

Cybernetic Systems:

Relations between Hypertext Fiction and Notions of Humanity

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Is it the tools we use that form how we can think, or is it the way that we think that evolves the tools we use? Whatever the answer to this question, it is evident that tools and humans affect one another in an intricate way. Since the Mechanistic era, the evolution of machines and notions of the nature of humanity has occurred in a parallel fashion. Just as machines were seen as metal objects with cogs and levers, so too the Mechanistic Era of the 17th to 18th century conceived the human body as a machine, such that the heart was understood as a pump, and lungs as bellows. The Thermodynamic Age of the 18th to 19th century viewed both machines and humans as energy processors. Machines burned fuels, while the human body burned sugars and fats. Today, in the Cybernetic Age, both machines and humans are understood as information processors. Machine and human bodies are seen in terms of code, and function through the process of information feedback. Both are sets of information to be interacted with, read and deciphered. Both are cybernetic systems. The world's conception and creation of tools thus runs parallel to its understanding of humanity. Both human and machine evolve in a similar fashion since they both exist within the same intricately connected web, and are thus affected by one another and by the other related factors that exist as nodes within this rhizome structure.

Today, the concept of what constitutes as a machine is much broader than in the 17th century. Entities that are considered to be machines range from robots and computers to the economy and humans themselves. One relatively new cybernetic machine is the Internet, and more specifically hypertext. An analysis of hypertext fiction provides a good example of the characteristics of postmodern cybernetic systems, and acts as a mirror to the way humanity is itself understood in the 21st century. By

focussing on the non-linear aspects of hypertext fiction, this essay will examine the understanding of ergodic text as a cybernetic system, and will examine aspects of its inherent non-linearity. Non-linearity of hypertext not only changes the way one interacts with the text to provide a more immersive and authorial experience, but also illustrates the parallels between hypertext fiction and concepts of the postmodern notions of humanity.

As described by Espen Aarseth, ergodic works are a cybernetic system. This is a crucial factor in more fully understanding the ways hypertext fiction functions as a non-linear system; thus, the terms ergodic and cybernetics will be defined before proceeding any further. The term "ergodic" is derived from the Greek words *Ergos*, meaning "work" and *Hodos* meaning "path". Therefore, an ergodic text is "a type of discourse whose signs emerge as a path produced by a non-trivial element of work" (Aarseth, 32). Cybernetics is describes as "communication and control in the animal and machine" (Wiener, 19). It relies on the process of feedback to achieve this communication and control. Ergodic systems thus fall under the category of cybernetics in the fact that they require interaction to produce a meaning. The "work" necessary in ergodic systems and the "feedback" of cybernetic systems are one in the same. The "work", or "feedback" must be performed in conjunction with the system, otherwise the system does not function, or rather, does not generate meaning. The feedback in cybernetic systems ultimately strives to achieve equilibrium in a system that is driven towards increasing entropy. Ergodic text also strives to bring order to a fragmented system since, through "non-trivial work", the participant strives to achieve a unified meaning to an otherwise disarrayed environment. Therefore hypertext fiction, by being an ergodic system, also

falls under the category of cybernetics.

Because it is ergodic and thus a cybernetic system, hypertext fiction is inherently a non-linear structure. As Aarseth states, the hypertext fiction will "generate a different semiotic sequence each time it is engaged" (Aarseth, 33). This is due to the fact that hypertext fiction is essentially structured as a multiplicity of nodes connected to form a network. Non-linearity thus implies that the meaning is not singular but multiple. Meaning is generated by the way the reader connects these nodes, and since there are unlimited ways to do this, there are unlimited outcomes. The reader therefore initiates the perception of connectivity and meaning through "feedback" with the hypertext. In this sense, the environment of an ergodic text such as hypertext fiction is an "event space of semio-logical possibility" (Aarseth, 33). The term "*event space*" stresses the fact that readers are people in action; that meaning is generated through action, and is therefore not inherent in the sign itself. The meaning of hypertext is "composed not of units, but rather of directions in motion" (Deleuze, 21). "*Semio-logical possibility*" illustrates that the possibilities of what the signs mean, the logic of the signs, are manifold. A single interpretation from this sea of meanings is determined by the way a specific individual "inter-acts" with the signs at that precise reading. As Aarseth explains, this interaction often occurs as "aporias and epiphanies, which are the prenarrative master-figures of experience, from which narratives are spun" (Aarseth, 39). Rather than in linear narratives where the story is pre-determined and simply waiting to be read, the story within a hypertext fiction only evolves through the work necessary to overcome the aporias; otherwise, the story the reader ultimately realizes does not exist. Simply put, in linear text the narrative is in existence before the experience of reading, while in ergodic

text the experience, or rather the "aporias and epiphanies", precede the narrative.

The non-linear structure of hypertext also changes the relationship between the initial author of the work and the reader. Therefore, not only is the actual structure of hypertext non-linear, but so too is the way it is created. The traditional hierarchy that places the author above the reader dissolves with ergodic text. As hypertext theorist George Landow states, "hypertext has no authors in the conventional sense" (Landow, 100). Traditionally, the author provides a linear work that cannot be altered or manipulated by the reader. With hypertext, authors do not possess the primary meaning of the work but rather provide disjointed segments, which only come together to make any sense through the work of the reader. Therefore, there is a type of "cyborg authorship" (Aarseth, 40) since the meaning is only generated through feedback between reader and machine. Thus man and machine become one unit – the cyborg. The initial author, the reader, and the hypertext itself all co-exist within the same network; nothing is transcendent for each is equally necessary to generate meaning. There are no distinctions between these entities since each relies so heavily upon the others to perform its own functions and to be in existence.

This conception of non-linear interconnectivity is well illustrated by the concept of the rhizome, which creates a highly immersive experience for readers of hypertext. Theorists Deleuze and Guattari explain the rhizome text as one that "connects any point to any other point...it has neither beginning nor end, but always a middle" (Deleuze, 21). The fact that there is only a "middle" implies that the reader is always within the text, always immersed. They understand text as "an assemblage with the outside" (Deleuze, 23), which implies that everything is unified. Therefore, readers are

immersed within the text because they are a part of the text.

Hypertext fiction is therefore immersive since it incorporates the reader within its non-linear structure, but it is also immersive in the fact that it is immersive through "imaginative participation" (Ryan, 95). With traditional fiction, readers often experience a state of "entrancement" in which they become so interested in the plot that they forget that they are simply reading. However, "the reader remains aware in the back of his mind that...the textual world is not reality" (Ryan, 98). This type of trance often occurs when reading hypertext but at a more intense level which often dissolves the conceived distance between the space of the real world and the space of the textual world. Ryan describes this intense connection as a state of "addiction", in which the reader loses the "capacity to distinguish textual worlds, especially those of fiction, from the actual world" (Ryan, 99). Since hypertext fiction is immersive in both a structural sense and an imaginative sense, it is natural to question the implications of such cybernetic systems. Will people become more highly immersed in virtual worlds than in the "real world", living more within their imaginations than in reality? Will humans become more like machines while machines become more like humans? It seems that divisions are blurring on many levels, and evidently, the way the world perceives machines reflects the way humanity is understood.

Changes in the way written text is understood due to hypertext fiction illustrates the way human thought is changing from traditional notions, and reflects how people's views of their own existence is changing. Just as hypertext fiction generates a different meaning each time it is engaged, the postmodern conception of identity is also very fragmented. Therefore, identity is no longer seen as an "idem", which is the Latin

root of the word "identity" meaning "the same" (Turkle, 242). The postmodern notion rather conceives a person as bearing a multiplicity of personalities. Thus the self is seen as a type of hypertext, since "the self takes the form of a centerless network of codes that also serves as a node within another centerless work" (Landow, 73). Like hypertext fiction, an individual means many different things to many different people, and these distinct meanings are all attributed to the specific ways in which people interact with that individual. Just as the reader of hypertext traverses some nodes while others go unnoticed, so too some aspects of a person's personality are realized, while others remain unknown. In other words, the way a person is conceived by another person is dependent on the way information is processed between the two individuals through the process of feedback. Humans, just like hypertext, are understood as cybernetic systems.

With such a conception of hypertext fiction and humans as cybernetic systems, many questions arise. Aarseth states that "the traditional hegemony of narrative in aesthetic theory...is certainly challenged by the slowly rising awareness of ergodic art" (Aarseth, 41). However, is not hypertext a stronger example of hegemonic paradigms than narrative discourse? When reading a linear work, a reader is fully aware of the fact that they have little effect on the development of the story. They are aware that they are simply absorbing a work created by someone else, and thus do not have a false notion of control and power. However, readers of hypertext, just like individuals in a hegemonic society, feel empowered by their belief that they have unlimited choice and control over outcomes. It appears that "the reader has the ability to choose his or her way through the metatext...and to create links between documents written by others" (Landow, 71). However, this appearance of choice is limited and superficial. Readers are given a false

sense of freedom and authorship, since the initial authors of hypertext fiction, just like hegemonic powers, still bear a significant amount of control over the choices and outcomes that are made possible to individuals. In other words, individuals are blindly imprisoned within a limited set of choices from which to make their decisions.

A second question arises with the conception that ergodic text and humans are both cybernetic feedback mechanisms. Cybernetics recognizes the constant move towards entropy, and uses feedback mechanisms to attempt to resist this movement. However, entropy is irreversible, and this fight to bring order to an increasingly disordered system proves to fail. Therefore one must ask whether attempting to find meaning in identities and hypertexts is a worthwhile task? It seems that hypertext and identities are so fragmented that the attempt to reach an understanding of either is likely to fail. At most, they will produce an illusion of coherence, a mirage of an attainable meaning. Humanity is striving towards a goal that can never be achieved: the goal of understanding. By reading texts, people are trying to decipher; yet, in the postmodern world, with the postmodern text, finding the core message in the code is impossible. There is no core. There is no single message. Everything is momentary. Everything is transient. As quickly as we can navigate between links, as quickly as our thoughts deviate, this is how quickly meaning can change.

It is thus seen that ergodic text and humans themselves are conceived as cybernetic systems in the 21st century. The non-linear, cybernetic structure of ergodic text parallels concepts and questions about the nature of humanity. Humanity and machines are mirrors that reflect one another's natures. But since the nature of either is incomprehensible, the reflections only bear superficial illusions of meaning and

understanding. It is impossible to try and understand anything as a “one” because every entity is only in existence because of the network it is a part of. As Deleuze and Guattari state, a linear structure “imposes the verb ‘to be’, but the fabric of the rhizome is the conjunction, ‘and...and...and...’” This conjunction carries enough force to shake and uproot the verb ‘to be.’ Where are you going? Where are you coming from? What are you headed for? These are totally useless questions.” (Deleuze, 25). We may try to find meaning in hypertext, and attempt to understand the mysteries of existence, but any type of understanding is simply momentary, for everything in life is transient. We are nomads along a rhizome structure that leads nowhere, but everywhere. “...Old man river he just keeps rollin’ along” (Deleuze, 25).

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