

The Anti-Poetic: Interactivity, Immersion, and Other Semiotic Functions of Digital Play

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ABSTRACT

The essay examines some of the assumptions of early formalist theory and practice – particularly as regards the widely applied formalist concept of “defamiliarization” (*ostranenie*) – in order to extend the semiotic analysis of interactive media found in Myers (*The Nature of Computer Games*, 2003). That analysis describes new media interactivity as displaying semiotic functions formally similar (but often in functional opposition) to defamiliarization.

The essay argues that, using a cognitive framework, formalist principles and assumptions can be comfortably extended to describe the aesthetic experiences associated with the use of computer-based media (most particularly computer games) – and, further, that the *literariness* of poetic language is formally similar and in opposition to the *interactivity* of digital media.

Keywords

Aesthetics; close reading; computer games; digital media; formalism; interactivity; immersion; poetics; semiotics.

1. INTRODUCTION

This essay discusses the importance of early formalist literary analysis to current analysis and understanding of interactive, computer-based media forms. I am particularly concerned here with an understanding of computer games as aesthetic forms or, as I would like to argue hereafter, as “anti-poetic” forms.

First, a brief summary of early formalism.

2. EARLY FORMALISM

2.1 Important Figures

Historically, the formalist movement is most often associated with two separate bodies of work: that originating within a relatively radical group of Russian critics during the early 20th century – well described in Erlich’s *Russian Formalism* [3] – and the publications of the so-called “New Critics,” a cadre of (primarily) poetry critics working in United States academia during the 1920s.

Wellek [14] assigns Viktor Sjklovsky (*On the Theory of Prose*, 1925), Boris Eikhenbaum (*Melody of the Russian Lyrical Verse*, 1921), Yuri Tynyanov (*Archaisms and Innovators*, 1925), and Boris Tomashevsky (*Russian Versification: Metrics*, 1923) leadership in the Russian formalist movement. Sjklovsky’s early essays make the explicit claim that “the literary work is nothing but form” and that all art is, in fact, “outside emotion” (as cited in Wellek [14]). While Sjklovsky’s views may have been extreme among his fellows, the desire to isolate and analyze literature as a formal derivative of natural language was characteristic of the formalist approach on both continents.

Prominent within the American formalist movement were John Crow Ransom (*The New Criticism*, 1941), Cleanth Brooks (*The Well Wrought Urn*, 1947), and William K. Wimsatt, the author (along with Monroe Beardsley) of the “affective” and “intentional” fallacies (*The Verbal Icon*, 1954). Like their Russian predecessors, American formalists eschewed literary analysis based on either intent of author (the intentional fallacy) or individual and private effect on reader (the affective fallacy). And, despite great differences in cultural backgrounds and political ideologies between the Russians and the Americans, these two early 20th century groups have come to be linked in their common goal of studying scientifically, measuring empirically, and defining objectively the formal properties of “literariness” (*literaturnost*).

2.2 Formalist Methods

America’s New Critics introduced the methodology now most closely associated with formalism and still the single most sustaining contribution of formalism to literary analysis: the “close reading” of texts. Close reading consciously avoids all interpretations referring to and depending on elements extrinsic to the text. During a close reading, formalist critics attempt to isolate objective components of texts – e. g., rhythm, meter, and imagery in poetry – that are most characteristic of and fundamental to literary form.

As practiced by the New Critics, this analytical technique is similar to earlier, linguistics-inspired analyses conducted by the Russian formalists. Each is an attempt to introduce scientific methods to the study of literature and, by extension, culture. And, while each was successful in identifying and cataloging meaningful components of human language (see, for instance, Jakobson [6] – about which more later), each also suffers in its inability to move from the analysis of specific components of texts to an explication of more general principles of literature.

In its most isolated and restricted use, engaged solely in the effort to locate literariness, formalist methodology raises uneasy questions concerning the relative importance of (and

thus the precise formal relationships between) literary *form* and *content* – or, later, concerning the relative importance of *structure* and *materials*. Close reading begs the question of how much knowledge of context and use of language is required prior to formal analysis. And, indeed, the implicit requirement that formalist critics possess some relatively advanced expertise prior to the application of formalist methods undermines the objectivity of those methods. It is for this reason that New Criticism, in particular, is often regarded – and criticized – as an elitist approach.

Revisionist formalist methods adopted to acknowledge and include the influence of context are of two basic sorts. The first applies entirely different methodology to the measurement of context – critical methods – which subsume the professed scientific objectivity of formalism within social conflict (and, for the Russian formalists, Marxist) paradigms and, subsequently, within increasingly less formal and more *structural* models.

The second retains the objective premise of formalist techniques and applies those techniques to both individual components of texts *and* to the relationships among them. These relationships are then taken as indicative of contextual *systems*. Erlich [3] makes much of the methodological evolution of formal analysis to systems analysis, which served as a precursor to the development of *semiotics*.

During the ‘heroic’ period of Russian formalism, the science of signs was virtually non-existent. ...But by 1930, ... this new discipline was well under way. The theory of language was being fitted into the larger framework of a philosophy of symbolic forms which considered language as the central, but not the only possible system of symbols. (pp. 158-9)

2.3 Formalist Assumptions

“Poetry is language in its aesthetic function.”
Roman Jakobson, *Modern Russian Poetry*, 1921.

Historically, formalism originated in ideological opposition to existing theories of literature (e. g., symbolism and impressionism), and the methods employed by formalists purposefully ignored pre-existing theoretical contexts. However, formalism involves a linked set of assumptions about the nature of language and literature, which were neither often nor completely acknowledged by early formalist critics.

At the core of both Russian and American formalism is the notion that literature serves a particular aesthetic function apart from that of everyday or conventional or common language. In *Art as Technique*, Sjklovsky describes the purpose of art (including “artistic” or poetic language) as reestablishing the “process of perception.” In this function, art “defamiliarizes” those objects to which it refers, creating a sense of strangeness (*ostranenie*). *Ostranenie* then *re-engages* the process of perception, as that process exists prior to its mediation by language. During this re-engagement, literature functions in a manner somewhat akin to phenomenological “bracketing”; literature defamiliarizes language through a self-referential process with consistent and measurable formal properties.

The above sequence entails a number of assumptions about the nature of language and mind. However, before preceding further, it is first necessary to deal with the potentially

misleading term of “perception” in the above – a term which Sjklovsky purposefully disassociated from Aleksander Potebnia’s earlier claim that art was “thinking in images.” Sjklovsky and other formalists clearly repudiated this particular distinction between practical and poetic language, and, therefore, the “process of perception” referred to by formalists is perhaps better thought of, in a more general sense, as a process of *semiosis*, or, even more generally, as a process of *cognition*.

Given this realization, formalism can be interpreted as an early form of cognitive science with its goal to find formal properties of sign and symbol systems indicative of formal properties of the mind. (Compare, for instance, the relationship between formalism and cognitive science to that between formal and cognitive linguistics.) And the most basic theoretical assumptions of formalism remain consonant with those of cognitive science – with one important omission. Those basic assumptions are these:

- The function of literature is to evoke a subjective but universal human affect (*ostranenie*), based on common and consistent phenomenological properties of language, i. e., a common and consistent *aesthetic*. This affect is best measured objectively, though indirectly, through measurement of the sign and symbol system (literature) that promotes it.
- While formally and functionally distinct, literature is part of the same sign and symbol system as common language. Literature applies sign and symbol relationships of conventional language in unconventional ways, e. g., in the form of trope or verse. Therefore, the literary function of language is not unique but *derivative* of the common function of natural language. Differences among characteristic types of language (poetic vs. non-poetic) are then differences based on sequence, or syntax, or relative *functions*.
- The primary function of common language is to familiarize (*automisation*); the function of literature (e. g., poetry) is to defamiliarize. Thus, the latter is dependent on and cannot occur without *reference* to the former – again emphasizing the derivative nature of literary form.

These three assumptions – that literature has universal form and affect; that literature is derivative of common functions of natural language; and, related, that literature functions as a self-referential (or language-referential) form – allow the adoption of formalist theory and methods by *semiotics*. However, it remains a bit of a stretch to place early (and current) formalism within the broader context of cognitive science without the further assumption that the subjective experience of literature originates within and is determined by biological properties of the human brain. This assumption – of a *cognitive* aesthetic – was not (and is not) necessarily a part of a formalist agenda. Explanations of the natural-historical origins and causes of human aesthetic experiences remain outside formalist theoretical domains; it is exactly this omission that has allowed the appropriation of formalist methodology by structuralism and other theoretical contexts.

Significantly missing from early formalist theory is a detailed theoretical explanation of just how – and for what reasons – *automisation* takes place. Thus, even when stated in its most positivist guise, formalism remains reactionary and more clearly delineated by its methodology and critique of existing bodies of literary theory than by its own unique theoretical

stance. Likewise, formalist theory as it is currently applied to the study of digital media greatly depends upon what set of theoretical assumptions are used to contextualize its findings.

However, given the basic assumptions above, regardless of the origin of universal properties of language, when and if such are revealed through formal analysis, these properties must to some degree reflect universal properties of cognition. That is, the “self” in a self-referential system cannot simply be that system per se, but rather must involve the self-referential process that sustains that system. To isolate form in human language is to isolate some aspect of form in human self (or, using a mechanical analogy, in the system “engine” which generates self).

3. FORMALISM IN DIGITAL MEDIA

Digital media provide rich opportunities for formal analysis due to their reliance on an explicit *code*. And, in fact, most formal analyses of media engage the relationship between media codes and human codes, such as language. There are several flavors of media (code) theory distinguished by the degree to which formal properties of digital code are assigned influence and priority over formal properties of human perception, cognition, and experience.

One of the more recent examples of a purely formalist approach largely unfettered by contextual concerns is Andersen's semiotic analysis of programming languages [2], in which he considers aspects of digital signs “unique to the computer medium” (p. 216). This analysis de-emphasizes all affective and interpretive components of digital media in favor of classifying digital code – i. e., the digital sign and symbol system – solely on the basis of its relationship to other sign and symbol systems. For instance, Andersen assigns a single set of objective properties to an “interactive” sign: an interactive sign accepts input, has mutable features, and can affect features of other signs. When using such a definition, no assumptions need be made or implied concerning the function of interactive signs within human interpretive systems.

Others, however, more strongly emphasize the importance of human interpretive systems and functions in classifying digital signs and symbols – and, correspondingly, give as much attention to the aesthetics as the form of digital media. Manovich, for instance, distinguishes between “transparent” and “non-transparent” digital code with reference to the ability of that code to transform human thought. [8]

In cultural communication, a code is rarely simply a neutral transport mechanism; usually it affects the messages transmitted with its help. For instance, it may make some messages easy to conceive and render others unthinkable. A code may also provide its own model of the world, its own logical system, or ideology; subsequent cultural messages or whole languages created using this code will be limited by this model, system or ideology. Most modern cultural theories rely on these notions which I will refer to together as “non-transparency of the code” idea. (p. 64)

If digital code – or any alternative sign and symbol system – is indeed transparent, then purely formal analysis such as Andersen's rightfully ignores all supposed distinctions between poetics of texts and poetics of digital media. However, if code is non-transparent – a position media

determinism takes to the extreme – then formal analysis is only the first step in establishing the mediating relationship between the study of poetics and the study of cognition. And, in fact, there is an even stronger cognitive-based position: that the transparency of digital media code is an indication of its influence and its origin rather than its “neutrality.” That is, the “logical system” provided by digital code is transparent – and relatively intractable – precisely because it parallels analogous systems in human semiosis and cognition.

For the remainder of this essay, I would like to examine some of the common functions of computer games as those functions are related to the early formalist notions of *automisation* and *ostranenie*. Then, based on the formalist assumptions outlined above, I would like to describe the relationship of computer game forms and functions to literary forms and functions.

It is now widely maintained that the concept of “literariness” has been critically examined and found deficient. Prominent postmodern literary theorists have argued that there are no special characteristics that distinguish literature from other texts. Similarly, cognitive psychology has often subsumed literary understanding within a general theory of discourse processing. However, a review of empirical studies of literary readers reveals traces of literariness that appear irreducible to either of these explanatory frameworks. [9] (p. 121)

3.1 Computer game functions

Aesthetics is most concretely the study of the human senses – or that which livens or awakens or gives pleasure to the senses. When the early formalists attributed the function (or “affect”) of *ostranenie* to poetic language, they did not consider this an affective fallacy for two reasons. First, the formalist position assumes that the effect of poetic language is common and predictable – that is, the function of poetic language has an objective nature and quantifiable form. And, second and related, *ostranenie* does not affect the individual so much as it affects the raw senses of the species; this assigns a universal – even involuntary and mechanical – quality to the poetic which provokes a single, sense-based aesthetic response: a state of heightened awareness in which, according to Sjklovsky, we “recover the sensation of life.”

What might be the corollary of such an affect as regards digital media and, most particularly, computer games? One of the more obvious candidates is media *interactivity* and associated “immersion.” Yet, while interactivity is probably the most often cited distinctive formal component of new media, the term regularly eludes precise formal definition. I will not take the time to review this mysterious elusion in depth, but let me offer two representative examples of interactivity definitions – one already mentioned.

As scientist, Andersen [2] prefers to locate the interactive process in objective characteristics of computer-based signs without immediate comment on or concern with the interpretive value of that process; as humanist, Aarseth [1] defines the interactive process more generically as “ergodicity,” which is then understood as determined by quantity of reader effort expended rather than by the specific quality of reader affect evoked. Neither of these couch interactivity within a broader *functional* context similar to that of Sjklovsky's, wherein media interactivity might be

understood as a derivation, transformation, and/or translation of human semiosis.

I have previously attempted to demonstrate how media interactivity is both derivative and transformative of existing sign and symbol patterns, or human semiosis [12]. That is, the characteristic pattern of new media interactivity entails a specific formal relationship among signs: a temporal sequence of significations during which successive signs are used to construct a context within which subsequent signs are interpreted, valued, and giving meaning. Thus, interactivity is a process of *recursive contextualization*.

Computer games – and, in fact, all types of human play – clearly exhibit formal patterns of recursive contextualization. Computer game experiences are perhaps most distinguished from those associated with literature by their extreme repetitiveness, leading to extended recursive computer game designs (e. g., a continuous progression through endless “levels”) and, simultaneously, both extended and discontinuous play. While single computer game play lasts far longer than the time required to watch a single movie or read a single novel, that play is marked by a long series starts and stops, saves and reloads. Paradoxically, then, the computer game seems to retain its novelty and appeal during what superficially appears to be repetitive and monotonous play behavior.

What is the affective function of such repetition?

Prototypically (though there are some exceptions to this), computer games engage the human senses much more directly and immediately than do genres of literature. In many games – e. g., first person shooters – mastery of game mechanics and interface is a necessary prelude to play. Nor is this a temporary impediment, which, once overcome, is no longer important to play. Constant attention to and manipulation of game mechanics is required throughout computer game play, even when these requirements recede from the conscious awareness of players. In fact, game play is more enjoyable precisely when the attention to and manipulation of game mechanics recedes from conscious awareness and the player is fully engaged or immersed in the game. Therefore, one function of repetition and recursion in game play may well be to engage and thereby familiarize the senses, leading to a phenomenological state of “unawareness” or, in early formalist terms, *habituation*.

Another important distinction between game experiences and literary experiences is the degree to which the latter are essentially personal while the former are always at least potentially social. To play is to play *with* some idea, object, or person; and, as computer game technologies have evolved, it has become increasingly common to incorporate multiplayer components into computer game designs. Thus, while computer games may function as private experiences, they also have the potential, unrealized by literature *during the process of reading*, to function as social experiences as well.

This means that the relationship between the computer game player and the digital code is ultimately quite different from the relationship between the reader of literature and the code of language. Literature remains essentially a process of communication in which meanings and values are transmitted (or shared, if you prefer) from person to person through a common code system. Computer game play remains essentially a process of experience in which meanings and values are neither definitively made nor permanently grounded in the digital code of their creation.

Certainly, computer game code is encapsulated to some degree within the rules of the game, but, during play, computer game players both abide by and, on a frequent and regular basis, test, revise, and transcend game rules. Much computer game play is motivated by a sense of mastery of, power over, and movement beyond the rules of the game. This same “movement beyond” the code of language, on the other hand, would quickly render natural language and literature meaningless.

Literature does not formally deconstruct conventional language so much as it calls our attention to it, allowing the defamiliarization process to occur at the level of cognition (or semiosis) rather than at the level of language per se. Unlike literature, however, computer games (and digital media aesthetics in general) are not circumscribed by the embedded rules of a natural language.

Phenomenologically, digital code remains a *simulation* of human sign and symbol systems and, as a simulation, can have neither physical ground nor visceral referent in the language-bound relationship between familiarization and defamiliarization. If the code of language, as the early formalists implied, ultimately refers to and is determined by the relationship between the function of human senses and the function of human sensory processing, then digital code ultimately refers to and is determined by no more or less than *reference* itself.

Thus, while the rules of language bind, restrict, motivate, and focus the literary experience, the rules of digital code have no similar impact on the experience of computer game play. Computer game design may well incorporate (simulate) literary functions, but these cannot serve the same function as literature insofar as these functions are incorporated *into the digital code* (e. g., become a part of the rules of a game). For, once part of the rules of the game, then the rules of language must submit to the same transformations (i. e., referential functions) as all other components of digital code. When simulated by digital code, these rules of language reference something *else*.

Computer games using the rules of language as a design element – notably so-called “interactive fiction” – have found it difficult to combine the distinct aesthetics of literature and play. Several critics now recognized the dissonance of these respective forms, but do not therein acknowledge their fundamental incompatibility. Montfort [10], for instance, describes interactive fiction designs as only “potential” narratives (yet narratives nonetheless); similarly, the literary-inspired analysis of Ryan [13] emphasizes the use of narrative patterns and processes within interactive digital media to generate a variety of “possible worlds.” The question remains, however, whether the semiotic process necessary to generate potentials and possibilities is not antithetic to the semiotic process necessary to read and interpret narrative.

Use of defamiliarization techniques within interactive digital media – such as computer games – must, in fact, ultimately fail due to the inability of those techniques to directly reference and viscerally access the *embodied* code of natural language. Any object subject to a defamiliarization process must have been transformed first by a familiarization process; computer games resist such a process. Computer game play familiarizes, but cannot itself, as play, be familiarized. That is, to play with play reduces simply to play. While literature reveals the underlying mechanics of an embodied language, computer games and similarly interactive and playful digital forms

reveal only the contents (i. e., the *emptiness*) of a disembodied semiosis.

In summary: four common characteristics of computer games and play distinguish the play of computer games from the reading of literature and are, therefore, associated with a distinctive computer game play aesthetic. These characteristics are 1) the raw mechanics of the digital media interface, 2) a discontinuous and repetitive (i. e., *recursive*) play, 3) the reference to and transformation of game rules during recursive play, and 4) a unique (non-language-based or *disembodied*) relationship between the game player and the game code. Based on these characteristics, computer games are best classified as a supra-literary aesthetic form; and, thus, the computer game aesthetic is, in the sense offered by the early formalists, *anti-poetic*.

Poetic language defamiliarizes conventional values and meanings through reference to the embodied mediation of the senses by natural language. Computer games – and the formal process of interactivity – engage and invigorate our habituated senses through a simulation of human semiosis. This simulated process – marked most definitively by recursive contextualization – displays the formal pattern of a meaning-making *event* without ever terminating (as do the formal patterns of language and literature) in a specific meaning made. From a formalist perspective, all literature tends toward the poetic, which references the habituations of natural language; likewise, all computer games tend toward the simulative, which references only something *else*.

3.2 Computer game forms

Can formal analysis identify those components of digital media and computer games that evoke familiarization? In order to do so, that analysis must focus on relationships among signs and symbols within computer games analogous to those relationships within human semiotic systems, including but not restricted to language.

Currently, a great deal of formal analysis of computer games has focused on the delineation of computer game genres [1] [15], which for the purpose of our discussion here, I will collapse into three broad categories: action/arcade games, role-playing games, and strategy games.

I have argued elsewhere [12] that the fundamental form of these three genres is determined by the semiotic processes associated with their play. Action/arcade games emphasize oppositional relationships among signs; role-playing games emphasize contextual relationships among signs; and strategy games combine these two in a process of *recursive contextualization*. In brief, each genre builds upon the previous, so that strategy games display a culminate form of play in which computer game play is both a mimicry of (something different from) and a model of (something self-similar to) human semiosis.

This peculiar semiotic form associated with computer strategy games – a form which is not what it represents yet which formally represents itself – I call *anticonic*, in opposition to those signs which are what they represent yet do not formally represent themselves, i. e., icons. However, rather than revisit that argument in detail here, I would like again to turn to parallel formalist examples from the early part of last century.

Roman Jakobson was one of the youngest of the early Russian formalists and the member of the original group who perhaps

proved most facile in applying formalist principles and techniques within other theoretical disciplines. Also one of the founders of the Moscow Linguistic Circle, Jakobson made multiple contributions to linguistics and literary theory. Most pertinent here is Jakobson's classification of literary genres on the basis of their characteristic tropes or, put more generally, characteristic relationships among signs.

Whereas I have previously classified semiotic processes as either oppositional or contextual [12], Jakobson establishes a similar binary division within human semiosis marked by "selection" and "combination." [6] Jakobson then argues, in formalist fashion, that broader literary forms are derivative of these two most basic and fundamental forms. Jakobson associates "selection" with metaphor and, at the level of genre, with romanticism; he associates "combination" with metonymy and, at the level of genre, realism.

It is easy to find parallels between Jakobson's analysis, my own, and that of contemporary computer game critics such as Espen Aarseth, who identifies two formal "master tropes" characterizing not only all computer game play but all "hypertext discourse." In parallel with early formalist claims, Aarseth's tropes display distinct phenomenological affects. The first is *aporia*, a feeling of confusion or helplessness among players – a state associated with the initial awareness and processing of oppositional signs such as those confronted during initial exposure to the physical interface of action/arcade games or, as Aarseth notes, during encounters with difficult puzzles or major obstacles within any game. The second of Aarseth's master tropes is *epiphany*, resulting from the resolution of oppositions (and, thus, the resolution of aporia) through a contextualization process. [1]

Further, Aarseth classifies his tropes as "pre-narrative," existing apart from (or at least prior to) those semiotic processes associated with language and literature. Similarly, Jakobson's analysis implies [7] that, while metaphor is fundamentally an intralinguistic form, metonymy is *metalingual*. From this, we then must assume that any formal analysis regarding such forms must also be metalingual (i. e. non-language-based or determined).

My own analysis concurs with this line: that there exists both a formal and affective distinction between poetic form and computer game form; that this formal and affective distinction establishes the interactive aesthetic form as the more fundamental form (e. g., as either supra- or metalingual in nature); and that the interactive form roughly corresponds to what early formalists referred to as the habituation of the senses. I would, in fact, argue even the stronger position that, as a result of the above, narrative relationships are incongruous and frequently dysfunctional when applied within interactive computer game designs. [11]

Given that the habituation of the senses – part of a familiarization process – occurs prior to the mediation of natural language and, necessarily, prior to the defamiliarization process attributed to literature, it is not unreasonable to transform formalism assumptions into a more fully developed science of cognition by locating the values and meanings of habituation (and, thus, the values and meanings generated during computer game play) within what Grodal [4] calls human "cognitive architecture":

Media cannot change our innate cognitive and emotional architecture, only invent products that may activate and enhance the innate specifications. (p. 146)

One of the more curious characteristics of the “innate specifications” of play is the absence of an endpoint. That is, play has no built-in terminating function – similar, perhaps, to the circumstance of “unlimited semiosis” (Peirce). And the most basic formal components of story – beginning, middle, and end – seem an interruption within the timeless flow of the game.

Of course, there are designer-imposed, frequently arbitrary, and often disheartening endings to games, but these are seldom greeted with a great sense of player satisfaction. And, more often than not, these endings *ex machina* are incongruous adaptations of otherwise self-similar formal design elements – e. g., the recurring mobs of action/arcade games, the leveling of characters within role-playing games, the multiple contexts, scenarios, tactics, and replays of strategy games, and, indeed, even the repeating cycle of Aarseth’s generic aporia-epiphany pair.

Jakobson believed we could learn more about the nature of language from its limitations (e. g., those observed in aphasia patients) [6] than from its achievements; likewise, we may well learn more about the nature of digital media from its failed appropriations of literary form – such as story and narrative – than from its widespread depiction as “hypertext.”

3.3 Computer game play

“Play tends to remove the very nature of the mysterious.”

Roger Caillois, *Man, Play and Games*, 1961.

Computer game play is a different phenomenological experience from that of reading. That is, computer games and literary forms appeal to different *sensibilities*. And, correspondingly, the aesthetics of play are distinct from the aesthetics of reading. This latter seems obvious, but is not always apparent among those who find close parallels between computer games and literature.

The mutable and transformative properties of play have led some to assume that playful simulations of literary forms (e. g., interactive fictions) function in a manner reminiscent of their originals. And, upon superficial and cursory play, prior to full engagement with interactive media, among players familiar with literary experiences, perhaps this is true; however, upon repeated play, the experience of meaning-making during computer game play colors the values of all meanings made therein.

Computer games function as human sign and symbol systems, and, as such, share a finite set of semiotic patterns and processes with literature, just as literature shares those patterns and processes with natural language and conventional texts. Thus, reading can be considered in this sense derivative of play, just as literature can be considered derivative of natural language. Play is distinguished most fundamentally in that it seems to be at the root of the derivation process and, correspondingly, unaffected by it. Play, in other words, stands alone, rigid in form and dominant in influence.

For these reasons, all signs and symbols within computer games are ultimately interpreted as *icons*. That is, all signs and symbols within computer games are ultimately valued and given meaning only within the system of the game itself. Thus, games tend more toward the simulative (i. e., without regard to referents) than the simulation.

Examples I have used earlier to demonstrate the iconic qualities of computer game signs are the classic games *SpaceWar* and *Hammurabi* [12], though many other examples serve equally well. Though these two games originated as simulations of space combat and city management respectively, during play their signs become disassociated from their real-life referents and more definitively associated with their roles and relationships within the context of the game interface, interaction, and rules.

Whatever might be strange or mysterious concerning a sign or symbol is systematically removed and replaced with the immediate sensation of the sign itself and the accompanying ability to value and understand that sign during play. Games, therefore, do not elicit a sense of awe or wonder as does literature, but rather grant a sense of self-satisfaction and self-identify. This immersive experience of the semiotic self is no doubt part of the addictive-like appeal of computer games.

The willing suspension of disbelief within the literary experience is then replaced in computer game play by the active reinforcement of the phenomenological experience of self. And any interruption in this reinforcement process is more likely to break the player’s concentration, focus, and pleasure in completing the specific task at hand than to void any carefully constructed and maintained game “fiction.”

For instance, playing game sequences out of order is as common as designing sequences of game play as independent modules, often linked only by the most superficial of narrative overlays (e. g., Pacman-like cut scenes). Literary forms, in contrast, depend greatly on the temporal sequence of their presentations (e. g., their plots), which are intended to have a cumulative effect. Not so with computer game forms. Various parts of computer games may be played more or less frequently, in or out of order, with greater or lesser degrees of enjoyment, regardless of the player’s orientation to any supposed (or actually present) literary allusions and forms.

Certainly, an aesthetic of play must recognize player desire for and game design components contributing to some measure of unity and structure, but this function is then accomplished by means appropriate to and consonant with pre-existing human play behaviors. In lieu of story and narrative, for instance, designer-imposed game “winning conditions” frequently serve a unifying function somewhat similar to that of theme or motif in literature. Even in games without explicit winning conditions – e. g., multiplayer role-playing games such as *EverQuest* and *Ultima Online* – players impose their own winning conditions to structure and guide play.

Under certain designer- or player-imposed winning conditions, then, it is conceivable that the computer game’s semiotic functions might be forced to resemble those of literature. That is, perhaps either designers or players might impose the same goals, themes, motifs, and the like as those encountered within language and literature. Yet, within the context of digital media and computer games, all such resemblances must remain formal simulations – and therefore distortions – of natural language and its accompanying defamiliarization through poetic form.

Indeed, play may at times “ascend” into literary form, just as literature may at times “descend” into play. Crossword puzzles and puns, for instance, are forms of play which defamiliarize language and thus might be considered lesser or partial forms of literature. There is no corresponding “lesser or

partial” form of play, however, which enables the functions of literary forms.

Computer game role-players who bring literary sensibilities into multiplayer games commonly attempt to shape game play in such a way as to construct a story or drama – often to the dismay of other players. The computer game role-player in MMORPGs is in conflict with – and often serves as a source of amusement and/or frustration for – those players who value signs more strictly according to objective game rules (e. g., the min-maxers). And a literary sensibility alone is not sufficient to provide a literary experience.

Most role-play within MMORPGs takes place either among small groups of offline friends or else in periods of short duration wherein large variances in the values and meanings assigned to game signs have only a fleeting impact on individual play. Larger groups (e. g., guilds), which role-play on a regular basis, must adopt a strict regimen of rules and regulations – very similar to those of the broader game of which they are a part – in order to force recursive patterns of play into structures more recognizable as romance or fantasy or similar literary genre. These rules and regulations quickly become more analogous to the form of games than the form of literature, and, insofar as these simulated literary genres remain within an interactive media context, individual play – and a common aesthetic of play – treats these rules and regulations like any other component of play: as objects to be manipulated and transformed.

This is true of all designer- and player-imposed game winning conditions, regardless of their resemblance to literary form. Within computer game play, a game won is only seldom an indication of play over. Computer game winning conditions are most often doled out only in small increments and a single, isolated win is usually an incentive for further play.

Likewise, in competition among human players, single game outcomes are seldom understood as definitive; and, when involving competition with computer AI opponents, the majority of computer game designs provide multiple opponents, multiple levels of difficulty, and/or multiple scenarios of play. Indeed, winning conditions themselves are often made variable as a part of the game design and therein become susceptible to player choices and desires – both inside and outside the formal context of the game rules.

Yet, despite the persistent reference to and eventual transformation of game rules during play, there remain formal constants of play design and desire, or a common and formal play *aesthetic*. Regardless of the specific achievement, or score, or quality of play required to “win,” for instance, there is the widespread assumption that game play should be “fair” and that winning conditions should be as equal as possible for all players. And, correspondingly, those players who manipulate game rules and change winning conditions in such a way as to create inequalities of play are normally accused of “cheating” – just as are computer AI opponents who do not obey the same rules as their human counterparts.

But, if game rules must ultimately conform to an aesthetic of play that allows the manipulation and transformation of game rules, to what extent is rules manipulation destructive to the rules (or the code) of the play aesthetic itself? That is, aren’t breaking the rules and changing the winning conditions – cheating – logically and necessarily part of the same aesthetic sensibility promoting equality and fairness in play?

Defining a formal aesthetic of play often reveals paradoxical aspects of play such as these, which, although an integral part of human semiosis, the formal analysis of games cannot by itself interpret.

Though some amount of rules manipulation is always expected (and observed) during computer game play, the degree to which this manipulation is characterized as proper or improper, or the precise level of rules manipulation dividing, for instance, the power gamer from the casual gamer, cannot be discovered through formal analysis alone. While formal analysis of game rules and play behaviors suffices to describe the semiotic patterns associated with computer game play, that analysis is silent concerning the values and meanings assigned to those patterns – paradoxical or not – within specific social and cultural contexts. Rewards (or punishments) for play, the relationship of play to work, and the current social status of computer games and their play are all topics indicative of the degree to which play and computer game forms remain part of the social context in which games are created, played, and, in most cases, bought and sold.

Likewise, just as social and cultural contexts can affect values and meanings related to games and play, the principles and techniques of literary form may impinge on game play in the same contextual sense: from the outside in. *During and within play*, however, computer game play displays a rigid integrity of form and a common aesthetic. For this reason, formal analysis of computer games is better focused on the form of computer game *play* than the form of computer game “text” or design.

Early formalist approaches failed to deal with the form and theory of reading in as much detail as they did the form and theory of texts. As a result, theoretical rivals to formalism came to include reader-response theory and hermeneutics, both of which emphasize the power of the reading process and the function (rather than form) of the text *as read*.

While formalism currently retains the ability to reveal, document, and classify objective and recurring characteristics of games most common and significant to game play, the phenomenological process of play – i. e., the *semiosis* of play – remains hidden from direct observation. And, therefore, the relationship between game form and cognitive function remains speculative. However, if human cognitive and/or semiotic functions have formal correlatives in interactive game play – as I have suggested – then it seems at least worth the attempt to apply formalist methods to the study of the subjective experience of play.

This has, sort of, happened before.

As early formalist theory evolved, there were attempts to develop theoretical positions encompassing both the universals of form and the variety of functional structures ultimately determining their effects. Jakobson’s “phenomenological structuralism” (see Holenstein [5]) and Ricoeur’s “phenomenological hermeneutics” combine the study of reader/player experiences with the formal study of texts. And, for that reason, both appear to have the potential for more valuable insights into the nature of play and games than does a purely formalist approach.

Structuralism, post-structuralism, hermeneutics, discourse analysis, social semiotics, and many other contemporary literary theories have applied early formalist methods to an understanding of values and meanings within social and cultural contexts – and rightfully so. However, as I have

indicated here, early formalist theory seems, in retrospect, more appropriate for extension into cognitive science than social science.

In fact, if there are universal properties of human cognition and semiosis and play operating in parallel with and thus reinforcing formal characteristics of games, then there is much to be gained from pursuing a phenomenological hermeneutics in which the “interpretive community” is precisely the biological origin and natural history of the brain.

The most basic argument asserting the primacy of the biological code in determining form is then simply this:

Given two systems of code, one in human cognition and one in digital media, which system could be expected, during some extended period of mutual interaction, to most fully adapt to the other? That is, which system would display the greatest amount of variation and adaptive change over time?

Obviously, it seems to me, the system which is more flexible and capable of change will adapt more quickly and more radically to its environment than will the system which is less flexible and less capable of change. Thus, the code associated with digital media forms is more likely to adapt to the code associated with human interpretive processes – rather than vice versa.

Here, of course, you must assume that there is indeed a common, universal, and biologically determined human interpretive process and an accompanying “code.” But this is an assumption implicit in early formalist work and, in my mind, necessary to claim basic and common functions of language such as familiarization and defamiliarization.

Giving at least face validity to early formalist assumptions about the common and universal nature of sensory habituation mediated by natural language, the same simple argument might also be applied to social and cultural “codes.” These, too, seem more obviously amenable to sudden change and variation than biological codes governing human cognition. Thus, according to the same logic as above, social and cultural rules and systems are ultimately more likely to display adaptations to human cognitive properties than vice versa.

In any case, formal properties of computer games and computer game play clearly demonstrate the use of sign and symbol systems distinct from the sign and symbol systems of natural language and, most particularly, literature. While reading literature demonstrates that the shared values and meanings of conventional language are only one of many possibilities, playing computer games demonstrates that multiple values and meanings might result from a single semiotic process.

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