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Enter the Cut-up Matrix: Some notes on Man and machines in the (Swedish) 1960's

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Abstract

This essay, focusing on a slice of Swedish prose fiction from the 1960-70's, raises some questions concerning the artificial subject, along with discussions of game theory and automation. Torsten Ekbom's "strategic model theatre" *Spelmatriser för Operation Albatross* [1966; Game Matrices for Operation Albatross] is the main object of study. The (often very bizarre) text fragments in this book are, fictionally, generated by a number of computers. The figures acting in this game are devoid of skeletons; they are merely bodies of information, produced by machines. In dialogue with (among others) Norbert Wiener, Lewis Mumford, John von Neumann and Marshall McLuhan, Ekbom's text is found to illustrate a broader context of cybernetics and subjectivity in the 1960's. Finally, by using the shift of epistemological dominant (described by N. Katherine Hayles) from "presence-absence" to "pattern-randomness", Ekbom's *Game Matrices for Operation Albatross* finds itself in an historically interesting intersection of subjectivity: the life of Man in the 1960's is becoming increasingly "coded" and "randomized", while the computer is still that huge Machine, not yet, as today, the subconscious of everyday life.

The human use of characters

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; and that in the future development of these messages and communication facilities, messages between man and machines, between machines and man, and between machine and machine, are destined to play an ever increasing part. (Wiener 1954, p. 16)

The above quote, taken from Norbert Wiener's popular introduction to cybernetics, *The Human Use of Human Beings*, is an excellent point of departure for a discussion on relations between the human subject and the computer. Phrased as early as 1950, Wiener here sets the agenda for communication studies – one decade later constructively exploited by Marshall McLuhan – as well as the investigation in human relations – a branch of anthropology undertaken by for example Gregory Bateson and Niclas Luhmann. Wiener's emphasis is on the exchange of *information*, and how we "in the future" (now, that is) will be even more concerned with the study of messages between man and machine; and even between "machine and machine".

There is a striking resemblance between the human subject outlined by Wiener, and the digital creatures operating in different kinds of computer games: all of them consist mostly (some of them only) of *information*. Wiener's description from 1950 could be an instruction for any adventure or action game:

> [T]o be alive is to participate in a continuous stream of influences from the outer world and acts on the outer world, in which we are merely the transitional stage. In the figurative sense, to be alive to what is happening in the world, means to participate in a continual development of knowledge and its unhampered exchange. (Wiener 1954, p. 122)

The study of computer games, and especially computer game *characters*, as bodies of information is a thrilling concept, yet to be further explored. What happens to subjectivity and agency when "you" or the "protagonist" consist of zeroes and ones? How much of the character is indeed reinforced by the player, etc.? Inspiring as this may seem I will, in this short paper, turn my attention to the human-computer interaction in the literature of the 1960's. More precisely I will focus a Swedish prose experiment from 1966, a "strategic model theatre", actually staging a "war game" generated by computers.

What's wrong with Billy Spafon?

> Billy Spafon nodded thoughtfully and protruded his lips. – Contact WCR and then try to get them in on the radar, he said and put up a surprised face. (Ekbom 1966, p. 171, my transl.)

There is something strange with Billy: "protruding his lips", and then to "put up a surprised face". Somehow he's not mimetic, he seems to be more of a combined figure, something made of Lego, or rather a Ken doll with too many attributes.

In fact, reality is excluded from the representational universe – the diegesis – of Torsten Ekbom's "Game Matrixes for Operation Albatross" (*Spelmatriser för operation Albatross*, 1966). Characters without life carry out the actions described within this "Strategic Model Theatre". They are computer-generated, and their doings are determined by the outcome of the games produced by the machine. The agents, spies, adventurers and other actors operating in the book, are not only generated by the fiction at hand, but also actually a construction of other texts. Billy Spafon, Tug, Max Grindler, admiral Oldendorf, Stella Carstairs, Betty, Karlsson and the others are apparently the result of cut-ups from other stories (gathered from adventure books like *Biggles*, as well as MAD parodies of the same kind of stories). Moreover, the non-living actors in this war game to a considerable degree stumble across (or search for) black boxes, some of them labeled "THE ANTROPHOS COMPANY".

So then, this work of literature, which is not a "novel" but a "Strategic Model Theatre" – what kind of text is it? Torsten Ekbom was one of the leading avant-garde authors and literary critics of his generation, from the outset of the 1960's obviously inspired by the French "nouveau roman" and concrete poetry. From the mid-60's Ekbom also would acknowledge influences from new technology, Marshall McLuhan, media philosophy, game theory, and the aesthetics of the American underground – including The Fugs, Susan Sontag, William S. Burroughs and the Marvel Comics.

"Game Matrixes for Operation Albatross" is actually a representation of a computer game, and just like the characters in a modern game – a Laura Croft, a Super Mario – the characters in Ekbom's book consist merely of information, they are "cut-up" characters, gathered and spliced together from other texts.

The point of departure in the following discussion, then, is what aspects of man-machine relations could be derived from a Swedish work of fiction from the 1960's that actually is a "staging" of a computerized game. The function of the computer game in Ekbom's novel seems to be to highlight a discussion of subjectivity and automation, as well as the increasing impersonality of the strategic discourse fostered by the use of game theory in warfare. Anatol Rapoport's book *Strategy and Conscience* (1964), on RAND Corporation and their use of game theory was on the agenda even in Sweden.

With leading theorists as Manuel Castells and Jean Baudrillard, the discussion today on man-machine interaction – beside studies in games and hypertexts – is mainly concerned with the socio-psychological and practical effects (and, with the "Y2K" hubbub, even an apocalyptic aspect) of computers on our everyday life. In the 1960's, however, the focus were rather on the machine as automata, or the computer as a non-personal, anti-individual tool for control. In alliance with this discussion was game theory, introduced by John von Neumann in the 1930's, but intensely debated in the 1960's.

The main use of the computer in the 1960's was of course in military research and governmental or (big) company administration, and the fact that in those days the computer indeed was a MACHINE, big as a room, of course comes in to play, when associating the computer with control and power. The desk computer was a fairly unusual device (even in the high-tech James Bond movies, way into the 70's, you see them huge machines in large rooms, spinning their magnetic tape rolls...). Quite a few futurologists indeed anticipated the day, not to far away, when we will be doing shopping and banking transactions from home, and sending electronic mail; they also foresaw the use of small domestic robots, doing the cleaning, vacuuming, and the dishes (with some striking precision, the robot was expected to handle all those things the male partner should be forced to do, should this "feminism" indeed make some progress...).

Automation

The discussion on automation was since the 1950's divided into two camps. One argument, put forward by Lewis Mumford, among others, was that computers and automata would enslave end de-humanize society, and Charlie Chaplin's *Modern Times* could be seen as an early warning. The other side could argue that the same Chaplin picture showed exactly what Man should be *liberated* from if *automation* replaced *mechanization*, the latter being the result of the industrialization and the Taylorism of the 19th century. Automation and industrial robots, then, should make possible the *elimination* of de-humanizing industrial labor.

To further elaborate on these two standpoints, let's take a look at some arguments brought forward by the above-mentioned media and technology debaters of the time, Lewis Mumford, Marshall McLuhan and Sir Leon Bagrit. Mumford, taking the position of a traditional humanist, in his monumental *The Myth of the Machine* (1970) argues that automation means the end of the dialogue between humans and their surroundings. Not only physically but mentally Man is enslaved by automation:

> Once automatic control is installed one cannot refuse to accept its instructions, or insert new ones, for theoretically the machine cannot allow anyone to deviate from its own perfect standards. And this brings us at once to the most radical defect in every automated system: for its smooth operation this under-dimensioned system requires equally under-dimensioned men, whose values are those needed for the operation and the continued expansion for the system itself. The minds that are so conditioned are incapable of imagining any alternatives. Having opted for automation, they are committed to

> flouting any subjective reaction and to wiping out human autonomy – or indeed any organic process that does not accept the system's peculiar limitations. (Mumford 1971, p. 183 f.)

In Mumford's nightmare, Man is nothing but a part of the machine, the automata is seen as a threat to human agency and autonomy.

Marshall McLuhan, in *Understanding Media. The Extensions of Man* (1964) doesn't really contradict this view on Man as a part of the machinery, but he sees it from a more optimistic point of view:

> Physiologically, man in the normal use of technology (or his variously extended body) is perpetually modified by it and in turn finds ever new ways of modifying his technology. Man becomes, as it were, the sex organs of the machine world, as the bee of the plant world, enabling it to fecundate and to evolve ever new forms. The machine world reciprocates man's love by expediting his wishes and desires, namely, in providing him with wealth. One of the merits of motivation research has been the revelation of man's sex relation to the motorcar. (McLuhan 2001, p. 51)

It's an almost idyllic atmosphere, where humans function like a bee in the garden of technological environment. For McLuhan, automation indeed fosters a new**,** but not necessarily a lesser, way of thinking. The linear, mechanized way of structuring our perception gives way for the momentum enhanced by the principles of automation.

Even more enthusiastic is Sir Leon Bagrit, who 1964 in a string of lectures (for BBC) insists that automation "is the exact opposite of mechanization. The man in charge extends his faculties but remains himself" (Bagrit 1964, p. 17). (It is worth noticing that neither McLuhan nor Bagrit fully recognize Man as an open structure, or a cyborg – for them the technologies are tools, not prostheses, and while functioning in an intimate relationship with Man these tools will still be something separated from the body.)

Game Theory

When "games" were discussed in relation to computers in the 1960's it was mostly within the field of game theory. Game theory was introduced by John von Neumann as early 1928, but more explicitly by von Neumann and Oscar Morgenstern in their book *Theory of Games and Economic Behavior* 1944. A "game" was taken to be almost every social situation where two or more interests were confronting each other. In *Prisoner's Dilemma. John von Neumann, Game Theory, and the Puzzle of the Bomb* William Poundstone notes:

> As von Neumann used the term, a "game" is a conflict situation where one must make a choice knowing that others are making choices too, and the outcome of the conflict will be determined in some prescribed way by all the choices made. (Poundstone 1992, p. 6)

The traditional model for this type of game is, of course, chess. von Neumann's models could also be traced back to the Prussian "Kriegspiel" of the 19th century. The aim of game theory, then, is to establish abstract systems whereby alternatives could be sorted out for a rational decision. Poundstone again:

Game theory is a study of conflict between thoughtful and potentially deceitful opponents. This may make it sound like game theory is a branch of psychology rather than mathematics. Not so: because the players are assumed to be perfectly rational, game theory admits of precise analysis. Game theory is therefore a rigorous branch of mathematical logic that underlies real conflicts among (*not* always rational) humans. (Poundstone 1992, p. 6)

From a more critical point of view, the cybernetic anthropologist Gregory Bateson discusses this aspect of game theory:

> By definition, the "player" is capable of all computations necessary to solve whatever problems the events of the game may present; he is incapable of not performing these computations whenever they are appropriate; he always obeys the findings of his computations. Such a "player" receives information from the events of the game and acts appropriately upon that information. (Bateson 2000, p. 284)

This is a pretty harsh description of Man. At the same time there is something deeply *humane* in this, and many of our everyday situations and decisions could be described in the language of game theory (this is of course one cornerstone in the economical theories of John Nash, whose story is told in *A Beautiful Mind*).

The limitations and challenges of game theory indeed became a source of inspiration for a lot of Swedish artists and writers, Torsten Ekbom among them, but also Öyvind Fahlström, Åke Hodell, Mats G. Bengtsson and Leif Nylén.

Enter the game

> Cybernetic fiction presents itself as a machine, but only ironically, for underneath the mask lies the softness, vulnerability and instability of our humanness. (David Porush 1985, p. 19)

"The game" in Ekbom's book consists of two rival parties, War Command Red and War Command Blue. The computers (yes, there are quite a few of these monsters – UNIVAC, ENIAC, MANIAC, CAGE IV, etc) generate "the game matrixes", a simple yet complex system of squares and numbers, situated in beginning of the 14 "Scenarios" in the book. These matrixes are analyzed, producing some "key numbers" which designate the action in accordance with a "dossier" at the end of the book: "The analysis show a saddle point in the intersection for Blue 3 and Red 4. The game value is thus 1, generating Markov Chains of the Blue 3 and Red 4 strategies". (It is beyond the scope of this essay to elaborate on the relations between game theory and "dossier", but somehow the game "works" – though as an already finished game, as for example the notes from a game of chess).

The body of text in Ekbom's book is, as already noted, a cut-up, a collage mostly from adventure books, but also from an old travel book *Around the world on bicycle* 1899, and some philosophical quote from (among others) Ludwig Wittgenstein's *Tractatus Logico-Philosophicus*. Every "scenario" contain some chapters, with headings like "A cold swim"; "With the back against the wall"; "Blotto Otto hit on an idea", or even "Chief Commander Rifcowitz picks a lemon".

As noted above, one recurring motif in this "Strategic Model Theatre" is the search for black boxes. In communication theory, the "black box" designates an object of which we know its input and output, but not what's going on between them. This makes for an interesting reflection: The setting of the "Strategic Model Theatre" is about a couple of computers designated to generate a game on the struggle between Blue and Red. In this game the generated participants are involved in search of what's going on between input and output; this secret is hidden in black boxes, some of which are labeled "the company of humanity" (antrophos). This is clearly a loop, since what's going on between input and output are precisely the actions of the textual actors themselves. Put in another way: The strategists have constructed a war game in which the computer generates a plot where it actually searches for the secret within itself ("itself" here ambiguously being either the computer or the game plot); the black box, the secret making input to output is: *antrophos*. In the heart of the machine – the human being. To elaborate on the Porush quote above, in Ekbom's book the "humanness" is not so much "underneath" as *inside*, thus making no clear distinction between technology and human beings, no one is hidden "under" the mask of the machine. *Ecce Post Homo*.

This evokes Lars Gustafsson's lecture on his own poem "The Machines":

> My poem ["The Machines"] emanates from the assumption that the community is established once and for all, and that the community in its essence is something impersonal. And it takes comfort in this fact.
>
> You might say this is a community between marionette's simulating lives, but that's the condition of the community, and it is time we wake up from our metaphysical sleep, and take notice of that. A strange community – deep inside the mechanics, but nevertheless: a community, an intimacy. (Gustafsson 1969, p. 41, my transl.)

I will not further elaborate on Ekbom's complex (and actually really funny) book. "Game Matrixes for Operation Albatross" is an extreme literary installation, arguably the "non plus ultra" of Swedish avant-garde literature. The points to further reflect on, though, are what aspects of human agency are discussed in the book. The Cold War madness, of course, but from a Man-Machine point of view the issues brought forward concern a) automation – the "human beings" normally (re)presented in a literary text are replaced by machine produced characters; b) game theory – the actions that take place are strongly connected to the theory of games – indeed the characters are participants in a huge "model theatre".

As stated above, the text calls the demarcation line between man and artifact into question. This is true, yet not really true. The intimacy of today (2003) between Man and computer, and the fact that there's a computer chip in virtually every technological artifact around us, was not at hand in 1966. Thus, while Ekbom (and, for that matter, a Burroughs or a P K Dick) illustrates an ambivalent view on Man as a stable entity, the computers are always *there*. They are, as artifacts, not internalized into human beings – though, as McLuhan suggests, new technologies always radically change our way of thinking, they haven't really became a part of our bodies. This is perhaps also why the characters in Ekbom's book never really come alive. (It's quite illustrating, that when another Swedish author, Lars Andersson, in the 1990's makes use of computer games in his novel *Artemis*, the game is *not* related to *control*, or used as a metaphor for the *"State machine"*, but rather as a tool for *investigation*, *exploration* and *problem solving*. In this novel, the protagonist, in order to track down a murderer, involves himself in a MUD on the Internet.)

From a historical point of view this is interesting, because it situates the computer prose of Ekbom's in a intersection between what N. Katherine Hayles has described as two different epistemological dominants, the first emerging from printed culture, fostered by humanism and hermeneutics; the latter emerging from the computerized society, described by cybernetics and systems theory, supplemented by posthumanism and discourse analysis.

The presence of pattern

N. Katherine Hayles In *How We Became Posthuman* (1999) N. Katherine Hayles describes a shift of epistemological dominant from »presence-absence» to »pattern/randomness» (Hayles 1999, s. 116 ff). The former designs the dialectical discourse fostered in the "Gutenberg Galaxy", a mechanized, positivistic mode, where phenomena either *are* or *are not*, just like the ink marks from the printing press. This may also been interpreted as a traditionally humanist and even hermeneutic discourse. The second dominant, by Hayles described as a condition of pattern/randomness, could be considered as *posthuman*, posthermeneutic and ecological (Man in harmony with his surroundings); modern technology, and cybernetics to go with it, has delivered Man from the (false) illusion of being a unique isolated entity – life, and subjectivity, like everything else is just a system of patterns, often randomly attributed. To contrast the printed marks on a offset page, representing "presence-absence", Hayles takes the example of the e-mail, indeed not a "physical" text in the traditional sense, but rather a pattern of dots and codes, which *may* end up in a completely different pattern when arriving to its addressee. Norbert Wiener himself anticipated this epistemological shift in the view of Man already 1950, stating that we are "but whirlpools in a river of ever-flowing water. We are not stuff that abides, but patterns that perpetuate themselves." (Wiener 1954, p. 96)

Automation, game theory, and the experiments with artificial intelligence all contribute to challenging human autonomy and agency. In an increasingly automated and digitalized environment, this shift from »presence-absence» to »pattern/randomness» becomes even more obvious, when indeed phenomena that used to be tactile and material – letters, lectures, documents – became digitalized and therefore instable. Hayles describes this as an increasing dematerialization of our existence:

> One could focus on pattern in any era, but the peculiarity of pattern in these texts is its interpenetration with randomness and its implicit challenge to physicality. *Pattern tends to overwhelm presence*, leading to a construction of immateriality that depends not on spirituality or even consciousness but only on information. (Hayles 1999,p. 35)

It is interesting to see how already in the 1960's these patterns emerge, and how they affect humans as well as texts, bodies and codes. The "diegesis", as well as the "subjects", in "Game Matrixes for Operation Albatross" are indeed generated in a state of pattern/randomness – for example the computers sometimes malfunction, producing some very bizarre matrixes, resulting in very strange actions. At the same time, the prerequisites of the "game" is rather a case of "presence-absence" – either the computers are in use, resulting in an potentially automated and impersonal society; or they are not in use, perhaps resulting in something else.

In contrast, one of the important lessons of the Y2K was, of course, that computer technology of today actually has become the nervous system of the environment - or, rather, the subconscious of everyday life. This is far from the image of computer technology in the 1950's or 60's; those huge machines in locked rooms, making calculations, keeping nice registers.

The governing metaphor in the 1960's for artificial intelligence was of course the Turing test, which in it's simplicity was rooted in the discourse of "presence-absence" – either you are communicating with a human or you are communicating with a computer; if you can't tell the difference, then the machine can "think".

To finish this quick glance at machines and subjectivity in the (Swedish) 1960's, and illustrate the arbitrary logic of Ekbom's book, as well as the Turing text, it is suitable to quote a dialog from 1965 between a computer and a salesman. The latter actually believes he is communicating to his boss, via the teleprinter, while he is actually receiving answers from the psychoanalytic computer program ELIZA:

> *HUMAN*: Do you think that I can use the computer this morning?
> *TELETYPE*: Why do you ask?
> *H*: I might be able to make some additional telcomp sales.
> *T*: Why aren't you sure?
> *H*: My prospective customers have never seen a demonstration of the system.
> *T*: Does this mean very much to you?
> *H*: Of course it does.
> *T*: You seem very positive of that.
> *H*: This is ridiculous.
> *T*: What do you mean this is ridiculous?
> *H*: Is there any reason why I can't use the computer now?
> *T*: Tell me more about your prospective customers.

This is great fun, yet the dialogue exposes a discourse still concerned with the *perhaps* historical question of "presence-absence" instead of "pattern/randomness". Ekbom's book highlights this intersection of an epistemological shift we may still be amidst.

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