a common tactic for two-dimensional platformers. She must acknowledge and respond to the level design by consciously adjusting her jump to account for the timing of the third saw. The game's jump mechanic is flexible enough to allow for a dialogue between the player and the designer via the game system. The designer communicates the tension in the level through the strategic placement of design elements (e.g. the blades) while the player responds with her mastery of the jump mechanic. She communicates to the designer that she is skilled enough to complete the level.

I return to *Rules of Play* to explain the difference between the jump mechanic in both games. Salen and Zimmerman outline four different components of a game system: objects, attributes, environments, and internal relationships (Salen and Zimmerman 51). The first three refer to elements within the computational system itself. *Limbo* and *SMB* are similar in these three elements: they both have objects—a blade or a neon sign—which have attributes—in both cases, death. These objects are located in each game's environment. The difference between either game's jump mechanic can be traced to its internal relationships. When a game system is analyzed as an experiential system—as opposed to Salen and Zimmerman's formal or cultural systems—internal relationships refer to the dynamics between the player and the system. The player is considered an integral component: "Because the players are the objects, their interaction constitutes the internal relationships" (Salen and Zimmerman 51). In *SMB*, this is reflected in the flexibility of the jump mechanic: the player is given that space to negotiate her jump within the context of the game environment. She can change directions mid-air, as well as adjust the jump distance. She can affect the latter by pushing the jump button with varied pressure, or by the avatar's speed prior to the jump (i.e. whether it is running or walking). This differs significantly from the jump mechanic in *Limbo*.

Immediately after the bear traps, the player is chased by a giant spider. If it gets too close to the player, it will stab and kill her. The player continually runs to the right to try and outrun the threat. She encounters a body of water, which is also hazardous to the player. There are a series of objects which are positioned to help the player get across safely. In the below screenshots, the first object is a log, which the player must push into the water. The player must jump on it and wait as it slowly floats across the water. There is an implicit timer imposed on the player because of the impending spider, so there is pressure to jump across the water as soon as possible. The player must wait, however, until the log floats far enough to the right before jumping to the small island. Conceptually, this section is quite suspenseful because the tension stems from whether or not the player can successfully complete each jump before the spider reaches her.



Figure 3-H

In order to successfully cross the body of water, the player jumps at the last possible moment at every opportunity: first she jumps from the ledge to the log, from the log to the island, then from the island to the second log. This is true of most jumps in *Limbo*. In order to avoid a hazard, like a pit of spikes or falling object, the player must begin her jump at the furthest point on a given ledge. There is no question as to whether or not a player can make a jump; if a jump is unsuccessful, it is because the player's timing is off. By contrast, a jump in *SMB* is variable and its success is not guaranteed, thus producing tension. Furthermore, there are actually two kinds of jumps in *Limbo*: a shorter jump (light button press) or a long jump (harder button press). There are rarely any instances in which a shorter jump is needed. This makes gameplay monotonous: it makes no difference that there are two kinds of jumps because the player only needs one in order to effectively play the game.

The commonality between *Limbo* and *SMB* is the tension of whether or not a player successfully completes a jump. The difference between them is how the two games incorporate this tension into their respective rule systems. I return to Salen and Zimmerman and their four components of a game system. The player's avatar (i.e. the little boy) is an *object* that can only jump one of two exact distances. The jump distance is an *attribute* of the avatar. Whether or not a player successfully completes a jump is a question of whether or not she invokes the attribute. *Limbo* „hardcodes' its tension: the jump distance is one of two absolute values and the player doesn't interact with it as much as she triggers it. If the player doesn't make the jump, she knows it is because she used the wrong jump (i.e. she didn't push the button hard enough) or she jumped too early. The player knows what to expect with each jump she makes and the tension is lost. This differs from *SMB*, which allows for the player to produce her own tension through interaction with the game system. Whereas *Limbo* relies on rigidly defined rules, *SMB* creates tension through its *internal relationships*. The flexible jump—changing direction in midair, etc.—creates a space where the player can negotiate the game rules in order to overcome a challenge in the game. There is meaningful engagement with the game system: the player is not simply enacting a game rule, but manipulating it.

Limbo is a less expressive play experience than *SMB* because, as Williams would lament, it isn't “subtly enough made.” The jump mechanic is too “staid” and doesn't allow the player to engage with the game system. *Limbo*'s design attempts to *embed* tension in every jump, rather than allowing the player to produce it herself (via the game system). This is like the “rigidity of the poetic foot” that Williams critiques insofar as the conventional metrical structure predetermines an authoritative, limited way in which the text can be read. *Limbo* tries to predetermine how the player experiences tension through gameplay. This is in contrast to Williams' variable foot, which maps well onto the jump

in *SMB*. The varied measure of “Spring and All” is like the varied distance of a jump in *SMB*. Williams’ line break introduces ambiguity to the act of poetic interpretation much like the indeterminate distance in *SMB* varies the tension of making a jump. Both games, as well as Williams and his poetics, demonstrate how constraint and flexibility are necessarily in dialogue with each other. Whether a text affords more or less interpretation to the reader or player is, paradoxically, a result of intentional, deliberate, and heavily authored design choices.

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