# Beyond Procedurality: Situating *The Witness* in the Proceduralism Debate

**Ryan C. Wright**

IT University of Copenhagen
Rued Langgaards Vej 7,
2300 København
rywr@itu.dk

## ABSTRACT

This paper posits a comparative analysis between two views of ludic meaning in game studies. The same two puzzles from Thekla, Inc.'s 2016 puzzle adventure game *The Witness* are interpreted first from a proceduralist perspective and then are re-interpreted from a play-centric perspective derived from a combination of practice theory and game scholar Miguel Sicart's formulation of play. The purpose of this analysis is to demonstrate how a game otherwise well-suited to proceduralist readings might be more completely understood from such a play-centric perspective and presents this experimental method of analysis by example.

## Keywords

proceduralism, play-centrism, game analysis, practice theory, *The Witness*

## INTRODUCTION

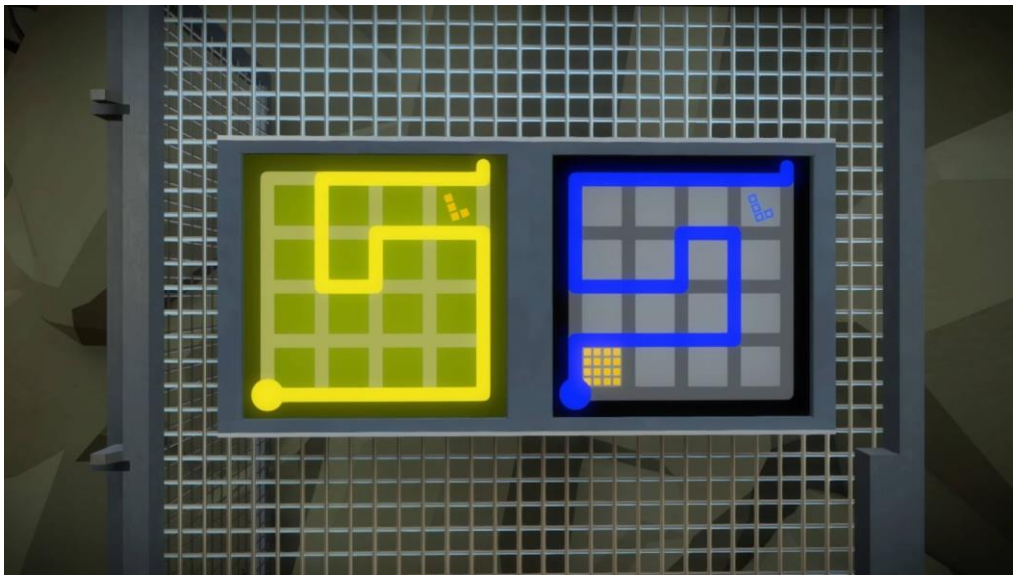

**Figure 1**: *The Witness* (2016), The final two puzzles in the 'tetromino' marsh area.

Can the above two logic puzzles from Thekla, Inc's 2016 puzzle adventure game, *The Witness*, be said to "refer to one another?" Given the information that the solutions to these puzzles do not functionally rely on one another in any way, what metric, method, or semiotic logic should be consulted to determine if these puzzles are in

**Proceedings of DiGRA 2019**

some way referencing each other? Two schools of thought in game studies might be productively consulted to answer this question. The "proceduralist" position of ludic meaning can be characterized as the view that meanings in games are derived from their rules, and that games are encoded with particular ideological perspectives by affording certain possibilities for play while restricting others (Treanor, et al., 2011). While scholars who advocate proceduralist positions vary in the degree to which they adopt its principles, a consequence of believing that a game's meaning can be derived from its rules is the view that videogames afford players a representational mode through process.[1] As Ian Bogost describes in his book that formulates the proceduralist view, *Persuasive Games: The Expressive Power of Videogames*, "Procedural representation is significantly different from textual, visual, and plastic representation... only procedural systems like computer software actually represent process with process." (Bogost, 2010). Adopting this view would encourage us to look to each of these puzzles' rules, underlying logic, and various possible solutions to determine how they are similar, and whether we can consider one of their processes a reference to the other.

However, the proceduralist focus on game rules as a site for interpretation has been critiqued by Miguel Sicart, who argues in his article "Against Procedurality" that proceduralist analysis does not adequately factor player experience. For Sicart, proceduralism renders personal experience of play, the socio-cultural context a game is played in, and an individual's reasons for playing secondary to an abstracted conception of play that an analyst infers from game rules. Moreover, Sicart posits a view that ludic meaning is only ever brought to bear in particular acts of play, and does not exist in game systems without players:

> Games structure play, facilitate it by means of rules. This is not to say that rules determine play: they focus it, they frame it, but they are still subject to the very act of play. Play, again, is an act of appropriation of the game by players.
>
> This understanding of play contradicts the designer-dominant perspective of the proceduralists, all too focused on rules and systems and their meaning. Play, for being productive, should be a free, flexible, and negotiated activity, framed by rules but not determined by them. (Sicart, 2011)

By this view, an analysis of the puzzles in Figure 1 would be incomplete without taking into account a particular play experience. Sicart suggests that the proceduralist view fetishizes game rules by ascribing them with meaning-productive power they do not have without players. His position of ludic meaning has been referred to as "play-centrism," a shorthand I'll borrow here (Treanor & Mateas, 2014).

That being said, Sicart's view of proceduralism has been somewhat infamously accused of being a strawman argument.[2] A more moderate, "proper proceduralist," stance that intends to account for the player's role in producing ludic meaning has been put forward by self-identified proceduralists Mike Treanor and Michael Mateas: "Without interpreters, a process inside a digital computer can amount to no more than abstract causal flows of electrons. Likewise, the mechanisms of physical games, like football or board games, are not meaningful until a player puts them into operation by ascribing them meaning. Game rules must be first interpreted by players and then understood as the vehicles of metaphors about some domain" (Treanor & Mateas, 2014). The proceduralist focus on metaphor interests me a great deal when considering ways to understand *The Witness*.[3] It's lead designer, Jonathan Blow, has

shared his understanding of the game's puzzles as depicting a "puzzle language" that conveys underlying, structural ideas integral to the puzzle solutions themselves:

> ...there's a system of puzzles, and a sort of a puzzle language that you learn—or that you get the sense of—that's all communicated nonverbally… the puzzles illustrate concepts to you as you solve them… every puzzle has a point, and you understand the point because in the process of solving the puzzle you had to see this new idea, and then by the time you've played all the way through the game you've played 20-plus hours of this stream of puzzle ideas… (Rev3Games)

In Sicart's critique, he characterizes Blow's position as proceduralist, by referring to similar comments Blow made about his prior game *Braid.* Sicart summarizes Blow's stance as, "Rules and meaning are created, and contained by, the puzzles—what players do is complete the meaning of the rules, derive meaning from a system, rather than focus on the creativity of play, since it is not the activity what [sic.] is important, but the system" (Sicart, 2011). In a few important ways, though, Blow's perspective might even be considered a more radical proceduralism than the metaphorical readings Treanor, Mateas, and Bogost have advocated for. His perspective is still as rule-based and object-oriented as any formal proceduralist reading, but for Blow his puzzles don't point *outward* toward a metaphorical concept, but *inward* toward their own internal logics—presenting them as conceptual sculptures for their own sake and containing truly systemically embedded meanings.

It would be unproductive and gauche to make assumptions about what individuals actually think about where meaning 'resides' in videogames, and such speculation is beside the point. The point of looking at Blow's position is more to observe that *The Witness* is a game that is well-suited to accept this rule-based, 'hard' proceduralist reading (to borrow phrasing from Treanor and Mateas) since one of its own creators already posits a compelling view from this perspective (Treanor & Mateas, 2014). But even if this is the case, I wonder if the opposition between so called "play-centrism" and "proceduralism" is such that a game like *The Witness* can't still productively accept a play-centric analysis. In the interest of developing and putting into practice some of what Sicart advocates, my goal here is to play with these methods to produce a robust reading of a complicated art game.

Though *The Witness* may at first seem an odd site for play-centric analysis, particularly because of it's apparent suitedness for procedural readings, I argue that a play-centric approach is necessary to fully understand the relationship between these two tetromino puzzles. To make this case, I perform and compare two analyses of these puzzles. The first is a 'hard' proceduralist reading informed by Blow's perspective of the "puzzle language," which examines the rules these puzzles derive from, along with the context in which they appear. I explain how such a proceduralist approach might say that the puzzle panel on the right refers to the one on the left, and subsequently that they each represent a simplification, or microcosm, of the broader possibility space of rules the tetromino puzzles are derived from. I then posit a modified play-centrist reading that aims to deepen these conclusions by considering the puzzles as more than a series of recognized ideas. Rather, the *act* of solving them invokes a habituated history of training players to internalize and recognize puzzle patterns. I buttress my analysis with Sicart's view of play outlined in his book, *Play Matters,* along with a practice theory perspective adopted from religion scholar Catherine Bell.

My goal for this analysis is to further one of Sicart's closing statements in "Against Procedurality": "my position against procedurality is that of a demand: for each procedural analysis there must be an orthogonal analysis of play that completes the arguments of meaning by means of accounting the play experience" (Sicart, 2011). I believe *The Witness* presents a hard case for Sicart's critiques of proceduralism, and I pose these readings as something of an experiment: If the premises of Sicart's critiques are adopted, namely that ludic meaning comes from player experience and not the game system itself, how might game analysts make sense of games seemingly ideal for even the strictest proceduralist methods like *The Witness*? I conclude that applying Sicart's view of play to *The Witness* affords an interpretive vantage point beyond the scope of procedurality alone. Though a proceduralist perspective affords rich analysis of *The Witness*, there is a played domain to the meaning of these puzzles that is inaccessible by focusing strictly on formal game elements. This domain is better characterized by Sicart's views that play's meanings, even within rigid systems, are ultimately *personal* to individual players, *negotiated* in a player's resistance to or compliance with the game system, and *creative* in that what is played is itself enacted and produced.

## CONTEXTUALIZING THE PUZZLES

Before moving forward with my interpretations of these puzzles, their in-game context and solutions require explanation. Each of *The Witness*' 500+ panel puzzles offer a self-contained logic the player must deduce. Players wander an abandoned, open-world island, throughout which they encounter computer tablet-like touch screens. Panel screens presents the player with a maze puzzle. Players draw lines from a circular starting-point of the maze puzzle to a rounded-off ending-point, usually located in a corner of the maze's grid. The first puzzles simply ask the player to draw a line through the maze (Fig. 2), while future puzzles incorporate obscure symbols on the grid (Fig 3). Through trial and error, players discover that each symbol corresponds to a rule that dictates how players must draw their paths in prescribed patterns through the maze.

**Figure 2**: One of the first puzzles in *The Witness*, no symbols.

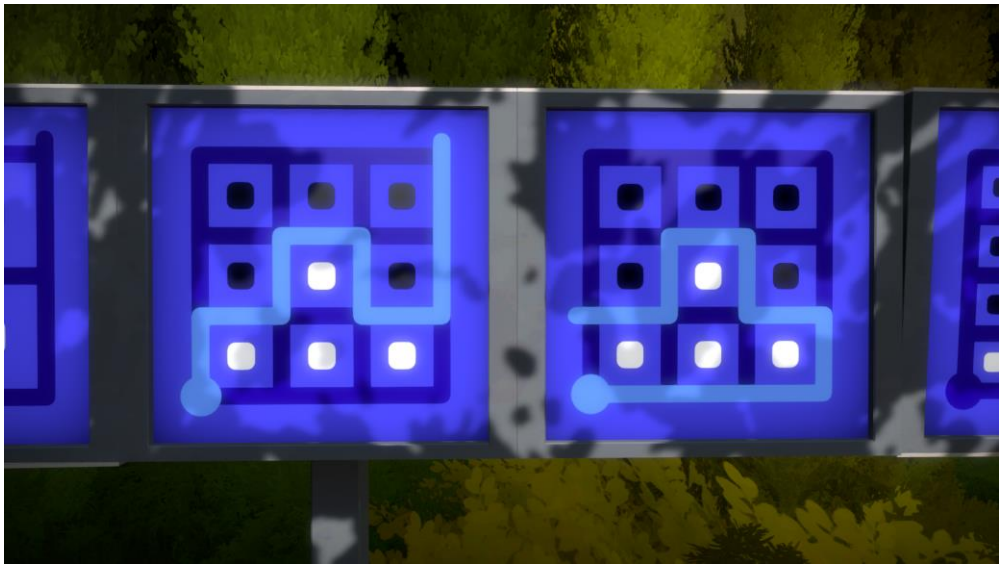

**Figure 3**: Two of the earliest puzzles that introduce symbols. The white stones must be divided from the dark stones to solve these puzzles.

**Figure 4**: The star symbol puzzles require players to group stars in pairs of two.

The island is divided into different biomes, each of which house a puzzle category. For instance, the star symbol puzzles (Fig. 4) require players to draw lines around symbols in groups of two and are mostly located in a tree-top area accessible through a network of bridges. Similarly, the puzzles with the multicolored squares (Fig. 5) ask players to draw lines around groups of like-colored squares. These color puzzles can be found in a greenhouse bunker area (Fig. 6), where a room's lighting heavily influences how the colors of symbols are perceived.

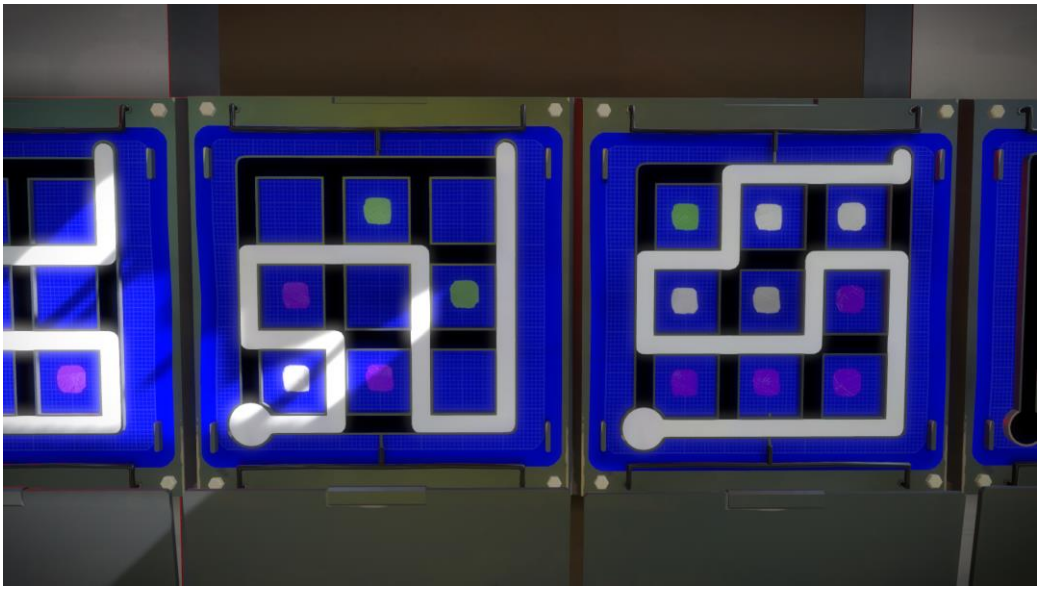

**Figure 5**: The color puzzles require players to group like-colors and divide away unlike colors.

**Figure 6**: The bunker area houses a series of color-based puzzles.

If players do not draw a path that corresponds with a symbol's requirements, the line they have drawn may flash red, and a sound effect reminiscent of a screen powering down will indicate the solution attempt failed. If a puzzle is successfully solved, the path the player drew will remain on the panel screen, accompanied by a digital chirp suggesting an electrical circuit has been completed. Solved puzzles in most cases send power through wires that connect each set of panels, powering up new touch screens with new puzzles for the player to progress through.

**Figure 7**: The marsh biome which houses the tetromino puzzle series.

The puzzles this analysis focuses on (Fig. 1) are located at the end of the marsh biome (Fig. 7). These puzzles require players to draw a path that corresponds with the tetromino shape on the grid. These block-like symbols are *additive* such that the shapes they depict can be 'stacked' on one another within the path the player draws. In Figure 8, the two three-block tetrominoes can be combined with the four-block tetromino to form the following path shapes:

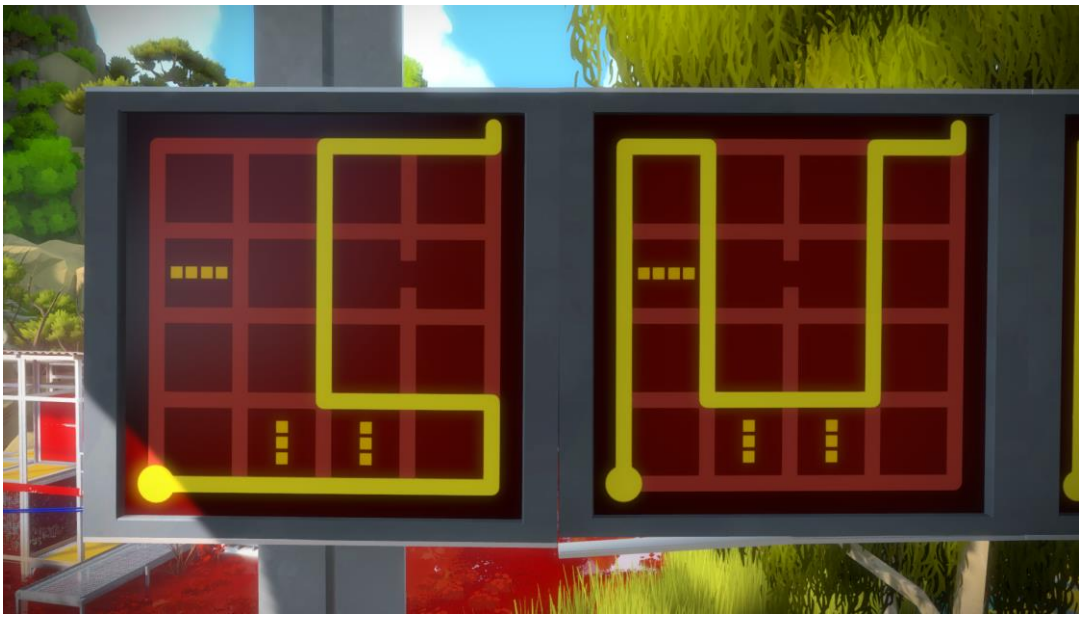

**Figure 8**: The horizontal tetromino is drawn at the bottom of each puzzle path, while the two vertical tetrominoes are 'stacked' on top.

The puzzle will accept these shapes in any orientation so long as the line encapsulates all necessary tetromino symbols. See if you can identify where each tetromino shape is drawn within these pathways. For the panel on the left, look only at the left-half of

the grid demarcated by the yellow line, and for the panel on the right, look only at the bottom-half of the grid demarcated by the yellow line.

Half way through the marsh area, the player is introduced to blue tetromino symbols (Fig. 9). Unlike the yellow tetrominoes, these blue symbols are *subtractive.* If the player groups a blue symbol with a yellow symbol, the number of cells a yellow shape requires to be drawn is deducted by the number of cells the blue shape depicts.

**Figure 9**: The total cells indicated by a yellow symbol are deducted by the cells indicated by a blue symbol.

After completing roughly 50 of these puzzles, the player reaches the end of the marsh area. Solving all the mandatory puzzles in a biome completes an electrical circuit connecting all solved puzzles to a laser beam. The beam jets out from the biome that housed a puzzle group to the top of the island's highest peak (Fig. 10). Activating a majority of these lasers opens the final section of the game located at the top of the mountain.

**Figure 10**: The marsh biome laser.

It is here, by this laser, where the puzzles depicted in Figure 1 can be found after successfully completing the tetromino area. These two puzzles are located on a locked door, which can only open the way out of this area after both puzzles are solved. When the player first encounters these puzzles, the blue panel on the right is turned off, and must be activated by first solving the puzzle on its left. Once both panels are solved, the door opens to a shortcut the player can use later to access the marsh more quickly. With this context on the game provided, I turn now to my proceduralist analysis of these two puzzles.

## THE PROCEDURALIST PERSPECTIVE

Jonathan Blow advocates for a way of interpreting *The Witness's* puzzles as instances of a "puzzle language," a view he develops in depth during a 2011 IndieCade lecture alongside friend and fellow designer Marc ten Bosch (Indie Cade, 2011). In this lecture, Blow analyzes a sequence where players are introduced to a new puzzle type. The underlying rule for these puzzles requires white-colored symbols to be divided from dark-colored symbols and is the first time players encounter any symbols on puzzle grids at all. In a previous article, I've argued that this sequence of puzzles is emblematic of an aesthetic design strategy Blow makes recurring use of that I call an "understanding check" (Wright, 2017). The understanding check is more than merely training players to master mechanics, as it habituates the player to expressly notice certain types of patterns, then breaks those patterns to demand players recognize an element of puzzle logic that the previous puzzles have only ever implied.

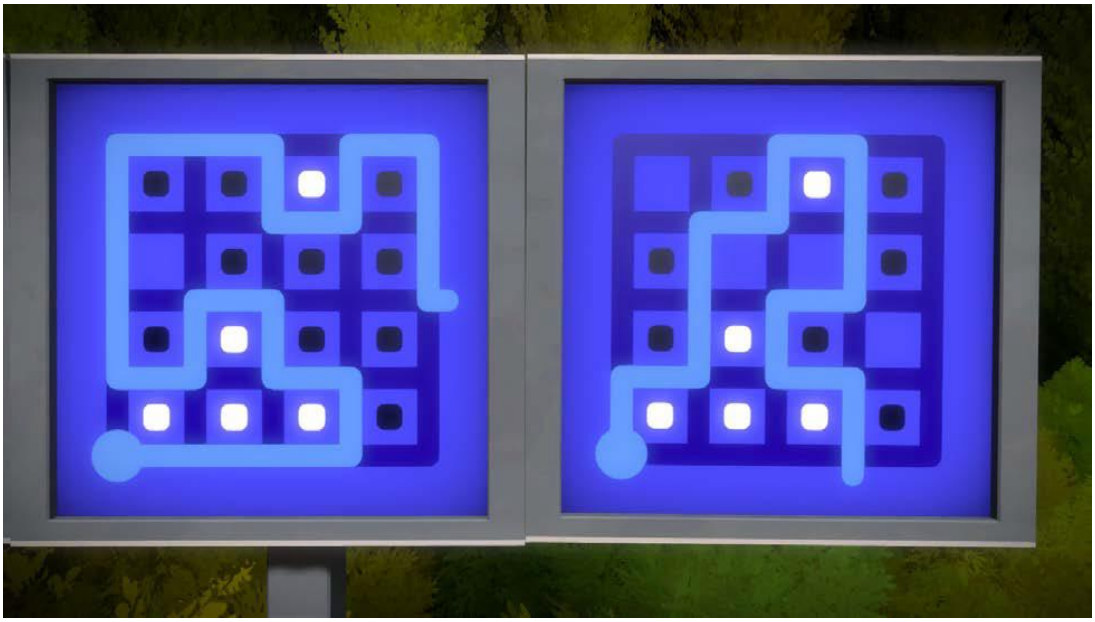

**Figure 11**: The first understanding check in *The Witness*. Players are conditioned by prior puzzles to draw lines around the white squares, however the puzzle on the right requires players to draw a path that primarily follows the pattern of the dark squares.

When describing how this early string of puzzles in Figure 11 makes, then breaks, patterns, Blow had this to say:

> ...another way to make puzzles extra interesting is to build a hierarchy of ideas out of them… if you can make a sequence and there's a pattern along the sequence, the player can have a gradually dawning surprise, or sort of a sublime growing of understanding of what this sequence is about... It's different from training the mechanic, and that's interesting…allowing myself to talk in the puzzles about things that are not directly related to training the mechanic helps me build a superstructure that's very interesting around those puzzles. (Indie Cade, 2011)

This "superstructure" Blow refers to suggests that accumulated puzzle solving develops, and transforms, the meaning of individual puzzles. While one way to interpret the puzzle couplet in Figure 1 (and reproduced in Figure 12, below) would be to take each panel in isolation, Blow's account suggests a reading that encourages seeing puzzles in sequence cumulatively. This cumulative understanding of puzzle groups suggests that individual puzzles, such as the tetromino couplet, might be thought of as standing-in for a superstructure of ideas that they, themselves, are a part of constituting.

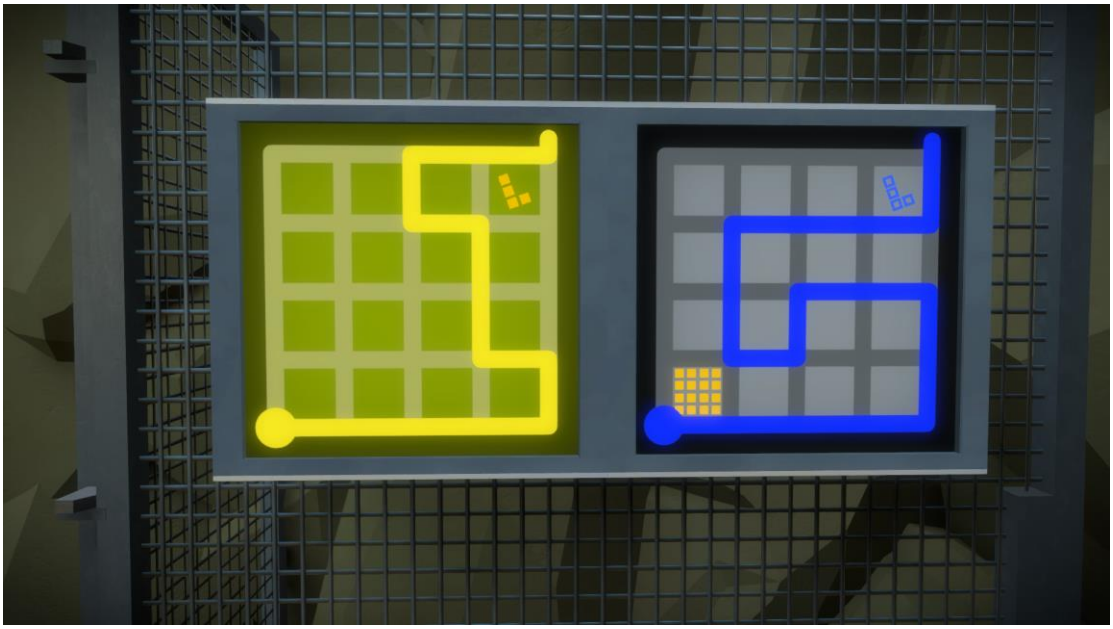

**Figure 12**: The puzzle couplet, alternate solution.

Consider, for instance, the context these puzzles share at the end of a biome devoted to their puzzle type. After completing a difficult gauntlet of roughly 50 prior tetromino puzzles, the player is presented with an unusually simple puzzle on the left (as the right panel is deactivated until the left puzzle is solved) (Fig. 11). After solving the first, the second essentially asks the player to perform the mirror image of the same logical steps. Where the first asks players to think in positive terms (*draw an 'L' block)*, and the second asks players to think in negative terms (*start with a full grid, take one 'L' block away*). Thinking of this tetromino couplet like the puzzle string in Blow's example (as the culmination of a larger grouping of related puzzles), their relative simplicity and ease stand out from the other marsh puzzles. What meaning or effect can be read into presenting the player with two simple puzzles after so many more difficult puzzles have been previously solved?

Following this thread, a Blow-inspired, 'hard' proceduralist stance might argue that the tetromino couplet present a kind of synecdoche, where a particular puzzle can stand-in for the broader design "space of possibility" the puzzle derives from (Salen & Zimmerman, 2003).[4] They are a microcosm that captures and articulates the broader spatial-reasoning superstructure the tetromino puzzles instill in the player. This reading can be inferred from each puzzles' solutions and their relative placement to past puzzles. In fact, the relative simplicity of the couplet's solutions, particularly their placement at the end of a host of difficult spatial-reasoning puzzles, leads me to believe that the sudden decrease in complexity is a *defamiliarization* technique.[5] Like the black and white puzzle Blow references, the purpose of these puzzles goes beyond training the mechanic, as the mechanic by now should be mastered. Rather, the two express a simplified instance of a broader puzzle schema. Where the yellow puzzle's solution is a simple example of tetrominomic spatial reasoning, the blue puzzle should then be understood from this perspective as a reflection of the first. It "refers" to the yellow puzzle in that it captures, then inverts, its logic. What this puzzle couplet communicates, then, is that the blue puzzles are the negative space to the yellow puzzle's positive space.

Given this perspective that these puzzles do engage in some manner of representational relationship, the specific nature of their representational relationship can be more-concretely formulated. Game scholar Paweł Grabarczyk provides a

typology of representations in video games, which affords precise language for such interpretive work. Grabarczyk's matrix of representations in videogames posits a Piercian trichotomy composed of indices, symbols, and icons. These representation channels are paired with referents that exist either internally or externally to the game and are either a part of the game's fictional world (diegetic) or are excluded from the fiction (non-diegetic). Grabarczyk summarizes the distinction between symbols, icons, and indices as follows:

> ...a given object A can be said to be [an icon of] a given object B if there exists a nontrivial homomorphism between A and B... As for symbolic representations… their most important characterization is that they are based on a convention – that is, that contrary to the two other types, the relation which bounds them to their targets isn't a natural one… for a given object A to be an indexical representation of B is for it to be caused by B. (Grabarczyk, 2016)

In Grabarczyk's model, the tetromino couplet straddles two distinct categories depending on how they are considered. The representational channel the blue puzzle uses to refer to the yellow might be classified as a *symbolic internal-non-diegetic* representation. This is because the two puzzles are not directly related in any formal sense, but by convention only: their placement together, similarity in shape, and overlap in spatial logic needed to solve them. An analyst might *infer* that there is a metaphorical relationship between the two, and thereby that the second refers to the first through proxy. However, as proposed by Blow, a hard proceduralist analysis might also consider the puzzles to have another kind of referential relationship to the broader superstructure they represent.

I mentioned above that we might think of each puzzle as representationally linked to this superstructure of ideas via synecdoche, where each individual panel stands-in as a partial instance of the whole set of ideas. We could think of each puzzle individually as a point on a map that charts out the game's space of possibility, and, in fact, the work of a designer making these puzzles would be to explore this possibility space by literally deriving puzzles from it—as Blow describes is his design process in the IndieCade lecture (IndieCade, 2011). I'd argue that, in line with Grabarczyk's model, the puzzles could be classified as *indexical internal-non-diegetic* representations, which is jargon in need of unpacking. The view I'm adopting to interpret these puzzles suggests that they do not point *outside* of the game toward some broader metaphorical concept, but rather point *internally* toward their own systemic logic, and so they represent an aspect of the game's general internal processes with their own particular processes. I'd further argue that their relationship to this broader superstructure of ideas is actually *causal*, that like smoke is to fire (the classic example of indexical signification), these particular puzzles are to be thought of as literal consequences of a space of possibility they are derived from, and so are *indeixical* signs.[6]

This procedural analysis seems adequately supported by the game's rules, affordances, and the orientation of puzzles. My understanding of puzzles in *The Witness*, however, is that they are actually more than a network of superstructurally linked ideas, and so I cannot whole-heartedly adopt this reading myself. In my view, *The Witness*' puzzles are a means of attuning personal change in the player by habituating her to recognize select patterns. I, therefore, consider an important

element of *The Witness* lacking from this proceduralist interpretation, and move to a play-centric reading to posit what I see as a more complete analysis.

## THE PLAY-CENTRIC PERSPECTIVE

In the spirit of Sicart's call to couple proceduralist interpretations with a corresponding account that privileges play, this section is not intended to counter or challenge the prior proceduralist reading. Rather, it's aim is to extend the proposed reading of the tetromino couplet into player experience—to make the proceduralist stance account for what it excludes. This approach has all of the advantages and drawbacks of taking a diverse and varied perspective like play-centrism and asking it to work within what Lars de Wildt cleverly calls a "procedural architecture," or the grounding of a player's personal, negotiated play within formal constraints (Wildt, n.d.).

Sicart's formulation of play in *Play Matters* notably accommodates this narrowed view: "Sometimes the beauty of play resides in the tension between control and chaos. Sometimes playing is voluntarily surrendering to form; sometimes it's being seduced into form, being appropriated by a plaything" (Sicart, 2014). What Sicart calls the "form," or structure, of a game can subdue players into playing *by* rules as opposed to his preferred appropriation *of* rules. Though Sicart maintains that conforming play to rules weakens it's more appropriative and subversive traits, play remains deeply personal, creative, and meaning-productive even within more rigid game structures:

> Play is appropriation, and therefore its relations with form are complicated. Form encapsulates, shapes, and steers play to a certain extent, but it is also seduced by play and appropriated by it… Game systems can only partially contain meaning, because meaning is created through an activity that is contextual, appropriative, creative, disruptive, and deeply personal. Games are props for that activity; they are important because they focus on it, not because they contain or trigger its meaning. (Sicart, 2014)

Veering off somewhat from Sicart's ideological bend, but still working within the bounds of his theory, I'd argue that the player solving the tetromino couplet does not wholly surrender meaning to the game system, but maintains a personal, negotiated freedom within constraint. From the above, he acknowledges that play can manifest as adherence to the game's form, but then stresses later that designing for play means "creating a setting rather than a system, a stage rather than a world, a model rather than a puzzle" (Sicart, 2014). Sicart makes no bones about bleeding together his philosophy of how play works into his aesthetic design preferences, but his focus on play's appropriative subversion of game rules leaves something of a gap in his formulation of play.

For this reason, I transition from relying on Sicart's theories to appropriating them somewhat for my own purposes. I extend the personal nature of play into experiences where the player voluntarily operates within constraint. Solving puzzles in *The Witness* is not derived from the player dogmatically following what she is told to do by an authoritative system, but rather her tinkering emerges out of curiosity whereby the player comes to see what the designer sees in each puzzle. To be seduced by the form of *The Witness*, to revel in its prescriptive boundaries, is not a command—"look

and see!"—but is rather a guided seeing, or recognition motivated by volitional curiosity—"I see what you see."

Moving outside of game studies for a way to develop Sicart's theory, religion scholar Catherine Bell's research on ritual from the perspective of practice theory comes to mind, as formulated in *Ritual Theory, Ritual Practice*. One of the points of contention within ritual studies during her time of writing seems surprisingly like the proceduralism debate: the degree to which rituals can be interpreted as primarily *communicative* formal structures. Citing Roy Rappaport, Bell provides an elegant summary of how the self-effacing nature of practice is such that the meaning of ritual is often reduced to communication, even though it might be best understood as the habituated strategies which produce ritualized bodies:

> Rappaport makes a similar point in describing how the act of kneeling does not so much communicate a message about subordination as it generates a body identified with subordination. In other words, the molding of the body within a highly structured environment does not simply express inner states. Rather, it primarily acts to restructure bodies in the very doing of the acts themselves. Hence, required kneeling does not merely *communicate* subordination to the kneeler. For all intents and purposes, kneeling produces a subordinated kneeler in and through the act itself… Indeed, ritualization is the strategic manipulation of 'context' in the very act of reproducing it. (Bell, 1992)

There is an appealing similarity between Sicart's play-centrist focus on the player's "negotiation" within a rigid play structure and Bell's account of how the kneeler's bodily comportment produces the kneeling ritual itself. Though the activities, game and ritual, occupy meaningfully different cultural contexts that prevents much comparison between each type of act, there is a useful analogousness to the framing of power in both situations. Where the play-centrist argues that all significance in a game is brought to bear by the productive play of the player, the practice theorist suggests that the ritual's significance (even existence) is only ever brought to bear by and through a ritualized body.

Deviating sharply from Sicart, this embodiment is necessarily personal for the ritual practitioner in Bell's view; regardless of how strictly the adherent can be said to follow or appropriate the rite:

> Integral to the process of objectification and embodiment described earlier are concomitant processes of consent, resistance, and negotiated appropriation. In a very basic way, one consents to participation by a variety of internal discriminations about one's relation to what is going on…a participant, as a ritualized agent and social body, naturally brings to such activities a self-constituting history that is a patch-work of compliance, resistance, misunderstanding, and a redemptive personal appropriation of the hegemonic order… Just as participation is negotiated, so are the processes of objectification and embodiment. Embodiment, like

> consensual participation in the objectification process of the rite, is experienced as a negotiated appropriation, not as a total and indiscriminate absorption or social molding. (Bell, 1992)

The ritual practitioner actually produces what a social theorist might call the 'ritual object,' or the formal structure that *seems* to authoritatively govern the adherent's practice. Bell's point, however, is that it is a mistake to conclude that formal ritual objects can be formulated as distinct from particular ritualized acts and particular ritualized bodies. Doing so would divide dancer from dance via an abstracted, theoretical fetishization of this structure; a critique I think of as parallel to what Sicart might call the proceduralist's fetishization of a game's rules or "form." As such, voluntary participation in what Bell calls "the objectification process," or what may seem like the 'subduction' of a ritual practitioner into the formal structure of ritual is actually always an individual negotiating her adherence to a history of practice. Where the ritual practitioner partakes in producing a habituated history that constitutes and codifies the ritual object itself, the player of *The Witness* produces a played habituated history of embodied solving, and as such produces a certain, guided, way of seeing.

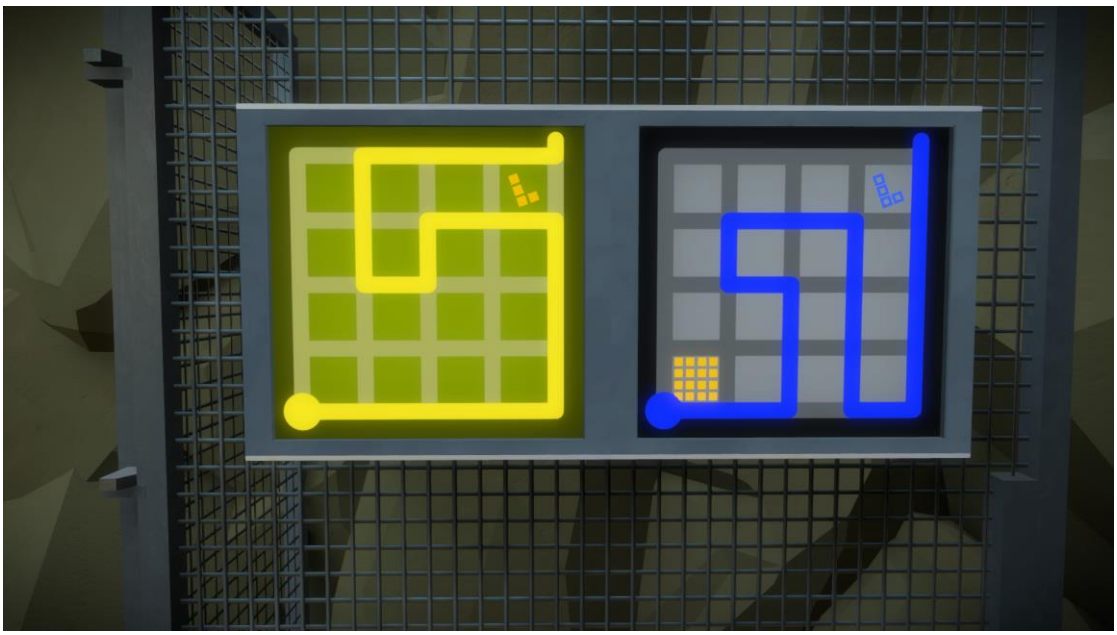

**Figure 13**: The puzzle couplet, third alternate solution to blue puzzle.

With the help of practice theory, a play-centric reading of the tetromino couplet comes into focus. Where the above proceduralist argument ends by designating each puzzle as representations of a broader superstructure of ideas, a play-centric account—focused on the embodied practice of the player—would de-emphasize the symbolism of these puzzles, and highlight the habituated history of play the player brings to bear on them when tinkering with possible solutions. Where the proceduralist view frames the player's primary task as producing *solutions* that demonstrate *knowledge* of a puzzle's latent ideas, the play-centered analysis considers the player's *act of solving* puzzles as entailing and reproducing a history of prior solving. Acts of failing to solve puzzles would enter here as well, as they in turn become a part of the played, habituated history players accrue as they internalize the game's logics. Players of *The Witness* produce a *playing* and *pattern seeing* body that correlates with Bell's kneeler's kneeling body. In this sense, playing *The Witness* is

always already personal, and individuals negotiate their freedom, submission, and appropriation of/to the game's possibilities through this history of habituated pattern-recognition.

To finally return to the original question, can a play-centric analysis then call the relationship between the puzzles of marsh area's puzzle couplet "referential" or "representational?" It seems to me that a play-centric perspective does not accommodate notions like metaphor so much as it can accommodates discussing repeated, habituated, acts of play. As such, my view is that the blue puzzle is a reinterpretation of the same core pattern-seeking training that the yellow puzzle facilitates. As such, it affords the player an opportunity to *reproduce* what they know, and what they have internalized, and does not merely *represent* those ideas. The puzzles are not reducible to their solutions, nor to any particular interpretation of their metaphorical or synecdochical meaning; they are also their solving. In other words, while producing solutions for the yellow puzzle invokes a history of *additive* tetromino patterns, producing solutions for the blue tetromino puzzle invokes a combined history of recognizing *the additive patterns and the subtractive patterns*. This is because the subtractive patterns are always reliant on the pre-recognition of the yellow tetromino additive logic, as the yellow blocks are always needed so the blue blocks have something to take away. Because the blue puzzle emulates and reproduces the training offered by the yellow puzzle, this is less a representation of the yellow puzzle in any way that Grabarczyk's model could articulate, and more an *invocation* of the yellow puzzle.

## CONCLUSION

Though *The Witness* is necessarily a game that accepts effective and productive proceduralist analysis, my play-centric account seeks to demonstrate that—even for games that readily accept this type of reading—an important part of meaning in game rules risks being overlooked by the very perspective that emphasizes them. A method that focuses primarily on a videogame's formal structure and rules as its site of meaning risks missing out on the player's personal process of attunement to those rules—the process of embodying rules and transforming mechanics into habits. My goal with this exercise has been to demonstrate how a play-centric analysis accommodates and enriches the interpretation of games analysts might otherwise primarily think of in proceduralist terms. I've proposed introducing a particular usage of practice theory to discuss how rigid game systems and mechanics can be thought of more in terms of bodily habituation than a more object-oriented formulation. From a design perspective, particularly one of design aesthetics, such a formulation might encourage thinking about mechanics less as systems and more as habits. These habits designers instill in the player through her practice and play of the game, which can afford her new ways of seeing the world.

While the proceduralist position affords a reading of these two puzzles as representational, my proposed combination of play-centrism with practice theory shifts the focus onto how players are transformed by operating within *The Witness* strict structure. In the act of solving one puzzle, the other is reenacted and reinterpreted. Where the proceduralist view helps to formulate a system-centric rule of synecdoche—where one puzzle stands in for a broader set—the play-centric perspective opens the door to the way games can pattern player behavior for aesthetic effect. This invocation of past, practiced, embodied play activities is curated in these two puzzles, and is closer to refrain in music scoring than mere reference. The puzzles are more than what their systems convey, for they are also a site that aestheticizes and curates the player's sight.

Players bring to bear these puzzle solutions in their solving. It is more than understanding; It is embodied production and embodied *re*production of player attunement to seeing particular patterns. I conclude that solving this puzzle pair is not merely the recognition of two ideas players understand, though proceduralist readings of them as such do provide a rich analysis. To whatever extent each puzzle does represent or capture a deeper idea, they *also* afford a field for habituating players to look and see.

## ACKNOWLEDGEMENTS

This paper would likely not have even been submitted for consideration without support and encouragement to do so from my professors at ITU Copenhagen, Espen Aarseth and Paweł Grabarczyk. Special thanks to them for their support, along with Jonne Arjoranta, who offered me helpful feedback on an earlier draft of this argument. Thanks also to my professor Miguel Sicart, who validated my interpretation of his research and tolerates my disagreements along with my enthusiasm for puzzle games.

## BIBLIOGRAPHY

Bell, C. M. (1992). Ritual Theory, Ritual Practice. New York: Oxford University Press.

Bogost, I. (2010). Persuasive Games: The Expressive Power of Videogames. The MIT Press.

Brathwaite, B., & Sharp, J. (2010). The Mechanic is the Message: A Post Mortem in Progress. In Ethics and Game Design: Teaching Values through Play (pp. 311–329). Retrieved from https://www.igi-global.com/book/ethics-game-design/37269

Hawreliak, J. (2012, December 5). In Defense of Procedurality – First Person Scholar. Retrieved October 21, 2018, from http://www.firstpersonscholar.com/procedural-rhetoric-civ3/

Indie Cade. (2011). IndieCade 2011: Jonathan Blow & Marc Ten Bosch. Retrieved from https://www.youtube.com/watch?v=OGSeLSmOALU

Möring, S. (2013). Games and Metaphor: A critical analysis of the metaphor discourse in game studies. 182–226.

Nelson, M. J. (2012). Sicart's "Against Procedurality" | Mark J. Nelson. Retrieved October 21, 2018, from http://www.kmjn.org/notes/sicart_against_proceduralism.html

Pratt, C., J. (2012, January 11). Players Not Included. Retrieved October 21, 2018, from Game Design Advance website: http://gamedesignadvance.com/?p=2409

Rev3Games. (2013). THE WITNESS: Jonathan Blow on his PS4 Open-World Puzzle Game - Adam Sessler Interview. Retrieved from https://www.youtube.com/watch?v=16wLW9hJTkg

Salen, K., & Zimmerman, E. (2003). Rules of play: game design fundamentals. Cambridge, Mass.: MIT Press.

Shklovsky, V. (2004). Art as Technique. In Literary Theory: An Anthology (2nd ed., pp. 15–22). Malden, USA: Blackwell Publishing.

Sicart, M. (2014). *Play Matters*. Cambridge; London: The MIT Press.

Sicart, M. (2011). Against Procedurality. *Game Studies, 11*(3). Retrieved from http://gamestudies.org/1103/articles/sicart_ap

Treanor, M., & Mateas, M. (2014). An Account of Proceduralist Meaning. Retrieved from http://www.digra.org/wp-content/uploads/digital-library/paper_465.pdf

Treanor, M., & Mateas, M. (2011). BurgerTime: A Proceduralist Investigation. Retrieved from http://www.digra.org/wp-content/uploads/digital-library/11307.07106.pdf

Treanor, M., Schweizer, B., Bogost, I., & Mateas, M. (2011). Proceduralist Readings: How to Find Meaning in Games with Graphical Logics. In *Proceedings of the 6th International Conference on Foundations of Digital Games* (pp. 115–122). New York, NY, USA: ACM. https://doi.org/10.1145/2159365.2159381

Wildt, L. de. (n.d.). Procedural Architecture: Meaningful Play as Appropriation. Retrieved from https://www.academia.edu/8170374/Procedural_Architecture_Meaningful_Play_as_Appropriation

Wright, R. C. (2017). Playing out Braid. *La Valle Dell'Eden, 31*, 83–100.

## LUDOGRAPHY:

Thekla, Inc. (2016). *The Witness* [PC]. San Francisco, CA, USA: Self-Published.

## ENDNOTES

1 For a sampling of diverse views among self-proclaimed "proceduralist" thinkers, consider the comments section of Charles J. Pratt's blog post, "Players Not Included" (Pratt, 2012).

2 Particularly, Mark Nelson and Jason Hawreliak's responses come to mind, both of which critique Sicart's characterization of proceduralist views (Nelson, 2012) (Hawreliak, 2012)

3 For examples of proceduralist readings that emphasize metaphorical interpretations of game systems, mechanics, affordances, etc., consider examples such as Brenda Romero's postmortem on her serious boardgame Train, or Mike Treanor and Michael Mateas' proceduralist investigation of the arcade game Burgertime (Brathwaite & Sharp, 2010) (Treanor & Mateas, 2011).

4 Katie Salen and Eric Zimmerman's oft-quoted definition of games from Rules of Play is referenced here. The "space of possibility" shorthand that many game scholars will be familiar with captures what I believe to be The Witness' intended referent: the puzzles are particular instances of (and are therby are indexical symbols that represent) the possibility space they are cut and derived from. This is the thesis at the heart of my proceduralist reading.

5 As Russian formalist Viktor Shklovsky describes this strategy, "The technique of art is to make objects 'unfamiliar,' to make forms difficult, to increase the difficulty and length of perception because the process of perception is an aesthetic end in itself and must be prolonged. Art is a way of experiencing the artfulness of an object: the object is not important…" [emph. original] (Shklovsky, 2004).

6 In his PhD dissertation, games researcher Sebastian Möring interrogates the reliance on metaphor in proceduralist readings, where he dedicates a section to arguing that simulations (in a similar Piercian sense) relate to what they simulate via *iconic* synecdoche (Möring, 2013). For the manner of proceduralist reading he interrogates, which might be considered textual, metaphorical analyses of rules in the style popularized by Bogost, the representational connection between rules and their procedural meanings are iconic in nature. This is because a game's rules stand-in for metaphorical readings beyond the rules themselves, and such a classification could also extend to my above reading of these puzzle's synecdoche. However, I think what Blow advocates is notably different than the kind of procedural readings that concern Möring. Though like most in the proceduralist camp, Blow's reading derives from his game's solutions, rules, intended play styles and formal structures, each puzzle's meaning points inward towards its own self-justifying, purposive structure and solution. If, for the sake of argument, we accept the reading that these puzzles refer collectively to a superstructure of rules each particular puzzle derives from, we might more precisely say that these puzzles' symbolic relationship to this superstructure is *indexical.* This is because they are composed *and caused by* the pre-existence of this superstructure in a kind of mathematical sense—to design them is to explore this possibility space. This stance, that a game's rules and formal structures are its locus of meaning in the purest sense, is what I'm putting forward as a Blow-inspired 'hard' proceduralist reading of *The Witness*.