

The Creative and Reflexive Realms of Gamaturgy

Lori M. Shyba

McMaster University

Department of Communication Studies and Multimedia

lori.shyba@shaw.ca

Abstract

The purpose of this article is to introduce the synergy between theatre, games, and social activism that I have coined “Gamaturgy.” Gamaturgy, in both the creative and reflexive realms as I describe them, is derived from theatrical dramaturgy and provides new ideas for creating and critically analyzing serious video games, especially social issue games. My project is firstly to sketch out the formative dramaturgical influences of Augusto Boal’s Forum Theatre, and then to expand this unique way of play-making into the realm of creative gamaturgy as a means of creating experiential interactions and constructing meanings in the design and creation of serious videogames. As for the aim of finding a new form of thematic analysis for video games, I will use an original case study to demonstrate the method of recovering meanings from games through the implementation of reflexive gamaturgy. In both the creative and reflexive realms of gamaturgy, inspiration is drawn from multi-modal textual expressions of meaning and also from politics, personal philosophy, and moral values.

Author Keywords

creativity; play; reflexivity; intertextuality; metanarrative; game design

Dramaturgy

Dramaturgy, as both a practical and analytical tool, stems from Greek classical antiquity and over the years it has come to mean the presentation of a playwright or director’s vision in a theatrically engaging way. *Dramaturgy in American Theater* states that “Dramaturgy opens the door for an influx of materials into the playmaking process: imagistic, sociological, ideological, critical.” This open-door definition of dramaturgy welcomes the effects of multimodal textuality, hereafter referred to as multitextuality, in both the creative and the reflexive realms of dramaturgy; an essential linkage between theatre and games.

Creative dramaturgy as an act of play-making and creative process drama contains message modalities beyond just literary or verbal text. Aural, physical, visual, and emotional texts promote visceral understandings past the expression of anything that might be uttered as language or written down as words. Albert Mehrabian, a researcher of body language, found that the total effect of a message is about seven percent language, or verbal text; 38 percent vocal, including tone of voice and inflection, also known as aural text; and 55 percent nonverbal, meaning the physical and visual texts (Mehrabian, 1981). For this reason, ritual and creative process drama, as interactive performative engagements, is a kind of discourse in which building understanding through meaning is concerned with much more than language.

Reflexive dramaturgy is an act of critically analysing the kind of world or 'reality' that has been constructed through the creative act of play-making. Games scholar Frans Mäyrä puts this into terms of interactive cultural systems by differentiating ludosis, or meaning-making through playful action (as with creative dramaturgy), from semiosis, or meaning-making as representations – an important factor in reflexive dramaturgy (Mäyrä, 2008). The basis for reflexive analysis as a multitextual investigation considers factors of pretext, context, subtext, and intertext as critical resources.

Augusto Boal

Augusto Boal's eminence and multi-valence as a writer, producer, director, and theorist connects him to both the creative and reflexive realms of dramaturgy. Boal was raised in Rio de Janeiro and attended Columbia University in New York, studying both theatre and chemical engineering. After obtaining his doctorate in chemistry, he returned to Brazil in the early 1950s and began transposing news into theatrical scenes dealing with issues such as literacy and democracy. Boal took these shows on the road to factories and farms and continued to develop plays around the experiences of people silenced by poverty and oppression. By 1971, his plays were increasingly censored by the Brazilian military dictatorship and he was imprisoned and later forced into exile, spending 15 years in Argentina and Europe before returning to Brazil.

Influenced by the pedagogy of Brazilian educator Paulo Freire, Boal espoused a transitive and experiential educative style where:

The teacher is not a person who unloads knowledge ... the teacher is a person who has a particular area of knowledge, transmits it to the pupil and, at the same time receives other knowledge in return. Teaching is transitivity. Democracy. Dialogue.... Interaction, exchange. We are all subjects: pupils and teachers, citizens, and spectators. For it to work, we need the people's participation.

(Boal, 1998, pp. 19-21)

Boal was suspicious of conventional theatre, which he saw as an intransitive relationship where emotions, ideas, and morality travelled from stage to spectator in one direction only (Boal, 1998). Like fellow political dramaturg Bertolt Brecht, Boal rebelled against the neutralizing effects of Aristotelian catharsis. Brecht accepted his audience taking revolutionary ideas home to mull through using critical thinking. Boal, instead, found ways to incite action against oppression by incorporating the audience into decision-making that would affect the outcomes of the play.

Boal championed the idea of reshaping theatre to break down aristocratic domination, and Forum Theatre breaks down barriers between the doers and the watchers – in other words, between the aristocracy and the crowd. To this end he created a dramatic form that did not exclude the people from the stage. Boal's auteurial vision of social justice through game play and interactivity also has an intriguing connection with the use of serious video games as a medium to rehearse reality without exposing players to the risks and dangers they might encounter in real life.

Forum Theatre

In Forum Theatre, as practiced by Augusto Boal and others who have adopted Boal's methods, actors perform a play charged with inherent conflict and anxiety about a pertinent social issue or community oppression. The play has been collaboratively created through the use of games. Once the audience has had a chance to see the situation and assess the problem, the Joker, as a group leader, explains the simple rules of the game and starts the play again. This time any spectator can yell "Stop" at any time when he or she perceives a better course of action for a character to follow. This spectator, who is then referred to as a spect-actor, replaces the character and improvises a scene to try out a different set of consequences. This is what Boal calls a Rehearsal for Reality where:

Spect-actors are invited to come on stage and reveal by means of theatre – rather than just using words – the thoughts, desires, and strategies that can suggest, to the group to which they belong, a palette of possible alternatives of their own invention. This theatre should be a rehearsal for action in real life, rather than an end in itself.

(Boal, 2006, p. 6)

Forum Theatre harnesses the power of games, both in the creative process and in the performance of the play scenario itself. In the creative process, games played by the actors build tactile sensitivity, tune them into a passion of listening, feeling, and seeing, and inspire image tableaux that build story scenarios. This work also builds dialogue and relationships between actors, and inspires trust that becomes a powerful mechanism to bring truthfulness to Forum Theatre dialogue.

In performance, Forum Theatre is also a game, immersing spectators into the narrative action of the play and compelling them to try out their own ideas about how to improve things on stage. These change-making interactions are called "interventions", and pivotal as a facilitator in this process is the group-leader character known as the Joker who is "a clown, a jester, an animator, a trickster, an improviser, a psychologist, and a dramaturg" (Foreman, 2005). In performance mode interventions are key, and Forum Theatre plays present problems that incite people into expressing their own solutions. It is clear to see that the Joker has a role as creative dramaturg in the process mode, where warm-up and image games are facilitated. Intriguingly, though, because of the immersive nature of the audience participation, the Joker's role as dramaturg extends into the performance mode as well. Drawing from a long legacy of jesters and tricksters, the Joker goes beyond just fun and games, moving back and forth between liminal frivolity and liminoid subversion to a place where intervening spect-actors are free to challenge the status quo anytime throughout the course of a performance.

When spect-actors yell "Stop" to interrupt the narrative action, to replace a character whom they see as being oppressed or being made to think or feel or do something they're not comfortable with, the Joker asks them to declare who they wish to replace and to what point they wish to back up the action. They then improvise the scene in a game-like fashion until they see the effects of their decisions. The action that the spect-actor takes is no longer a passive and voyeuristic theatrical experience, but one of immersion into the narrative that could eventually transfer into real-life solutions.

Once the scene is played out in this unique extension of sensual dramaturgy, the Joker asks the spect-actor questions that rationalize their emotions: “What did you try? How did it make you feel? Did this character make things better, and why? Did anything change? What was the payoff?” The other characters in the scenario are also asked about the effects the intervention had upon their character, and what they learned. The audience is sometimes asked if anyone has anything else they’d like to try out, as a possible way to make things better in this situation of conflict. If there are no other ideas to play out, the narrative action continues.

In live game play, the Forum Theatre Joker has many roles: firstly, enabling the creative process games that build sensory awareness and imagination among the actors; secondly, facilitating the performance games of rehearsing new realities; and thirdly, leading discussion that rationalizes the emotion. Incidentally, these tasks closely mirror the Dungeon Master character in the early role-playing game *Dungeons and Dragons*. In a typical play session, a Dungeon Master might describe a fantasy world to the players and then, similar to a Joker, enable the player to take on a role and be lead through an imagination exercise in scenario visualization. Just as Boal’s Forum Theatre combines interactivity, activism, and storytelling, at the core of *Dungeons and Dragons* is, as Mäyrä describes it, “a hybrid form of leisure that combines features from strategy games and interactive storytelling” (Mäyrä, 2008, p. 78).

In analytical mode as a reflexive dramaturg looking back at his own creative work, Augusto Boal implements rules of thematic analysis where conflict is scrutinized through the central idea or theme of the play as a clash between a protagonist and his or her oppressors (Boal, 1998, p. 63). As dramaturgical summation of pretext and context, Boal reflects upon significant socio-political events such as regional illiteracy, and how these events relate to history, such as oppressive regimes and the consequential social struggle. Pretextual and contextual reflections are well-documented in his many books, including *Theatre of the Oppressed* and the *Aesthetics of the Oppressed*. As a dramaturgical summation of intertext, he reflects on his own personal involvement and situated self and, when analyzing the subtext, he looks at the effects of metaphor and allegory.

Dramaturgy nurtures the Forum Theatre plays and games like a fertile womb, enriching the birth of the idea, breathing it open into sensory realms of creative process and interactive performance, kicking it into political action, and finally engaging a reflexivity to lay down philosophical wisdom and maturity. Without the ubiquitous mix of creative and reflexive dramaturgy employed by Augusto Boal and those who follow the basis of his teachings, the plays and games of Forum Theatre would not and could not reach beyond the sacred sphere of liminal play into the working world of liminoid phenomena and social reform. In other words, the Joker is the catalyst who ignites the patterns of possibilities between liminoid play, games, theatre, and politics. However, instead of simply reinforcing conformity, as is the tendency of ritualistic liminality, the Joker is an agent of change and subversion, provoking the audience to act like a collective learning machine that is set to spawn variety and generate diversity in society.

Creative Gamaturgy

As described, dramaturgy is a way to open the door for an influx of sensory discoveries into the playmaking process. ‘Gamaturgy’, by implication, is a way to infuse sensory discoveries into the game-making process as a creative tool for game designers. Ways that creative gamaturgy can be implemented include sparking up creative teams through improvisation, mapping and modeling of characters and relationships, and ways that visual, physical, and aural texts can work together to assist in the creation of emotionally rich games with moral visions of social justice.

Both theatre and video games are temporal and transitive – temporal in that they unfold as an experience over time, and transitive in that they provoke an action dialogue of interaction and exchange. Categorizing both of these kinds of entertainments as art forms is therefore not a stretch, especially if one narrows the video games under discussion to those of the social issue genre, and the theatre under discussion to interactive activist theatre, notably Forum Theatre. As tools that allow one to see the world from a different perspective by being able to play another “side” of the story, they are both ways of tuning us in to what’s going on around us and ways of bringing meaning to ourselves and to others (Nachmanovich, 1990; Zaporah, 1995).

Sparking up Creative Teams through Improvisation

Reading about spontaneity won’t make you more spontaneous, but it may at least stop you heading off in the opposite direction.

— Keith Johnstone, *Impro: Improvisation and the Theatre*, 1981

“Be spontaneous, use your imagination and get up on your feet and play!” In one form or another, this is the mantra and rebel yell of improvisational musician Stephen Nachmanovich, Action Theatre innovator Ruth Zaporah, Theatresports founder Keith Johnstone, and Augusto Boal, whose activist Forum Theatre features ‘rehearsals’ for real situations. Each of these practitioners also feels that being true to spontaneous insights is a way of keeping the editor of self-censorship out of the process of creation.

Stephen Nachmanovich passionately believes that art comes from inner sources of spontaneous creation. He claims, “What we have to express is already with us, is us, so the work of creativity is not a matter of making the material come, but of unblocking the obstacles of its natural flow ” (Nachmanovich, 1990, p. 10). He asserts that by inventing a channel of flow from one’s heart directly into reality, one is allowed to “experiment without fear of consequences, to have a play space safe from fear of criticism, so that we can bring out our unconscious material without censoring it first” (Nachmanovich, 1990, p. 69). Ruth Zaporah’s Action Theater puts Nachmanovich’s theory to work, offering games and exercises to work through what Zaporah calls “the body-heart-head thing” that links the three in a body-based flow through time and space, opening up expression and a sense of play (Zaporah, 1995, p. 24). Her group games aim to move the participant player effortlessly from thought to feeling to imagination to remembering, rather than “worry, think, conjure ... what we’re going to do, say, or be next” (Zaporah, 1995, p. 24). Recognizing situations and patterns as they arise through relaxation of imagination leads to transformation of the form and content of an action into a resolve, or a ‘meaning’ for oneself and, eventually, others. Keith Johnstone concurs with this sense of spontaneous creation and relates that when people are asked to give an original idea, they are thrown into chaos. He states

that, “If they said the first thing that came into their head, there’d be no problem,” and that, in the context of imagination and spontaneity, striving too hard after originality “makes your work mediocre” (Johnstone, 1981, p. 88).

These masters of improvisation offer ways to uncover new methods of involving interactivity in digital game design and, at the same time, recognize that one role of spontaneity is to keep the internalized editor at bay.

Visual Text and Initiating Narrative

Constructing a narrative is an essential part of both theatre and video games, and it is required on several levels throughout the process of concept creation. Narrative on the level of personal values is about our emotions and moral stance on issues that are important to us and, on a level of storytelling, imbues the temporality of the artistic experience with the structural plot points towards the formation of dramatic action. Forum Theatre image games that culminate in a display of visual tableaux can release creative gamaturgy in aid of both of these levels of narrative – on the level of personal values and as a vehicle for releasing ideas into a story plot escalation.

In a typical Forum Theatre rehearsal period, a way of firing up personal value positions on social or political issues that are being explored is to play Boal’s ‘Complete the Image’ game that culminate in a series of visual tableaux. As a dramaturgical tool, this game, especially when it is combined with games of emotional recall, provides a passion and intensity of inner feelings that enable a better understanding of character motivation and also enable an emotional connection to social issues being challenged. When these tableaux get ‘tweened’, or animated over time through improvisation and imagination, a powerful connection between image games and story narrative comes to the fore.

Physical Text

Transforming an image text into a physical text is crucial to creating a temporal experience; when art moves over time, dramatic changes occur by virtue of becoming a simulation of a lived experience. Finding cohesion between a series of static visual art images is an act of perception and cognition that enraptures the mind into recognizing an event as a performance or a ‘play’.

My proposition in relation to visual text has been that creative gamaturgy involves live actors playing games and stopping a moment in time to capture a readable tableau that represent a plot-point of conflict. This may not always be possible and, in the absence of live actors, ‘improvisation with self’ is a viable alternative where imagination takes over. Whether working with live actors or just with imagined visual tableaux, the frozen moments in time are significant in the patching together of a non-linear narrative where one thinks of the visual images as branching opportunities in a multi-directional dramatic story action.



Figure 1: Levels One and Two of *The Pipeline Pinball Energy Thrill Ride Game*.

The tweening or animation of the games' visual text (or stop-action design) into physical text (or play mode) promotes the hitting of key dramatic action benchmarks as defined by Robert McKee's "Principles of Story" (McKee, 1997). As a way of introducing an example that will carry over into the explanation of reflexive gamaturgy, a serious social issue game I developed called *The Pipeline Pinball Energy Thrill Ride Game* was, according to my definition, "A Little Theatre in a Game." This video pinball game, pictured in *Figure 1*, pits fossil fuel points against alternative energy points and shows the correlation between global oil demand and greenhouse gas emission. The thematic message of the narrative is that we can't afford to ignore alternative energy development while we exploit existing world oil resources to their inevitable depletion. As paraphrased from the *Pipeline Pinball* game design document:

The inciting incident takes place when the heroic energy ball opens the green pipelines in order to open the Alternative Energy Targets. This leads to progressive plot complications and escalating action. The MacKenzie Valley Pipeline opens and up pop clients from the global markets. Knocking down the global clients ramps up the story action to a penultimate moment. Playing nuclear targets clumsily can cause the whole game to explode. The crisis decision of whether or not to annihilate the Spies in the Oilpatch leads to the *climax* where the birds flap and caribou spin. Resolution? Some players may choose to score fossil fuel points and others may choose alternatives.

(Shyba, 2006)

Because *Pipeline Pinball* is a video game, the non-linear narrative can be branched off into many directions, dependent upon the skill of the player and the player's aspiration to collect fossil fuel points or alternative energy points. At the very least, and true to the form of Forum Theatre, the

narrative progresses to a point of crisis or climax and then the resolution is entirely left up to the audience to activate in their own way.

Serious video games, much like Forum Theatre, are well-suited to activate social change by virtue of player agency and the interactivity of non-linear story narrative. As an example, players in *Pipeline Pinball* or other serious games players can implement a “Stop” action at any time when they think they see a better course of action for a character to follow. The player can then follow a different path of action, thereby improvising a scene to try out a different set of consequences. This is reminiscent of Boal’s Forum Theatre, where rehearsals for action take place in the game rather than as negative consequences in real life.

Aural Text

When it comes to aural text within videogames, Forum Theatre games and performance practice can contribute a significant gamaturgy. “The Machine of Rhythms” and “The Song of the Mermaid” are two games from within the canon of Forum Theatre that have latent potential to produce passionate and emotive sound effects and sound ambiance environments for video games. Video game designers who pay attention to the visceral connections between aural text and emotion will see the advantage of using these techniques to enhance elements of game play, understandings, and meanings.

As an example, “The Machine of Rhythms” game is part of Augusto Boal’s series called “Listening to What We Hear.” In this game, an individual participant vocalizes a sound and simulates a movement as a part within a complex machine. Everybody else watches and listens, and eventually all participants become integrated into this synchronized machine. They can use movements and sounds but no words. A possible variation that provokes interesting textural changes in aural landscapes is when the Joker group leader shifts the machine from being, for example, a ‘love’ machine to being a ‘hate’ machine. These shifts in sound and emotion have profound visceral effects and are not sensations to ignore if one is trying to create video games that have a consciousness that is different than ordinary existence.

Emotional Text

Emotional text is a byproduct from the synergy of the feelings that transcend from other sensual texts. As Augusto Boal puts it, “The important thing about emotion is what it signifies ... and this is what marks the difference between what we term ‘dramatic action’ and mere physical activity” (Boal, 1992, p. 37). Put another way, and in the context of social impact video games, emotional text marks the difference between what we call ‘play’ and the meaning that emerges as we move beyond just the fun and games. Emotional text is what enables activist art to ‘tune us in’ to the world around us, whether in the form of interactive theatre or video games.

Mapping and Modelling Characters and Relationships

Stanislavski-inspired acting teacher Uta Hagen holds a key to mapping and modeling characters for use in digital games and interactive stories. Hagen strongly believed that stage actors should identify with the characters they play using feelings and circumstances from their own lives. By

“playing in the moment”, the actor can suspend all knowledge of what is to come, and hence be rendered vulnerable and open to surprises (Hagen, 1991, p. 134). This concept is akin to the way story narrative should unfold in digital play spaces, where webs of possibilities, rather than pre-determined plotlines, exist.

In her book *Challenge for the Actor*, Hagen mapped out essential steps of character analysis. Here are a selection of these points that I feel carry over well into the domain of the game designer when it comes to creation of character back story:

- Who am I? What is my present state of being? How do I perceive myself? What am I wearing?
- What are the circumstances? What time is it (year, season, day)? Where am I (city, neighbourhood, building, and room)? What surrounds me (immediate landscape, the weather, the objects around)? What are the immediate circumstances (what has just happened, what do I expect will happen later on)?
- What are my relationships (to circumstances, place, object and other people)?
- What do I want (overall and immediate needs and objectives)?
- What is my obstacle (what’s in my way and how can I overcome)?
- What do I do to get what I want? How do I achieve my objective? What’s my behaviour? What are my actions?

Hagen’s ‘internal’ principles of character analysis clarify the practice of embodying an emotional memory of the character and letting that image be reflected out in the body. Thinking about character attributes from the ‘inside out’ promises to result in a useful cross-over effect into the digital character realm.

Incidentally, there is also an “external” technique, in the spirit of *Commedia dell’arte*, in which masks are used to physically manipulate an imaginative response in the body (Foreman, 2003). Mask work is similar, in my mind, to the technique that video game artists currently use when creating and modeling a character’s external attributes in the computer, rendering the character from the ‘outside in’ – sculpting a face or body in a 3-D rendering software program. This is a valid creative approach in both theatre and in digital game character development, but is not, by my way of thinking, complete enough to deliver a fully-fleshed character who needs a back story in order to be believable.

Moving to the issue of modeling character relationships, we see Chris Crawford’s “verb-thinking” principles bear a striking resemblance to the theatrical principles of setting action objectives within ‘beats’ in a conventional narrative dramatic scene. In Crawford’s case, he uses arithmetic operatives to humanize personalities who are building interpersonal relationships (Crawford, 2005, p. 190). Relationship-building through mathematics is an interesting approach for character creation in the digital realm, and one that theatre artists might even try for fun. For example, “Inclination [Retort] = 5 x Anger[Actor] x Affection[Actor, Insulter] – 2” describes that an actor responds to an insult on the basis of the factors of five times the affection the actor feels for the insulter, and half of the anger the actor feels as a result of the insult. Improvisational relationship-building status games such as Keith Johnstone’s “status towers” is a way to supplement this formula (Johnstone, 1981, p. 70). In this exercise, actors are

assembled into pecking orders. Someone begins with a low-status activity, and each person who enters the scene plays a step higher, or vice versa. Studying the result of these scenes may be useful in humanizing digital game personalities by deriving relational arithmetic operates, such as Crawford's. However, another use might be to subjectively absorb implicit knowledge about the characters' relationships directly by observing the status tower scenes or, better still, by participating in them.

A further example of the rapport between theatre and digital games is the improvisational motto of "receiving, releasing, and returning without thinking" (Foreman, 2005). This both heralds and imbues the value of foregoing the sacredness of 'the proper answer', and has a direct connection to Crawford's definition of interactivity as a cyclic process in which each agent, meaning character, alternately "listens, thinks, and responds" (Crawford, 2005, p. 203). These adages release the idea that the worlds of digital games and non-digital games have similarities when undergoing the process of creation.

Reflexive Gamaturgy

Just as creative gamaturgy opens the door to sensory discoveries, providing video game designers with new functional models for game creation, reflexive gamaturgy, as a function of critical thinking, can provide novel ways of interpreting and uncovering thematic meanings in video games. This transpires through the implementation of another set of multitexts: the critical resources of pretext, context, subtext, and intertext.

It's not to say that reflexive gamaturgy as a multitextual exploration cannot be applied in a creative process, but here I specifically outline techniques of constructing meaning in a game studies context by opening the door for an influx of critical, historical, philosophical, pedagogical, and ideological materials into the theoretic process. It is incumbent upon us as games scholars to differentiate between structural gameplay analyses, which respond to the creative process of game design and therefore to the core game play, and thematic analyses of games, which speak to a game's cultural character (Mäyrä, 2008, p. 165). As a reflexive gamaturg and through thematic analysis, we can apply our knowledge and abilities to the reconstruction of video games into the domains of culture, philosophy, and activism. My project here is to implement reflexive gamaturgy as a multitextual conceptual tool to thematically analyze *The Pipeline Pinball Energy Thrillride Game*, seen in *Figure 1*; illuminating ways that firstly frame video games as an exercise in problem solving, and secondly extract a pertinent philosophy and a new mandate for living.

Reflexivity

According to interpretive inquiry methodology, reflexivity is a process of finding out about the world. Reflexivity also uncovers the way meanings are discursively constructed or, in other words, passed over a wide range of disciplines. It also foregrounds autobiographical lived experience within a flow of reason and philosophy, and is significant on an epistemic or knowledge-building level because it has the potential to switch focus from the individual to the communities within which the research and practice is located. To clarify reflexive multitextuality, here is a brief description of its component texts:

Pretext: Rather than referring to subterfuge or evasion, as it is commonly defined, I am looking at pretext as an exploration of the way history and past events function as an inspiration for a video game's theme or topic.

Context: As I describe it, context integrates this historical pretext with personal moral perspectives and values, and also links in with current affairs and the global situation.

Subtext: Subtext is the political, economic, or environmental reality of what lies beneath the metaphors and allegories of a social issue game or other activist works of art.

Intertext: Intertext is a text intersecting and resonating with other texts.

Exploring a work intertextually is a powerful resource for combining autobiography with philosophy as way of recovering meanings and building understanding. It is also a powerful way of connecting history, current affairs, and social issue realities with community and the future; in other words, amalgamating the other texts into meta-cognitive ideological awareness.

Pretext and The Rallying Cry

In *A Thousand Barrels a Second: The Coming Oil Break Point and the Challenges Facing an Energy Dependent World*, economist Peter Tertzakian points to fundamental historical precedents that have created entrenched pathways for world energy needs and the difficult-to-displace standards that limit the options available to us today. He traces the cyclical periods that we have endured throughout history, and cites the decline of the whale oil industry as a foreshadowing of what we might expect in our new reality of crude oil dependency. Tertzakian frames this phenomenon as an energy evolution cycle that provokes a “break point”, or a collection of events that leads to a realization that “the fuel we are relying on is disadvantaged, not just in a cyclical or seasonal sense but permanently” (Tertzakian, 2006, p. 146). Considering that the eventual resolution of any energy cycle is a rebalancing of forces, patterns emerge between our evolving energy needs, volatile tensions, and pressure in supply chains and factors that may ultimately provide incentives for innovation and change.

In terms of evolution and human behaviour, Howard Bloom sees these cyclical patterns of demand, supply, and eventual rebalancing mirrored in a process of memetic evolution and complex adaptive systems. He states that there are at least three major stages: diversity generation, conformity enforcement, and resource shifting. One might accept Terra's objectives in *Spies in the Oilsands*, for example, as an extreme example of significant diversity generation, Tarzana's objective as massive conformity enforcement and the pinball game as a simulation of long-overdue resource shifting. Len Bruton points out, following Bloom, that value-, social-, and cultural- memes can be very deeply held, sometimes for good reasons, and that these types of memes do not mutate easily. He says, “Clearly, conformity enforcement often involves conflicts of interest among the powerful and massive efforts to enforce conformity for that reason” (Bruton, 2004).



Figure 2: The “Rallying Cry” from *The Pipeline Pinball Energy Thrill Ride Game*, depicted in screens from the design video.

As Tertzakian asserts, when a break point is reached in an energy cycle, and we realize the fuel we are relying on is permanently disadvantaged, as happened in the 19th century with whale oil and significantly but less dramatically in the 1970s energy crisis, we reach a realization that we have to make a significant change. Tertzakian calls this realization the “Rallying Cry.” To my mind, this analysis parallels Bloom’s description of resource shifters completing the “vertical leap”, or synergy of problem-solving caused by the conflict between diversity generators and the conformity enforcers in a collective learning machine (Tertzakian, 2006, p 146; Bloom, 2000, p. 47).

The Pipeline Pinball Energy Thrill Ride Game contains a rallying cry of this sort, exemplified by the games voiceover sound effects (seen in *Figure 2*) as conceptual screens from the design video. The pretext of *Pipeline Pinball* was a grade-school social studies paper about the tar sands that I wrote back when the price of oil was \$2.79 a barrel. Etched in my memory is the time when my interview subject, Dr. William Gallup, scooped some partially refined bitumen from a bucket under his desk and lit it on fire in the palm of his hand. Since then, I have seen Calgary grow in population almost ten-fold, have sold a house back to the bank in the 1980s for a dollar when energy prices plummeted, and have watched curiously from the window of my downtown office when the PanCanadian Petroleum signage changed to PanCanadian Energy. I am still puzzling over whether Gwyn Morgan, former President and CEO of PanCanadian (now Encana), sensed the coming breaking point when he praised *A Thousand Barrels a Second*. His dust-jacket testimonial reads: “Peter Tertzakian’s analysis of world oil is a fascinating reminder that history often foretells the major turning points of the future”. Do so-called ‘energy’ companies have a rallying cry written into future projections that will generate diversity toward a painless rebalancing of energy supplies? Or will the new world price of more than \$140 a barrel, teamed with shareholder pressure for profits at all costs, constitute a missed opportunity?

Context and the Scoring System

To bring *Pipeline Pinball* into context with the contemporary world, the world price of oil is seen to have significant effect on the game’s various stages. As mentioned previously, in the early 1970s when further and faster in our bigger, better gas guzzlers was *de rigueur*, the price of crude oil was \$2.70 per barrel, equivalent to about \$15 in 2008 with inflation. Oil prices waxed and waned between 1970 and 2004 due to wars, revolutions, embargoes, price controls, and OPEC quotas.

In 2004, when *Pipeline Pinball* was in its formative stages, world price per barrel of oil was climbing towards \$40 a barrel, a benchmark in terms of viability of extraction of the Alberta oil sands. At the time, the gamaturgical conflict and social issues had to do with a paradox of economic risk, with questions emerging: Would the future price of oil remain high enough for oil sands development to remain profitable? What if alternative fuel development brings the price below \$20 or \$30 per barrel? However, by 2007, when the game was ready to be released in beta version, the world price of oil had more than doubled. These questions were moot because it was starting to be seen more as a game of chance with the environment than one of economic variables.

The scoring system of *Pipeline Pinball* abstracts the dynamics of economic and environmental risk and contextualizes it into the language of art and play. Given that both art and play are ways of tuning in the world around us and ways to bring meaning to ourselves and others how do the scoring systems distill and abstract meanings that bring about a clearer understanding of our world's energy resources?



Figure 3: The Level One game table and the interdependent scoring system of fossil fuel points versus alternative fuel points.

Level One's dual and interdependent systems of fossil fuels versus alternative fuels gives players a chance to target either system, giving them the choice to take a moral stand about who's side they are on right from the onset of the game. However, accidents and mistakes happen. We might not play well enough to get the energy ball into the pipeline chutes to activate the alternative fuel targets. Do we give up on alternatives because gaining fossil fuels points is just so much easier? Or do we work at improving our skills?



Figure 4: The Level Two gametable and the relational scoring system of world demand that automatically and inextricably tallies up carbon emission points.

Ironically, Level Two poses a more complex dilemma where the scoring system of global demand and carbon dioxide emissions are relationally and inextricably linked; as world demand increases, so does, by implication, global warming. No matter how skillfully one plays, rolling the energy ball around easily activates world flag pop-up targets, satisfying the petroleum demands of major oil consuming countries. In a ritual of irresponsible behaviour, toxins are emitted into the environment as a non-variable cost of doing business.

In *Chris Crawford on Interactive Storytelling*, Crawford comments that scoring systems in games and sports “have always been constrained by the computational weaknesses of the people doing the scoring”, and reminds us that well-designed scoring systems should provide strong motivations for players to behave in a manner consistent with their aesthetic goals (Crawford, 2005, p. 212). I challenge this stance and believe that as artistic abstractions meant to construct meanings, serious social issue games should accommodate experimentation to try out the other ‘side’ of the story. As with the Forum Theatre of Augusto Boal, taking this approach gives one a chance to jump in and become immersed in a narrative action that could eventually transfer into real-life solutions.

Subtext, Metaphor, and Humour

Subtext, as I have described it for the purpose of reflexive gamatugy, is the political, economic, or environmental reality of what lies beneath the metaphors and allegories of a social issue game or other activist work of art. *Pipeline Pinball* combines Augusto Boal’s ideas of metaphor as a symbolic language with semiotic cultural frameworks that enable the unraveling of meaning, the result being what Dietrich Dörner (1996) might observe as a case of computer technology allowing us to simulate complex situations that might help us develop a greater sensitivity to reality. Cultural codes of electronic media are ways to observe signs of reality as they are encoded electronically into representations, and then organized and projected into ideological codes such as those of individualism, class, patriarchy, race, materialism, capitalism, and so on. These ideological codes assist in producing coherent sets of meanings that bring about common sense in society.



Figure 5: Level One icons as metaphorical representation. Drawings by Rich Theroux.

As this relates to Level One of *Pipeline Pinball*, the nuclear icon on the bumper in *Figure 5a* signifies the reality of both a cost-effective way to heat the water to extract oil out of the bitumen in the oil sands, and of a viable alternative energy fuel. Through an electronic encoding, it represents a means to score both alternative energy points and fossil fuel points; it is one of only two scoring devices to have dual status. In *Figure 5b*, the Alberta Wild Rose bumper, a symbolic flower of Alberta, likewise allows for alternative points and fossil fuel points, representing the duality of popular opinion about which direction to follow on the issue. In *Figure 5c*, the pipeline action shot is represented along with an icon of a caribou, one of the animal species threatened by oil sands and pipeline development in the north. The combination of these icons forms a directive for positive action since there is a significantly innate bias towards the accumulation of alternative energy points. The final icon (*Figure 5d*) represents the reality of the question on many Albertans' minds: 'We're rich, now what?' The reality of the situation is that the oil sands could turn Alberta into another Saudi Arabia or Kuwait, with oil riches beyond compare. This question moves us into an ideological conundrum. As a foreshadowing of the intertextual concern of this study, the question is: 'Is there a way to reap rewards and still work toward global wellbeing?'



Figure 6: Level Two icons as metaphorical representation.

As metaphor and representation relates to Level Two of *Pipeline Pinball* (*Figure 6a*) strategically, the nuclear bumpers re-appear, only this time in juxtaposition with the graphic representation of the toxic tailings ponds. The reality is that if nuclear energy was used as an alternative to fossil fuels, the tailings ponds and the multitudes of associated environmental horrors would cease to grow, but if used as a cost-effective way to heat water to extract oil out of the bitumen in lieu of using natural gas, the tailings ponds would not be affected. The bumpers in *Figures 6b* and *6c* indicate the escalating world demand points and associated carbon emissions

associated with North American stock exchanges. In the final graphic (*Figure 6d*), OPEC, the Organization of Petroleum Exporting Countries, is shown to be a powerful factor in the reality of world energy consumption and distribution. This graphic is another foreshadowing of the intertextual concern of this study, in which the operative question is: ‘How do world oil prices, as interconnected with other elements of the game, compound social problems?’

An important concept of *Pipeline Pinball* is the power of humour as a tool of subversion. This helps bring meaning to *Pipeline Pinball* through the allegorical treatment of one subject under the guise of another. Consider, for example, the Level One voiceover that subverts social norms with assertive advice for the player to “generate energy diversity,” or the absurdity of the overall game play in which non-strategic play brings faster rewards, albeit in fossil fuels, than playing strategically does. As the artist behind this work and a Joker in the sense of being the creative gamaturg, I imbued innate values and chose my ‘camp’. The directive to generate energy diversity was an abstraction of my views that we need to spawn variety in the energy landscape, and the irony of the game play scoring strategy is that, in order to shift resources or implement change, we have to be willing to commit to the task, exercise intelligence and tact, and see the ‘big picture’. Overall, the lack of diversity and the status quo mindset of massive conformity enforcement drive up fossil fuel points but, as Tertzakian puts it: “As the pressure builds, we will soon wake up to the realization that the age of cheap, clean, easy-to obtain energy is rapidly coming to an end” (Tertzakian, 2006, p. *xii*).

Activist art holds power to tune us into the world around us by spinning reality around into a metaphorical representation and then challenging us to bring meaning back through our own interpretation. Herein lies the secret at the finale of experiences such as *Pipeline Pinball* and other activist entertainments in which engagement in the construction and recovery of meaning is an active process, bubbling out foundational life skills and ideological values by flipping back the layers of irony.

Intertext and Re-Evaluating The Good Life

If facts are the seeds that later produce knowledge and wisdom,
then the emotions and the impressions of the senses
are the fertile soil in which the seeds must grow.
— Rachel Carson, *Silent Spring*, 1962

Exploring this work intertextually through the interlacings and resonances with other texts has been a powerful resource for combining autobiography with philosophy in order to recover meanings and build understanding. It has also been a powerful way to connect history, current affairs, and social issue realities with community and with the future. Whether it is called an ideology, a philosophy, a metanarrative, or a mandate for the future, the rallying cry that emanates from the *Pipeline Pinball* game brings into question our values associated with The Good Life. The energy of this exploration continues now through a final frolic of imagination, emotion, and impression of the senses so that we can gain an understanding of the fertile soil in which the seeds must grow, as Rachel Carson offers in the epigraph above. Profoundly, this experience with *Pipeline Pinball* was the beginning of my personal re-examination of The Good Life in terms of my obligation to the environment and ways I might be activated to help bring safety and security to our world. These values are reflected in the environmental ethics of Rachel

Carson, Al Gore, and David Suzuki. Earlier, these values were espoused by Aldo Leopold, who pictured humans as belonging to, rather than owning the biotic community, and Arne Naess, who advocated forms of identification with the non-human world and ecofeminism (*Audi*, p. 268).

Through the course of this multitextual and reflexive gramaturgical investigation, I became personally convinced that an environmental philosophy articulating a concern and privileging beliefs about the value of the natural world is critical as a guide to restructuring our ideals about The Good Life and what it is to be 'prosperous'. Why might this new way of living prevail? Because we embrace lofty ideals in environmental ethics? In part, perhaps, but not entirely. Rather, I feel that this solution is the magic bullet because a scoring system based on oil prices dynamically reducing energy consumption parallels the reality currently hitting our global community, as 2008 oil prices are surpassing \$140 US a barrel. The other part of the solution is a more holistic understanding of collective value systems and of the role of human life among all life systems. The arts, including interactive media and games, have an important role in achieving that understanding because arts practice can take technology and science into contexts that might not otherwise be visited.

Final Thoughts

As a theoretical study, informed by artistic practice, my aim has been to introduce gamaturgy as a synthesis between theatre, games, and social activism that provides new ideas for creating and critically analyzing serious video games. I have used myself as a barometer of effects of this research, not as an exercise in solipsism, but rather because my autobiographical lived experience is significant on an epistemic level, representing the larger community in which we live.

I have discovered that creative gamaturgy, from drama and especially Forum Theatre, is a way of creating experiential interactions and constructing meanings in the design and creation of video games. As for the aim of finding a new form of thematic analysis for social issue games, I found reflexive gamaturgy is an effective way of recovering meanings from games as a multitextual analysis. I have also found that social issue games, like other activist art including interactive Forum Theatre, can tune us in to the world around us and activate social change by enabling us to rehearse reality without being exposed to the risks and dangers we might encounter in real life.

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