Education and Culture DG

Europe and the US in the 1960s

The Cold War of Metaphors:

Cybernetic Fiction and the Fear of Control in the 1960s

<u>**Outline – Research Paper**</u>

Information, Communication, and Control –
Cybernetics and the Rise of the Information Society

Outline:

I. Introduction: Cybernetic Fiction in the 1960s and its Fear of Control

The 1960s were a decade of change, liberation, and hope on the one hand and reactionary forces trying to quell what they perceived and feared as a threat to the system on the other. It was a period in the 20th century when paradoxes in American society seemed to collide and society almost came apart at the seams. At the same time the whole world was threatened by total nuclear annihilation in the ongoing struggle for world dominance by the USA and the Soviet Union. Consistently, in literature, and the fine arts in general, it heralded the start of the age of paranoia and postmodernism. One of the most fundamental premises of this situation came into being during World War II: Cybernetics. The study of communication and control in systems defined by feedback loops with their ample stock of social implications, as described in the works of Norbert Wiener, had a profound impact on writers such as John Barth, Donald Barthelme, Thomas Pynchon, William S. Burroughs or Kurt Vonnegut.

This paper will present the central ideas of cybernetics and set them in the context of a dominant Cold War ideology in which the fear of control and machinery was becoming an overwhelming social variable. It will show how the postmodern writers of the 1960s used the ideas of cybernetics and especially the metaphor of the machine to make sense of a world marked by the Cold War and the existential angst of being crushed by the 'system.' Two authors, William S. Burroughs and Kurt Vonnegut, will be discussed in detail in order to show how those concepts have entered their writing and how they influenced their discussion of the problems at hand. The books chosen for that purpose are Burroughs' experimental conclusion of his Nova trilogy *Nova Express*, published in 1964, and Kurt Vonnegut's more conventional 1969 novel *Slaughterhouse Five* about his personal experience as a prisoner of war during the fire-bombing of Dresden. Special focus will be on the word as virus in *Nova Express*, as well as on *Slaughterhouse Five* and its attempt to make sense of the senselessness of war along with Vonnegut's notion of writing and the writer in a cybernetic context.

The cybernetic fiction of the 1960s constitutes an effort to make sense of the age of the Cold War and overly powerful systems through the metaphor of the machine. It is an attempt to portray a deterministic view of the world that leaves mankind with no choice but to repeat its mistakes over and over again. In this respect, the paper will explore whether the two novels are ultimately acts of creative resistance or acts of submission to a repressive idea of the state and the resulting fear of control.

II. Writing against and about Systems: Burroughs, Vonnegut, and Norbert Wiener

Before discussing William S. Burroughs' *Nova Express*[1] and Kurt Vonnegut's *Slaughterhouse Five*[2] in detail, this paper will provide some general information about the field of cybernetics and especially about its most notable representative, Norbert Wiener, and the key words he developed to describe it. Thus, the central ideas of the study of communication and control will be established. They will then be read in a Cold War context, in terms of ideology and metaphors as described by David Porush in the Chapter "The Metaphor of the Machine" in his analyses of cybernetic literature, *The Soft Machine: Cybernetic Fiction*.[3]

A. Communication and Control: A Short Introduction to Cybernetics

Dating back to the early 1940s, Cybernetics is mainly concerned with what Porush calls "the notions of a governor […] of *information*, and of *feedback*."[4] In terms of etymology this is exactly how Norbert Wiener, Dr. Arturo Rosenblueth, and their colleagues perceived their field of study when they chose to derive the name 'cybernetics' from the Greek word for steersman.[5] This idea of exercising control is also an integral part of cybernetic feedback loops. The beginnings of cybernetics must also be linked to military research during World War II. Wiener, for example, then a renowned mathematician at the Massachusetts Institute of Technology (MIT) in Boston, was asked by the United States military to develop an advanced system of antiaircraft weaponry based of the idea of feedback.[6] In the context of the cybernetic fiction of the 1960s this connection already shows that this genre was influenced by a science that came into being through the influence of the military in a time of, as Charlie Chaplin put it in his 1940 movie *The Great Dictator*, "machine men, with machine minds and machine hearts."[7]

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[1] William S. Burroughs, *Nova Express*, ([1964] Reprint, New York: Grove Press, 1992).

[2] Kurt Vonnegut, *Slaughterhouse Five* ([1969] Reprint, New York: Dell Publishing, 1991).

[3] David Porush, "The Metaphor of the Machine," in *The Soft Machine: Cybernetic Fiction*, (New York: Methuen, 1985), 1-23.

[4] Ibid., 20.

[5] Norbert Wiener, *Cybernetics: or Control and Communication in the Animal and the Machine.* ([1948] 2nd Edition, Cambridge, MA: The MIT Press, 1965), 11.

[6] Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America*, (Cambridge, MA: The MIT Press, 1996), 45.

[7] Charlie Chaplin, "Chapter 20," *Der große Diktator*, directed by Charlie Chaplin (1940; Burbank, CA: Warner Home Video, 2007), DVD.

1. Norbert Wiener's Books on Cybernetics

A scientist who, as mentioned before, was greatly occupied with cybernetics was Norbert Wiener. He wrote two books which would define it as a scientific field of interdisciplinary study and consolidate its influence as a philosophical variable in literature and social studies. His first book on the topic, published in 1948, was *Cybernetics: or Communication and Control in the Animal and the Machine*; in 1961, he would add two new chapters on "Learning Machines" and "Self-organizing Systems."[8] The second book was first published in 1950 with the telling title *The Human Use of Human Beings: Cybernetics and Society*.[9] While the first one was largely occupied with the theories of communication and control, *The Human Use of Human Beings* was more specifically concerned with the social implications of the field. Taken together, they prepared the stage for cybernetic fiction in a Cold War context defined by computers, communication, and control.

a. *Cybernetics: or Control and Communication in the Animal and the Machine* (1948)

Cybernetics, however, was not at all a military program. The interdisciplinary conferences which made its inception as a science possible were a rather idealistic endeavor. The so called "Macy Conferences," funded by the philanthropic Josiah Macy, Jr. Foundation, brought together the most important names of cybernetics during the years from 1943 to 1954, among them Norbert Wiener and other important scientists of the 20th century, such as John von Neumann, Claude Shannon, and many others.[10] As N. Katherine Hayles puts it in her book *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, cybernetics had a lot of different specialists in a wide range of disciplines, but they needed Wiener, as "a visionary who could articulate the larger implications of the cybernetic paradigm and make clear its cosmic significance."[11] The best example for the function he had to fulfill at the conferences is his first book on cybernetics. In it, he not only officially coined the term used to describe the field, but also managed to mix a history of cybernetics with a variety of mathematical formulae. To those he added suggestions about what the technical facts, hard to understand for the public, meant in terms of human life and society. *Cybernetics* thus not only became a founding text for the study of communication and control; it also had a significant impact on literature. Many writers picked up on the most

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[8] Wiener, *Cybernetics*, 169-203.
[9] Wiener, *The Human Use of Human Beings: Cybernetics and Society* ([1950] Reprint of the revised and updated edition of 1954, Cambridge, MA: Da Capo Press, 1988).
[10] N. Catherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, (Chicago: University of Chicago Press, 1999), 7.
[11] Ibid., 7.

important ideas Wiener presented in his 1948 book. Most central among those is "[one] of the cardinal notions of statistical mechanics, [...] entropy," along with the concept of "the Maxwell demon,"[12] both of which are concerned with information. On the one hand, entropy is a measure for disorganization in a system. This means that, as described by Ludwig von Bertalanffy, "in a closed system, a certain quantity, called entropy, must increase to a maximum, and eventually the process comes to a stop at a state of equilibrium."[13] On the other hand, the Maxwell demon is a theoretical entity which can sort the particles in such a closed system to keep it from stabilizing. One of the reasons why these complex ideas about information had a profound impact on society and literature was, again, the way Wiener explained it to the layman. For example, his final statement about entropy and what it actually means was harsh, yet easy to grasp: "[The] stable state of a living organism is to be dead."[14]

Another important concept that Wiener managed to greatly simplify can be seen in the following illustration from Ludwig von Bertalanffy's *General System Theory*[15]:
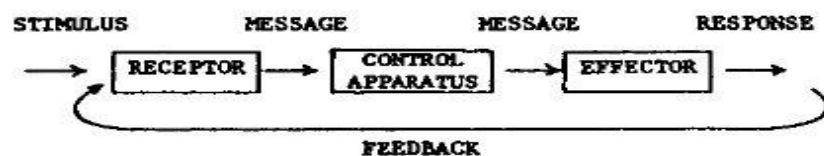

Figure 1   Feedback loop as described in Bertalanffy's *General Systems Theory*

While simple in terms of drawing, what it means needs explanation. Wiener used several examples throughout *Cybernetics* to explain it, like in the case of a car on an icy road:

> We thus give to the steering wheel a succession of small, fast impulses, not enough to throw the car into a major skid but quite enough to report to our kinesthetic sense whether the car is in danger of skidding, and we regulate our method of steering accordingly.[16]

Even though simplified here, feedback is important for the analyses of the machine metaphor in cybernetic fiction since, especially in the field of literary studies, it represents "feedback loops that govern present and future actions according to a past set of meanings (i.e. a given field of learning)."[17] Human beings, just as computers, learn how to behave by using their past experiences to judge a situation. If they make a mistake, they can change their behavior the next time. In that context language, as feedback loop of interaction and learning,

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[12] Wiener, *Cybernetics*, 56-57ff.
[13] Ludwig von Bertalanffy, *General System Theory: Foundations, Development, Applications* ([1968] Reprint, New York: George Braziller, 2009), 39.
[14] Wiener, *Cybernetics*, 58.
[15] Bertalanffy, 162.
[16] Wiener, *Cybernetics*, 113.
[17] David Tomas, "Feedback and Cybernetics: Reimagining the Body in the Age of Cybernetics," in *Cyberspace/Cyberbodies/Cyberpunk: Cultures of Technological Embodiment*, ed. Roger Burrows and Mike Featherstone (London: Sage, 2000), 28.

becomes a means of control which is centrally discussed in cybernetic fiction. Some writers picked up on Wiener's ideas, like Thomas Pynchon, whose writing is defined by entropy, Maxwell's demon, and information and communication. He already used "the concepts emerging from cybernetics"[18] as early as 1957 in his short story "Entropy."[19]

b. *The Human Use of Human Beings* (1950)

While *Cybernetics* offers the technical context from which to extract ideas about society, *The Human Use of Human Beings* tries right out to discuss the "cosmic significance"[20] which N. Katherine Hayles mentioned. Wiener starts off in his first chapter "Cybernetics and History" writing that "[it] is the thesis of this book that society can only be understood through a study of the messages and the communication facilities which belong to it."[21] The message then takes a central role in Wiener's discussion of language and communication. For cybernetic fiction it is important that according to Wiener, language is "in one sense another name for communication itself, as well as a word used to describe the codes through which communication takes place."[22] The coded messages of communication systems, according to Wiener, have to be interpreted on three different levels: a phonetic level of acoustic understanding, a semantic level of understanding content, and a "behavioral level" of reacting to those messages[23]. Drawing on ideas from his earlier work, he then connects language with the concept of entropy, since it "may strive simply against nature's tendency to confuse it or against willful human attempts to subvert its meaning."[24] However, Wiener also warns that fighting entropy through language or other means is no guarantee for success in the changing environment that cybernetics helped establish in the post-war world:

> We have modified our environment so radically that we must now modify ourselves in order to exist in this new environment. […] Progress imposes not only new possibilities for the future but new restrictions. It seems almost as if progress itself and our fight against the increase of entropy intrinsically must end in the downhill path from which we are trying to escape.[25]

Now, in an era that in terms of scientific developments was defined by the space race and concluded its list of achievements in 1969 with the moon landing, this notion of progress seems to be quite positive. But it was also the age of the atomic bomb; and the threat of annihilation was a form of progress that rather promised steep decline and stable death.

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[18] Porush, 118.

[19] Thomas Pynchon, "Entropy," in: *Slow Learner: Early Stories*, ([1984] Ninth reprint, New York: Little Brown and Company, 1998), 79-98.

[20] Hayles, 7.

[21] Wiener, *The Human Use of Human Beings*, 16.

[22] Ibid., 74.

[23] Ibid., 79-81.

[24] Ibid., 93.

[25] Ibid., 46-47.

2. The Anxiety of Cybernetics in the Age of Cold War

Cybernetics, as defined by Norbert Wiener, talks about communication, about control, and about how this methodology would change the field which it was exploring. Interestingly enough, the general idea of cybernetics did not spread to the USSR before the translation of Wiener's two books on the topic in 1958.[26] By the time the decade of the 1960s began, the notion of communication and control in feedback loops had emanated throughout the world. As mentioned before, many 1960s writers of American Literature picked up those ideas in a Cold War context of paranoia. As a consequence they often ignored the fact that "[the] threat does not inhere in the apparatus itself; [because] technology is neutral,"[27] especially those apocalyptic visions which Wiener warned about as "the downhill path from which we are trying to escape"[28] were discussed in fiction. Again, Wiener offers an explanation why this anxiety comes to mind most prominently next to all positive potential of the field:

> [The] enemy may be Russia at the present moment, but it is even more the reflection of ourselves in a mirage. To defend ourselves against this phantom, we must look to new scientific measures, each more terrible than the last. There is no end to this vast apocalyptic spiral.[29]

Here, Wiener is almost anticipating the nature of the Cold War rivalry that made the 1960s reception of cybernetic ideas possible while offering an explanation of why this instills fear in human beings. In the face of this existential angst of being crushed by a 'system' that is of our own doing, cybernetic fiction constitutes an effort to make sense of the "primary weapons of the Cold War [which] were ideologies, alliances, advisors, foreign aid, national prestige—and above and behind them all, the juggernaut of high technology,"[30] as Paul N. Edwards puts it in the preface of his book *The Closed World: Computers and the Politics of Discourse in Cold War America*. Behind all of this is ultimately what David Porush calls "anti-tech" writing[31]. In the same line of reasoning he states that even anti-tech authors "do not envisage the machine as an unmitigated evil. [They] saw that human self-determination has a tragic tendency to yield to the power and allure of technical means and control."[32] This is central to the following discussion of Burroughs and Vonnegut in respect to whether the two novels try to resist or submit to a repressive idea of the state and the resulting fear of control.

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[26] Maxim W. Mikulak, "Cybernetics and Marxism-Leninism," in *The Social Impact of Cybernetics*, ed. Charles Dechert (Notre Dame, IN: University of Notre Dame Press, 1966), 130.
[27] Hyman G. Rickover, "A Humanistic Technology," in *The Social Impact of Cybernetics*, ed. Charles Dechert (Notre Dame, IN: University of Notre Dame Press, 1966), 109.
[28] Wiener, *The Human Use of Human Beings*, 46-47.
[29] Ibid., 128.
[30] Edwards, "Preface," in *The Closed World*, ix.
[31] Porush, 13.
[32] Ibid.

B. William S. Burroughs' *Nova Express* (1964)

Exemplary among cybernetic novelists in the 1960s is William S. Burroughs who was concerned with ideas of control, communication, and with the question of how to break free of the system of control which he perceived society to be. His books, especially *Nova Express*, thus carry what David Porush calls an "apocalyptic mythology, [in which] the soft machine is the pure end-product of control by some malicious and all-powerful conspiracy of government, media, and […] 'the Nova Police.'"[33] Porush confuses the Nova Police with Burroughs' "Nova mob."[34] The latter are, as Porush then writes, "not only human villains […], but extraterrestrial viruses capable of using man's needs."[35] Here, the fear of control can already be identified as a central aspect of Burroughs' fiction. With the images used in *Nova Express* he manages to portray the intense atmosphere of an overwhelming system in which man is caught without a chance to escape or to be aware of it. He describes a dystopian vision that fits well with a Cold War context in which computer technology seemed to control life in more profound ways than most people realized:

> He set up screens on the walls of his bars opposite mirrors and took and projected at arbitrary intervals shifted from one bar to the other mixing Western Gangsters films of all time and places with word and image of the people in his cafés and on the streets his agents with movie camera and telescope lens poured images of the city back into his projector and camera array and nobody knew whether he was in a Western movie in Hongkong or The Aztec Empire in Ancient Rome or Suburban America.[36]

> In terms of time and space, history gets mixed up by the media. Words and images which seemed to be capable of conveying meaning are lost in utter confusion while screens are ubiquitous. Nobody knows where they are or what they are really doing anymore. In interviews, such as those conducted by James Odier and collected in *The Job: Interviews with William S. Burroughs*, the writer often underscored the notion of a dystopian and "apocalyptic mythology" in his writing. Asked whether free men existed in his books, he replied:

> Free men don't exist in anyone's books, because they are the author's creations. I would say that free men don't exist on this planet at this time, because they don't exist in human bodies. By the mere fact of being in a human body you're controlled by all sorts of biologic and environmental necessities.[37]

This quote illustrates the notion of control through communication and language as well as the fact that human beings are dependent on a vast number of outside factors. The idea of control and the fear of being controlled by words and images will now be discussed further.

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[33] Porush, 99.
[34] Burroughs, 55.
[35] Porush, 100.
[36] Burroughs, 148.
[37] James Odier, *The Job: Interviews with William S. Burroughs*, (London: Jonathan Cape Ltd., 1970), 22.

1. The Word Virus

One of the most concise sentences in *Nova Express* is "Word begets image and image *is* virus—."[38] It sums up in a few words what Burroughs' idea of language and hence communication is: In his Nova trilogy, it constitutes a means of control that will not be perceived as such by the vast majority of people. Word as a *signifier* will give you an image, the according *signified*. But what is new is the point he makes in this sentence. The idea of the "*Word Virus*."[39] Words and images are contagious, they can fill up minds, occupy them, change their personality. In his essay "Can You See a Virus? The Queer Cold War of William Burroughs" Oliver Harris, for example, reasons along the same lines:

> Burroughs' understanding of language as a viral force identifies him as one of the major imaginative investigators of cybernetic communication systems, a writer whose cut-up Nova trilogy of the 1960s can be seen as early research into the word and image electronic culture of postmodernity.[40]

This "viral force" is represented by the Nova Mob in *Nova Express*. Their viral crime syndicate plans to use image and word for their own manipulative purposes when they contrive their scheme: "This virus released upon the world would infect the entire population and turn them into our replicas, it was not safe to release the virus until we could be sure that the last group would not notice."[41] The threat discussed in Burroughs book can certainly be linked to the basic psychological phenomenon of the Cold War era: paranoia. David Porush contends that "Cybernetics and paranoia are naturally linked at the most general level because the first threatens to and the second is threatened by control through forces beyond the power of the individual."[42] The problem Burroughs faces in his writing is the paradox that in order to write against the system of language he has to adhere to it himself. Hence David Porush writes that "[for] 'system' Burroughs reads 'cybernetic control,' of which language is the most insidious instrument, because it is most intimately a part of us. At the same time, paradoxically, language is the only instrument we have to resist this control-by-system."[43] To resist this "virus word"[44] among other things, Burroughs uses his cut-up method of cutting and rearranging text to destroy any frame of reference and to "bring down word image."[45] As Nathan Moore puts it in his essay "Nova Law: William S. Burroughs and the Logic of

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[38] Burroughs, 48.

[39] Ira Silverberg, "Editor's Preface," in: *Word Virus: The William S. Burroughs Reader*, (ed.) James Grauerholz and Ira Silverberg (New York: Grove Press, 1998), xiii.

[40] Oliver Harris,. "Can You See a Virus? The Queer Cold War of William Burroughs," *Journal of American Studies* 33 (1999), http://www.jstor.org/stable/27556645: 247.

[41] Burroughs, 49.

[42] Porush, 85.

[43] Ibid., 101.

[44] Burroughs, 73.

[45] Ibid., 73.

Control," this means "[to] cut-up is to make explicit the veil of the word; but, to cut is not reveal—it is to act."[46] The cut-up is Burroughs final act of resistance against fear and control, his deconstruction of texts in general that is meant to shatter the system. Thus, his metaphor of the word as virus also has to be read as a broader statement on human society outside of any ideological context. It is a threat to every single human being.

2. Inoculation against the Hardness of the Machine

Similarly, the idea of the hard machine can be derived from the sentence about word and image: "It is simply a question of putting through an inoculation program in the very limited time that remains—Word begets image and image *is* virus—."[47] The only way of preparing for what the book calls "nova heat,"[48] comparable to heat death and what Wiener described as a stable state of death,[49] is the Nova Police. As opposed to the repressive idea of human police, the Nova Police is compared to apomorphine, a substance that is allegedly a cure for drug addiction. Burroughs' idea is that the

> Nova Police can be compared to apomorphine, a regulating instance that need not continue and has no intention of continuing after its work is done. Any man who is doing a job is working to make himself obsolete.[50]

> Much like the paradox mentioned before, this shows how you have to use the system of discourse that you are caught up in to fight against its injustices and its control. Burroughs' works, in that sense, are

> not so much methods for creating and engendering as they are a sort of underground resistance, a disarming of the control implied in any order, any system, including language's natural one, from within. This tactic, of self-inoculation against the disease of determinism, is the tactic of all cybernetic fiction.[51]

Again the idea of determinism and machinery that gets linked directly to cybernetic fiction can be read in a Cold War context. Published a year after the Cuban missile crisis, *Nova Express* was not only influenced by cybernetic ideas from the 1940s and 50s; it was also a child of the atomic bomb and what many people perceived as a determined annihilation by the atomic bomb and the system.

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[46] Nathan Moore, "Nova Law: William S. Burroughs and the Logic of Control," *Law and Literature* 19 (2007), http://www.jstor.org/stable/10.1525/lal.2007.19.3.435: 437.
[47] Burroughs, 48.
[48] Ibid., 12.
[49] Wiener, *Cybernetics*, 58.
[50] Burroughs, 51.
[51] Porush, 104.

C. Kurt Vonnegut's *Slaughterhouse Five* (1969)

Compared to William S. Burroughs' cut-up fiction of the Nova trilogy, the novels of Kurt Vonnegut seem much less experimental. Vonnegut's famous classic *Slaughterhouse Five* is a book based on his experiences during World War II where, as a prisoner of war, he witnessed the fire-bombing of Dresden. On a closer look, however, it becomes evident that the novel is quite complicated, especially in terms of plot structure. David Porush writes in *The Soft Machine* about Vonnegut's style that he

> does not manipulate the very act of fictional communication itself, nor explore language, as tacit ways of eluding the control over communication proposed by cybernetics until his later novel *Slaughterhouse Five* (1969), where he experiments with the structure of novelistic presentation.[52]

What Porush is referring to here, is the fact that in *Slaughterhouse Five* Vonnegut uses a rather diachronic style of narration. He breaks the main plot line of his protagonist Billy Pilgrim repeatedly by traveling back and forth through time in Billy's memory. Plot and structure thus become tightly connected. They constitute the author's attempt to address a historical issue that was only then starting to be discussed in American public discourse: the destruction of Dresden. Jerome Klinkowitz, for example, states in his book *Kurt Vonnegut's America* that before 1969 the USA were not ready for a story about the destruction of Dresden and the miserable soldier Billy Pilgrim or "[in] other words the 1960s had to happen."[53] The alternative title of the book, "The Children's Crusade: A Duty Dance with Death,"[54] already hints at why this book can be considered cybernetic fiction: it is concerned with entropy and death, this time in connection with a clear humanist agenda that warns against a war machine which will not flinch from sacrificing the children of its own nation. In the decade of the Cold War, with the memory of a World War II still fresh, the book constitutes a fair warning not to let such carnage happen again. The connection of humanist ideals and cybernetics can already be found in Norbert Wiener and, as David Porush reminds his readers, "Vonnegut's earliest novels hint strongly at his familiarity with Wiener's work […], which shows his concern for the social implications of automation, the replacement of humans with machines."[55]

So, while the plot of *Slaughterhouse Five* aligns it firmly with the tradition of war novels, its poetics link it to a more experimental style used in the Sixties. The novel is a statement on the relation between writing and writer in terms of a feedback loop system that defines how humans perceive their environment and how they react to it. The novel starts

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[52] Porush, 86.
[53] Jerome Klinkowitz, *Kurt Vonnegut's America* (Columbia, SC: University of South Carolina Press, 2010), 41.
[54] Vonnegut, *Slaughterhouse Five*, "Title Page".
[55] Porush, 86.

with Vonnegut visiting an old friend from the war, Bernard V. O'Hare. While talking to his friend, Vonnegut wonders why O'Hare's wife seems to carry a grudge against him. When she accuses Vonnegut of writing a book that will glorify the war, he realizes that she is just afraid for her children. It is after all the time of the Vietnam War. He then promises her to call the book "The Children's Crusade."[56] This is also where the metaphor of the machine comes into play: Just as the quote by Charlie Chaplin, mentioned earlier, talks of "machine men, with machine minds, and machine hearts,"[57] Vonnegut criticizes the cybernetic Cold War machine mentality for showing similar inhumane traits. The best example is the introduction of the fictional writer Kilgore Trout, a recurring character in Vonnegut's novels. One of Trout's books, *The Gutless Wonder* is described and it is apparent that it is a critique of the Vietnam War, the use of napalm and the mentality soldiers are trained to adapt:

> It was dropped on them from airplanes. Robots did the dropping. They had no conscience, and no circuits which would allow them to imagine what was happening to the people on the ground.
> Trout's leading robot looked like a human being, and could talk and dance and so on, and go out with girls. And nobody held it against him that he dropped jellied gasoline on people. But they found his halitosis unforgivable. But then he cleared that up, and he was welcomed to the human race.[58]

This is a poignant critique of the war machine, for which many other examples can be found – like the prisoner of war trains where "each car became a single organism which ate and drank and excreted."[59] However, it takes on a cynical note in view of Billy Pilgrim's lethargic attitude towards life. Billy is plagued by constant time shifts which paint a very controlled and deterministic image of life. In addition, the constant repetition of the phrase "So it goes"[60] also underscores this notion. The whole book thus becomes an analogy of the Cold War since, as Paul Edward puts it in his description of the computerized military procedures of the time,

> [as] metaphors, such systems constituted a dome of global technological oversight, a *closed world*, within which every event was interpreted as part of a titanic struggle between the superpowers.[61]

Vonnegut sees and describes this system of war machinery and the social and political system of which it is a part, but his conclusion seems to be that man will always be caught up in this system once it gets moving. But mankind is not only caught in the system of the war machine, it is also caught in time and space. Similarly, Billy Pilgrim, and every other literary

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[56] Vonnegut, *Slaughterhouse Five*, 12-15.
[57] Chaplin, "Chapter 20."
[58] Vonnegut, *Slaughterhouse Five*, 168.
[59] Ibid., 70.
[60] Ibid., 21.
[61] Paul N. Edwards, 1.

protagonist, is subject to the structure of a novel's plot. In several parts of the novel Vonnegut even identifies a character in Billy Pilgrim's story as the writer's past self: "That was I. That was me. That was the author of this book."[62] The fact that this novel is so plot-driven underscores the notion of the characters being controlled by a language system which the writer creates. Writing about Vonnegut's *The Sirens of Titans* (1959), David Porush quotes a passage from the book in which an alien species, like the one that also plays a big role in *Slaughterhouse Five*, reveals that man is merely an organic message for a stranded member of their race. This sentence could also have been taken from Vonnegut's 1969 war memory book: "'The wonder is,' he remarks, 'that Earthlings have made as much sense as they have.'"[63] The outlook on life that Vonnegut offers in his writing is everything else than bright. It sounds more like what can be read in a frame on the wall of Billy Pilgrim's office, namely that we have to accept the things we cannot change and change the things we can, while always knowing the difference.[64] *Slaughterhouse Five* is a strong antiwar book, but it leaves the reader with the bleak notion that war is an unavoidable mistake which mankind is bound to repeat. This is exactly why every attempt at making sense of it is doomed to fail. In cybernetic fiction "the notion of a governor, an author […] or a feedback device which monitors the internal states of a machine with respect to its 'desired' state"[65] is deeply ingrained. But some episodes in the novel, like the story of the high school teacher Edgar Derby who is shot for taking a teapot from the ruins of Dresden,[66] seem to underscore the notion that there can be no operator who would allow such senseless acts. The story of Billy Pilgrim who "has come unstuck in time"[67] breaks the chronology of the narrative to repeat different overlapping scenes from his memory. But when one of those motives recurs, like a barking dog[68] or the smell of corpses[69], it does not change anything. It is a feedback loop of history that fails to establish a learning process and is cursed to endlessly repeat itself. Taking into account the epigraph of the book, this repetition takes on a bitter note: "The cattle are lowing, / The Baby awakes. / But the little Lord Jesus / No crying He makes." In the slaughterhouse which is the world, the suffering of war does not seem to urge God to act.

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[62] Vonnegut, *Slaughterhouse Five*, 125.
[63] Kurt Vonnegut, *The Sirens of Titan*, ([1959] London: Golancz, 1999), in: *The Soft Machine: Cybernetic Fiction*, David Porush (New York: Methuen, 1985), 94.
[64] Vonnegut, *Slaughterhouse Five*, 60.
[65] Porush, 21.
[66] Vonnegut, *Slaughterhouse Five*, 214.
[67] Ibid., 23.
[68] Ibid., 48.
[69] Ibid., 214.

D. Where the Fear comes from: Machine and Metaphor in a Cold War Context

To conclude the discussion of the notion of fear and control in the cybernetic fiction of the 1960s, there are several authors who offer further reading on the topic. David Porush, who was quoted at length in this paper, talks explicitly about this existential angst of man in his first chapter "The Metaphor of the Machine."[70] At the very beginning he proclaims that "[we] live not in an information age but a cybernetic one". His first examples come from the everyday life of the mid-1980s: game arcades and punks; in these game halls as well as the style of this counterculture he sees the "technological fears and dreams of an earlier generation, expressed in metaphor, prophecy and fiction, [...] here incarnated in the *style* of a later one."[71] He repeatedly mentions the fear of technology taking over or rather overtaking us, fears that are "apparently confirmed and multiplied with the growth of our technology."[72]

Others, like for example Paul N. Edwards, describe cybernetics as linked to their idea of a "closed-world discourse" in which "[containment], with its image of an enclosed space surrounded and sealed by American power, was the central metaphor."[73] However, Edwards and some of the authors he quotes, especially Thomas J. Misa and his essay "How Machines Make History, and How Historians (And Others) Help Them to Do So,"[74] take up a notion of the machine that Ulric Neisser calls "the classical notion of a machine [which] includes both activity and a kind of passivity."[75] But the threat discussed by authors of cybernetic fiction was rather one defined by the notion of the machine as something that could intellectually and actively overtake man. For Porush this constitutes

> the revolutionary point of departure for cybernetic fiction: what should literature look like in an age when machines are capable of outstripping certain human mental operations by unimaginable distances and whose limitations are unknown, perhaps non-existent?[76]

In cybernetic fiction of the 1960s the fear of control, exercised by a system which might easily crush the individual, was probably the most central motive. The fear was caused by the notion that the system was an early evolutionary stage of an intelligent machine. Cybernetic fiction did not only fight a repressive idea of the state. It struggled with the possibility that a system could become capable of overtaking human life in terms of intellect or creativity.

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[70] Porush, "The Metaphor of the Machine," in *The Soft Machine: Cybernetic Fiction*, (New York: Methuen, 1985), 1-23.

[71] Porush, 1.

[72] Ibid., 3.

[73] Edwards, 8.

[74] Thomas J. Misa, "How Machines Make History, and How Historians (And Others) Help Them to Do So," *Science, Technology, & Human Values* 13/3 (1988), http://www.jstor.org/stable/689938: 308-331.

[75] Neisser, 73.

[76] Porush, 14.

III. Conclusion: Fear of Control – Resistance and Submission in Cybernetic Fiction

Cybernetic fiction from the 1960s was often as paranoid as the times of its inception and just about as paranoid as the times in which the first books of the genre were published. Novels like William S. Burroughs' *Nova Express* or Kurt Vonnegut's *Slaughterhouse Five* were concerned with the paranoid fear of 'the system.' What made cybernetic fiction so unique in that context was that it used the ideas of feedback loops, control, and communication to criticize its Cold War environment, defined by the atomic bomb and the policy of containment. As in the case of *Slaughterhouse Five*, the Vietnam War was often a point of critique that many authors referred to. Here the difference between the discussed novels becomes apparent: Burroughs talks more explicitly about language as a medium of communication and control that can be used by unseen forces to control human beings. His answer is the cut-up method that serves the purpose of using the system to undermine the control that can be exerted through language. Vonnegut takes a completely different stance. His voice is merely a warning that takes on a Cassandra notion of futility in the face of man's endless repetition of the same mistakes. This is not to say that Vonnegut was being more cynical than Burroughs. They differ in their approach: Burroughs can be read as a creative resistance against a functionalist and repressive idea of the state that facilitates an image of cybernetics as a question of control. In contrast, Vonnegut's antiwar book describes a state controlled war machine which even in the Cold War era still produces machine men. But despite having an agenda to demonstrate how cruel and senseless war is, he turns it into a submission to the system. There is nothing the individual can do. All that the machine needs to do is function and run smoothly. The governor of the system, God, is to blame while man is merely caught in a deterministic plot. Vonnegut's point, however, is that such a war machine has existed, still exists, and always will exist, while this still does not mean the machinery should be accepted as something unchangeable.

Cybernetic fiction indeed constituted an effort to make sense of the Cold War and overly powerful systems through the metaphor of the machine. But while Burroughs chose a writing of creative resistance, others like Vonnegut performed voluntary acts of submission to expose how inhumane the system is and that it needs to be changed. In both cases, the fact that even writing against the system leaves the reader within the same historical context and an identical discourse, shows how in the end cybernetic fiction, like all literature, be it subversive or submissive, can only raise awareness. A word can advertise change, but it needs somebody to implement it.

So it goes.

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