Meta-Rules and Complicity in Brenda Brathwaite's *Train*

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ABSTRACT

Train, a board game designed and produced by Brenda Brathwaite (2009), is an unusual game in many regards. It is a game that reliably elicits feelings of complicity in its players with a tragic human event from history. It does this by using the technique of taking advantage of players' and audience members' expectations about the meta-rules around games and conflating them with the meta-rules of our society. In this paper, I will introduce the game Train, briefly explain the concept of meta-rules and their importance to our understanding of game design and game studies, and examine in detail the particular meta-rules that are utilized in Train to create emotional resonance in all who encounter it. Through this close reading of one game, I will show how the meta-rules around games can be effectively taken advantage of to produce projects that force our own internal examinations of our relationships with tragic events and society at large.

Keywords

Game Studies, Game Design, Meta-Rules, Complicity

INTRODUCTION

Even though multi-player board games have a rich history as art artifacts and subversive objects (Flanagan 2009), they are often overlooked in the conversation around "serious" games. *Train*, a board game designed by long time digital game designer Brenda Brathwaite, forces an examination of the power of board games to resonate emotionally with their players while encouraging them to consider their own complicity with harmful political and social systems.

Train is an entry in Brathwaite's *Mechanics is the Message* series of board games, and the game in this series that has so far garnered the most critical and media attention. Discussion of the *Mechanics is the Message* series, both by its designer and others, emphasizes the use of game mechanics as an expressive medium, a medium that has great emotional power (Brathwaite 2010(b), Brophy-Warren 2009, Monnens 2010, O'Donnell 2009, Samyn 2010, Schreiber 2009, Stein 2009, Wilson 2010). Brathwaite has said that these games are intended to explore tragedy and give the player a feeling that they cannot receive from other forms of media – the feeling of complicity (Brathwaite 2010(b)). It is

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this feeling of being complicit in the tragedy being (quite literally) played out that gives *Train* its emotional resonance and has left players of the game in tears. Brathwaite has said "I was trying to figure out a way to show people how you can be complicit in a destructive system. That's all a game is, it's a system of rules...But when humans do something unspeakable to other humans, there is a system there too." (Brophy-Warren 2010)

What Brathwaite suggests here is a conflation of the mechanics of a board game and the mechanics of a socio-political system. However, *Train* creates a feeling of complicity not through the explicit rules of the game, but instead through a clever manipulation of the conventions around playing a board game, that is, through the meta-rules (Sniderman 1999) or implicit rules (Salen et al 2004) of board games. It is therefore more accurate to state that *Train* points to a conflation of the social meta-rules of board games and the social meta-rules of socio-political systems.

This paper will argue that the emotional response of complicity elicited in the players of *Train* is not the direct result of the explicit (written) rules of the game, but rather how *Train* takes advantage of the socially implicit meta-rules of board game play in general. I will briefly discuss the issue of meta-rules, examine the particular meta-rules that are utilized by *Train* to create emotional resonance in its players, and finally consider the wider implications of the focus on meta-rules to the topic of socially conscious game design.

RELATED WORK AND SOURCES

Train has garnered a great deal of attention, from those who have actually played (or been witness to a play session) and also from those who have suggested their own ideas about it without experiencing it firsthand. As *Train* is a relatively new game, it has not so far garnered much formal academic attention but is discussed in detail in various online venues by those who have engaged with it either personally or else formed opinions through second hand accounts. Most conversations about Train center on individual player's responses to being forced to comply with a cruel rules system (Brophy-Warren 2009, Monnens 2010, O'Donnell 2009, Samyn 2010, Schreiber 2009, Stein 2009, Wilson 2010). While some authors hint at the greater issue of meta-rules, no works I have encountered have dealt with this issue in depth.

Devon Monnens (2010) in particular discusses in great detail how the ambiguity around the rules in *Train* produces the emotional effects that the designer wishes to instill in the game's players. While Monnens' article is helpful in describing one aspect of *Train's* emotional power, it is important to more fully explore the meta-rules that *Train* takes advantage of in order to understand the ramifications of its design strategy.

There has been some previous discussion of the issue of meta-rules around games, although remarkably little. In *Pules of Play*, Salen and Zimmerman discuss at a high level what they refer to as "implicit rules", or unspoken guidelines, around play. Drawing on psychologist Jean Piaget, Salen and Zimmerman seek to answer the following questions: "By what process to implicit rules come into being? How do players come to know these rules? How do they affect play?" (2004). The authors do not, however, consider the wider implications that implicit rules have regarding what these rules say about the importance of game playing and specifically what they can teach us about socially conscious game design. Stephen Sniderman, in his article "Unwritten Rules" discusses the idea of meta-

rules in great detail. Although he does provide suggestions for real-world implications of the existence of these "unrecorded rules", his article is focused on how players of games are unable to consciously know all the rules in effect and why players are able to play games even given this apparent paradox (Sniderman 1999). The philosopher Bernard Suits, in *The Grasshopper: Games, Life and Utopia*, identifies what he calls the "institution" of a game (using chess as an example), by which he means the social conventions surrounding a particular game (Sniderman 2005). Although Salen and Zimmerman's "implicit rules", Sniderman's "meta-rules" and Suits' "institution" all refer to the same concept, I have chosen to adopt Sniderman's term "meta-rules" for this paper, as it is a term used commonly by game players themselves.

While previous work in this area has raised the question of whether these meta-rules are essential to our experience of gameness itself, a question I will revisit below, they have not investigated the connections between meta-rules, the specific mechanics of individual games, and the larger social situations that games can depict and comment upon. As I will argue, I believe *Train* is an example that turns our attention urgently to such previously unasked questions.

TRAIN, THE GAME

My own knowledge of the game *Train* comes through interviews with the designer, anecdotal accounts from players who have experienced the game, and first-hand observation of play sessions.

Train is a game for three players. The stated goal for players is to move tokens down the track to a Terminus, via the train cars. Each token is "worth 100,000". On a player's turn, that player may either roll the die and add that many tokens to their train car, roll the die and move their car that many spaces along the track, draw a card or play a card. Cards have effects on the game, such as derailing a train car or moving a car to a different track. When a player's car reaches the end of the track, the player is to turn over one of the "Terminus" cards, place it on the table face up, and place all the tokens from their train car onto the card. According to the written rules, *Train* is "over when it ends."

The mechanics of *Train* are such that it could be played as an engaging strategy game, but ultimately it is a game about the Holocaust. Printed on each Terminus card is the name of a Nazi extermination camp from World War II. Placing tokens, each "worth 100,000", on a face-up terminus card is therefore symbolically placing thousands of Jews in an extermination camp, sentencing them to death. By extension, placing a token in a train car is condemning a metaphorical human being to their doom, and moving the car down the track is bringing them closer and closer to their end.

META-RULES

Game playing is often treated as frivolous business; so much so that some of the key points of classic definitions describe play as inherently "unproductive" (Callois 2001). In the effort to set games apart from the "serious" business of work, they are treated as if they do not matter. In fact, the very term "Serious Games" from the Serious Games Initiative suggests that the way the games they include under their initiative's umbrella are set apart from other games is by way of their "seriousness". Thomas Mallaby suggests that the stigma against the worthiness of games is due in part to a western tension between worthwhile "work" and worthless play: "...the history of Western thought has constructed a distinction between productive action as a contribution to society (ultimately in the material sense) and unproductive action, or play." (2007) Whatever the

reason, this view of games as being separate from "real life" and "unproductive" has been coming under a great deal of scrutiny in recent years (e.g. Malaby 2007, Consalvo 2004, Copier 2009). Regardless, the fact that players are invested in the games they play should be clear to anyone who has ever witnessed a "friendly" game of anything being played out in even the most casual of circumstances. In fact, Jespur Juul includes player attachment to the outcome of a game as one of his core elements of the definition of games (2005).

The existence of social meta-rules around game playing offers another powerful point of understanding for the issue of the "seriousness" of game playing. Meta-rules are the "understood" rules of games, social conventions that are not explicitly stated in the formal rules of a game, but are nonetheless expected to be understood and applied by players. Importantly, as pointed out by Sniderman, games would not be playable without these shared social conventions (1999).

Very little talk has centered around why it is so important to preserve the social metarules around game playing. Why is it that the cheater, the unsportsmanlike player, the spoilsport is so despised? Of the game theorists I have surveyed, Johan Huizinga (in Homo Ludens: A Study of the Play Element in Culture) comes closest to an explanation:

The player who trespasses against the rules or ignores them is a "spoil-sport"...the spoil-sport shatters the play-world itself. By withdrawing from the game he reveals the relativity and fragility of the play-world in which he had temporarily shut himself with others. He robs play of its illusion... The spoil-sport breaks the magic world, therefore he is a coward and must be ejected. (1950)

By explaining why games are important to their players on an emotional level, Jane McGonigal points to one critical reason for meta-rules: "A game is an opportunity to focus our energy, with relentless optimism, at something we're good at (or getting better at) and enjoy. In other words, gameplay is the direct emotional opposite of depression." (2011)

If what is at stake when players come to a game is not only an expenditure of time and attention, but this powerful emotional experience (the "opposite of depression"), and if games are unplayable without implicit social conventions (meta-rules) then it becomes clear why the meta-rules around games are so vital.

Meta-rules exist to preserve the game experience primarily by keeping the game challenging, preserving fairness (which makes a game feel safe and also ensures that the challenge of the game remains interesting) and respecting the emotional investment of all players involved.

What follows is an examination of the particular meta-rules that are utilized in *Train* to support the game's emotional impact of complicity on its players. While other meta-rules certainly exist in the world of games, the following explores those particularly important to the emotional resonance created in *Train*.

Games Are Safe

In *The Art of Computer Game Design*, one of the core elements attributed to games by Chris Crawford is that games "provide safe ways to experience reality" (1992). That

games are safe is something we as players have come to expect. There is no reason not to follow the rules of *Train* without question (before understanding the situation of the game) because what we don't know is that the game is designed to take advantage of this expectation. The physical form of the game, with its smashed glass and stark gray train cars may give us a hint that something is not right about this particular game. But ultimately, a game is a game. We do not expect it to lull us into a sense of complacency and engagement only to discover that what we were doing the whole time was a symbolically horrific act.

We Don't Ruin a Game Experience for Others through "Spoilers"

At her GDC talk, Brathwaite mused on the fact that even when one person has figured out the meaning of the game and where the train cars are heading, they "don't tell"(2010(b)). They might try to derail the other players' trains or otherwise stop the trains from getting to the end of the line, but they don't tell the other players what they are up to or why. In the end, many token-people are still transported to the camps and the player "in the know" is arguably just as complicit – by their silence — in those symbolic deaths as the player-conductors whose trains did the transporting. During the question and answer session, an audience member suggested that this was because the player who had figured it out didn't want to "spoil it" for the other players. This points to yet another gaming convention that Brathwaite has taken advantage of to instill complicity in her players, the desire of a player to not "spoil" the play experience for another.

We All Try to Win

As Brathwaite explained while discussing the game's implicit "don't tell" policy (2010(b)), in order to avoid "spoilers", the player who has discovered the meaning of the game often takes it on themselves to attempt to subvert the gameplay on their own, without alerting their fellow players. The ultimate effect of this is that the players who are still trying to move people down the line get frustrated with the first player and actively work against that player.

The commitment to playing to win is among the strongest held of meta-rules in social games. Bernard Suits refers to the person who does not try to win as a "trifler" (2005). Stephan Sniderman states: "As I see it, to perform the skills and behaviors associated with the game without consciously pursuing the object(s) of the game is not equivalent to playing the game." (1999) When a player doesn't play to win, they ruin the game experience by interfering with other players' sense of accomplishment. Winning against a player who isn't playing to win trivializes the victory.

Given the settings that *Train* is usually played in, its players are often comprised of people with a history playing games. To people who have spent much of their lives playing games, statements like "each token is worth 100,000" clearly implies a goal, even if the goal is not explicitly stated. Doing the "work" (from McGonigal, 2011) of playing the game while following the meta-rule of trying to win blinds players to the underlying context of the game, and creates complicity with a system that the players do not truly understand.

We Work Together to Negotiate Unclear Rules

Given that many of *Train*'s rules are purposefully ambiguous, it falls to the players of the game to interpret those rules and come to consensus about how to play the game. This in turn makes the players complicit in the construction of the

game's meaning. In Devin Monnens' "Tactility and Ambiguity: The Mechanics and Message behind *Train*", the author explores in how this ambiguity enhances the emotional experience of playing the game. "When the rules of the game are unclear, players must agree on a new interpretation of the rules before play can continue." (2010) Monnens describes a play session during which agreeing on how to interpret rules pointed to a variety of purposeful ambiguity woven into the printed instructions of the game.

In her GDC talk, Brathwaite herself talks about how this "unspoken rule" is coopted by herself as a game mechanic. When talking about *Train*, Brathwaite also
brings up the Derail event card, and how the meaning of that card must be
negotiated by each group of players. A Derail card causes a train car to go off the
tracks, emptying the passengers from that car. Half of the passengers return to
start while the other half "refuse to reboard". The meaning of the phrase "refuse
to reboard" can change depending on a player's pre-knowledge of the game
setting or else can simply determined for expediency in a way that seems cold
when the first Terminus card is revealed. (Brathwaite, 2010(a)) As Monnens
explains: "...the meaning of "refuse to reboard" is ambiguous. Why do they
refuse? ... And what happens to the passengers who "refuse to reboard"? Are they
executed for refusing? Or did they escape to Denmark, as it is usually interpreted?
The rules do not explicitly account for these kinds of limbo." (2010)

We Play the Game to its Conclusion

Because the final rule of *Train* is that it "ends when it ends", the end condition of the game is completely within the hands of the players. Do players interpret this as "when all the tokens arrive at a terminus"? Or do players decide at some point that they've had enough, and walk away from the game? Monnens explains how this rule calls on players to take a group stand against normal game conventions. "To use this rule, players must break with cultural expectations of play, and so the act of quitting the game one disagrees with is itself an act of rebellion – or an unspoken call for agreement." (2010)

If the game continues therefore, even when all the players know what it is they are participating in, it is an act of group complicity in tragedy, an unwillingness to "break with cultural expectations of play" for the symbolic greater good.

We Hold Each Other Accountable

One *Train* player, Casey O'Donnell, explored the enhanced sense of complicity offered by group play further:

Each of these games must be experienced in person and with at least one other player, who in some respect is recording in their lives that you have played a game. You have taken people to death camps or displaced families...You cannot avoid having another person witness your participation in tragic events. (2009)

The other players of *Train* are witness to your actions and there is no escaping their scrutiny. They are, however, your co-conspirators and share your guilt.

If We are Observing a Game in Progress, We do not Interfere or Interrupt

Most board game play (with the exception of high-level tournaments of certain competitive games) occurs in small groups, each group member being an actual player of the game. *Train*, due to its nature of being a curiosity that is played in galleries and universities, is played with an audience. At an event I attended at the Euphrat Museum, a game session was announced a half hour before it started, and was presided over by Brathwaite herself. As a result, this became a temporal event with an audience crowding around to watch. The audience kept a respectful distance from the game, close enough to view what was happening but far enough away to not interfere with the players' engagement. Many of the audience members were familiar with the game, although two out of three players were not. The audience discussed the game amongst themselves in hushed whispers, and as the first train car approached closer and closer to the spot where the player would unload its cargo, they were all tense whispers and strained necks. It was a relief of sorts when the first Terminus card was turned over, but the on-lookers were stunned that the player in question dutifully returned his train to the starting location and began the process all over again.

A woman in the audience, (a self-described activist) went to Brathwaite and whispered a question: could she interfere? The game-designer/artist shrugged and smiled. The audience member approached the player who had put his car back at in the start position and started questioning him. At this point another audience member decided to get involved by asking the players if they had read the Terminus card that had been played and the game slowly shut itself down as the players took a step back and looked at what they were doing.

Despite this direct intervention on the part of these audience members, this is not the normal behavior for watchers of the game. Audience members would whisper fervently if playing tokens representing people fell over, or if a player treated them with a significant lack of respect, but audience members do not, as a rule, intervene (Brathwaite 2010(a)). During the Euphrat play session, I myself felt extremely uncomfortable by the handling of the pieces/people, wanting to pick one up if it was knocked down and especially wanting to stop the game once the first player arrived at a terminus and lined up all the little tokens on the terminus card, shutting them away in an extermination camp. I was willing to be silent up until this moment, assuming that the player would see the card, get what was happening, and throw his hands up in disgust, thus ending the game. But when he started to fill his train with a new shipment of little yellow people. I felt a sense of rage boil up inside. Given the conversation around me, I was not alone in my surprise at the player's apparent callousness/ignorance. However, until one person took action, we all just stood back and watched. The audience at this show engaged with *Train* just as much as the players did, and were just as complicit in the events that were happening before us. This makes a powerful statement about what people will do -- and not do -- when witness to human tragedy.

Although the concept of the "magic circle" has been challenged in recent years, the main argument against understanding games through this concept remains rooted in the idea of the magic circle as a non-permeable boundary between being in play and being outside, in the "real world". Much work has been devoted to arguing that the magic circle is in fact semi-permeable from the inside out, (or that the term should be done away with altogether). (e.g. Consalvo 2004, Copier 2009, Juul 2005). What is not often argued, however, is the permeability of the game experience from the outside in. In other words,

that those watching from outside the circle of play can actually participate in the emotional investment of a game while simultaneously keeping distance so as not to disrupt the play experience of the actual players.

The theory of the "magic circle" could be utilized to describe a sacred play space for players of a game that for an outside audience functions much the same way as the "fourth wall" in theater. The audience does not want to interfere with the players of the game for fear of entering into a space which they, as a non-player, does not belong. At the same time, audience members experience their own emotional interaction with the game as it is played out. *Train* plays with and takes advantage of these conventions to place the audience members into the role of helpless onlookers.

The emotional resonance of *Train* is made possible by encouraging a feeling a personal sense of complicity with the system behind the Holocaust in each of its players and audience members. In Train, players take on the role of those people whose job it was to organize the grim journey of unfortunate people during the Holocaust to their dooms. The player has the opportunity to make choices that go against the system of tragedy modeled in the game, or to blindly follow the rules as written. If a player does not recognize the visual clues given by the game and therefore does not realize the role they've been cast into, it does not diminish their ultimate emotional experience with the game. Rather, when they reach the end of the track and look at the destination where they have taken all these people, it forces them to reflect on the choices they've made and whether they could have questioned, resisted, done things differently. Being "in the know" also does not diminish a player's emotional experience. Attempting to keep the trains from reaching their destinations, players who understand what *Train* is about are none the less complicit in the system simply by performing the action of sitting down and playing the game. "Some people approach the game and see it for what it is immediately, and their reaction is no less visceral than those who play the game. There are those who play all the way until the end and then realize where the trains were going - and it is such a steep drop. People become nauseated. Their faces flush. People have cried. There is always a onehour period of discussion after (or two hours at MIT)." (Brophy-Warren 2009)

CONCLUSION

The usefulness of understanding the implicit rules of games has been discussed in several places. (Salen et. al. 2004, Sniderman 1999). However there has not been much in the way of previous discussion around how meta-rules work in regards to the mechanics and themes of specific games. Exploring *Train* with this in mind shows how these connections can be vital. In the case of *Train*, the evocative power of the game depends on a number of the meta-rules we associate with the magic circle both for creating the experience of those "inside" the circle and for implicating those "outside." Intriguingly, as we have seen through our examination of *Train*, these social conventions not only exist but actually can be exploited through game design to create strong emotional resonance in the players and audience of a game, while forcing them to consider their own relationship with the larger meta-rules active in our society.

To recap, below are the meta-rules taken advantage of in *Train* and the ways in which they relate thematically to the game:

• Games are safe – We expect authority figures and institutions to protect our greater good.

- We don't ruin a game experience through "spoilers" Those in the know are just as complicit through their silence as those who unwittingly play along.
- We all try to win Given a goal that we artificially feel we should attain, we can be blinded to other things going on around us.
- We work together to negotiate unclear rules We all participate to make sense of ambiguity in the system.
- We play the game to the conclusion -- It is difficult to take a stand against expected conventions.
- We hold each other accountable We see what each of us is doing, and we share in the responsibility for what is happening.
- If we are observing a game in progress, we do not interfere or interrupt Standing by and watching makes you no less complicit than directly participating.

This analysis not only brings us to a closer understanding of *Train*, but also demonstrates issues that are important for the future of game studies and game design.

Train uses the technique of emotional manipulation through meta-rules to bring its players closer to a very dark picture of a horrific tragedy in human history. As multiplayer board games require the complicity of their players to abide by a rich set of social conventions in order to be played successfully, board games are a natural medium by which to consider the topic of complicity. However, our society operates through many social meta-rules that do not necessarily revolve around supporting fascist regimes or taking part in human tragedy. This suggests that the meta-rules around game playing may be a useful tool for game designers wishing to interrogate a wide breadth of social issues, on multiple platforms and in multiple formats. Multi-player online games operate by their own sets of meta-rules, and even single player digital games command certain conventions in order to provide a player with an "authentic" play experience. Might we be able to imagine, therefore, a game that works with our understanding of certain meta-rules of which gives its players an up-lifting experience? This is a rich direction for exploration that I hope gains further attention in the future.

BIBLIOGRAPHY

Braithwaite, Brenda. Interview with Author. December 2010

Brathwaite, Brenda. GDC 2010 -- How I Learned to Dump Electricity and Love Design, 2010. GDC Vault. Retrieved 11 December 2010: http://www.gdcvault.com/play/1012259/Train-(or-How-I-Dumped

Brathwaite, Brenda. Train, 2009

Brophy-Warren, Jamin. The Board Game No One Wants to Play More Than Once, 24 June 2009. Wall Street Journal Digital Network. Retrieved 11 December 2010: http://blogs.wsj.com/speakeasy/2009/06/24/can-you-make-a-board-game-about-the-holocaust-meet-train/

Caillois, R. *Man, Play and Games.* University of Illinois Press, Urbana, Chicago, 2001. [1958]

Consalvo, M. "There is No Magic Circle" in Games and Culture, vol 4, no. 4 (October 2004). 408-417.

Crawford, Chris. The Art of Computer Game Design. 1992. Scribd. Retrieved 11 December 2010 http://www.scribd.com/doc/140200/Chris-Crawford-The-Art-of-Computer-Game-Design

Copier, Marinka. Challenging the Magic Circle: How Online Role-Playing Games are Negotiated by Everyday Life. in van der Boomen, M., Lammes, S., Lehmann, A., Raessens, J., Schafer, M. eds. *Digital Material: Tracing New Media in Everyday Life and Technology*. Amersterdam University Press, Amsterdam, 2009.

Flanagan, Mary. *Critical Play*. Massachusetts Institute of Technology, Cambridge, 2009. Huizinga, Johan. *Homo Ludens: A Study of the Play Element in Culture*. Roy Publishers, London, 1950.

Juul, Jesper. *Half-Real: Video Games between Real Rules and Fictional Worlds.* Massachusetts Institute of Technology, Cambridge, 2005.

Malaby, T. M. "Beyond Play: A New Approach to Games" in Games and Culture, vol. 2, no. 2 (April 2007), 95-113

McGonigal, Jane. Reality is Broken: Why Games Make Us Better and How They Can Change the World. The Penguin Press, New York, 2011.

Monnens, Devin. Tactility and Ambiguity: The Mechanics and Message Behind Train, 07 March 2010. Desert Hat. Retrieved 11 December 2010 http://deserthat.wordpress.com/2010/03/08/tactility-and-ambiguity-the-mechanics-and-message-behind-train/

O'Donnell, Casey. On Train and "The Irish Game". 9 July 2009. Shambling Rambling Babbling. Retrieved 11 December 2010 http://www.caseyodonnell.org/blog/2009/07/29/on-train-and-the-irish-game/

Salen, Katie and Zimmerman, Eric. *Rules of Play: Game Design Fundamentals.* Massachusetts Institute of Technology, Cambridge, 2004.

Samyn, Michael. Comment on Tactility and Ambiguity: The Mechanics and Message behind Train. 08 March 2010. Desert Hat. Retrieved 11 December 2010 http://deserthat.wordpress.com/2010/03/08/tactility-and-ambiguity-the-mechanics-and-message-behind-train/#comment-86

Schreiber, Ian. Train. 12 May 2009. Play this Thing! Retrieved 11 December 2010 http://playthisthing.com/train

Sniderman, Stephen. Unwritten Rules. October 1999. Retrieved Febuary 3, 2011 http://www.gamepuzzles.com/tlog/tlog2.htm

Stein, Abe. Updates: Train of Thought. 15 June 2009. GAMBIT: Singapore-MIT GAMBIT Game Lab. Retrieved 11 December 2010 http://gambit.mit.edu/updates/2009/06/train of thought.php.

Suits, Bernard. *The Grasshopper: Games, Life and Utopia.* Broadview Press, Canada, 2005. [1978]

Wilson, Tracy V. Brenda Brathwaite's "Train": When Knowing the Game Changes the Game. 9 March 2010. How Stuff Works Blogs. Retrieved 11 December 2010 http://blogs.howstuffworks.com/2010/03/09/brenda-brathwaites-train-when-knowing-the-game-changes-the-game/