INTRODUCTION
Towards a Functional Theory of Media

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There are at least two sides to Espen Aarseth's cybertext theory and its textonomy (the study of the textual medium). In the first yearbook the emphasis was more on the textual side while the medium or media side took a second seat to it. This time the arrangement of these dimensions will be more balanced if not reversed (at least in this introduction). Cybertext theory is most of all about the cybernetic production of signs and the unique dual materiality of that production. This uniqueness stems from arbitrary relations between two separate material levels (the storage medium and the interface medium) and leads to a heuristic typology of texts into which Aarseth is capable of situating every textual object from *I Ching* to MUDs based on how its medium functions, but independently of what that medium is. Cybertext theory is more interested in what a medium does than what it is and instead of more or less accurate ontological descriptions it gives us a continuum of media positions. This kind of approach could be called a functional theory of media.

There's no easy way to go around the conceptual mess regarding the so-called new media. The usual theoretical approaches to it are either tautological in non-heuristic ways or somewhat montypythonesque – defining digital or networked and programmable media as something completely different – be that favourite other theatre, cinema, comics, or misread and badly applied continental philosophy. These fundamental confusions give rise to an endless array of slightly smaller, but already institutionalised or at least well established and influential confusions concerning qualities such as interactivity, non-linearity or embodiment. If well marketed, they will create just the right hype to alienate the enlightened segments of the interested public. So it is not all bad.

The functional approach or attitude is some kind of middle ground between media essentialism and its montypythonesque variation, which lacks the shortcomings of these two extremes. To take a recent example, it is absolutely legitimate to do what Lev Manovich does in the first half of *The Language of New Media*, that is, pile up his favourite series of adjectives and properties describing digital media. In his case they are numerical representation, modularity, automation, variability, and transcoding. Little later in the book they are implied in the practices of montage, teleaction and compositing. We can take similar lists from other sources trying to tell us what computers are and could do. The problem is that these descriptions, however accurate they otherwise are, are not heuristic and have little or no power to engender or even invent new practices. In Manovich's case this becomes obvious when he reaches the final layers of his exposition. When he discusses form he takes up databases and navigable space in ways that are vulnerable to damaging critique, as he seems to be unaware of competing aesthetic theories built up around these commonplaces. Quite surprisingly the main weakness of his approach stems from what he thinks narratives and games are in relation to computers and databases. He opposes narratives to databases without taking into account that the latter can support various modes of expression (including narratives), which makes this comparison and opposition as pertinent, heuristic and Borgesian as a hypothetical one between towels and washing machines. On top of this he ignores the formal specifics (rules, goals and the necessity of manipulating the equipment for starters) of another medium-independent cultural formation: games. That's how computer games became navigable spaces in his conceptual map of culturally shallow visualist colonialism.

The other alternative is not so great either, as things can get even worse if we privilege any existing form of art or entertainment or see computers and networked and programmable media fulfilling some half-imagined or historically suppressed promises inherent to this or that tradition or older medium. It may give us some ideas of how to continue already well-established practices but that's all there is to that approach, and we can already make an educated guess that that's not the whole story, the big picture, or the game we want to play.

By applying the functional media theory we can get rid of certain paralysing and always already aporetic questions. We don't have to know exactly how some medium works, or where its limits or most useful constraints lie now or in the future; we just have to describe how it functions

as a machine producing signs (of whatever kind). Obviously that's not enough in itself, as we also have to connect this side of the medium to more or less media-independent cultural forms of expression, like games, stories and performances for starters, without assuming everything is or should be reducible to them. Sadly, it seems that the ability to recognize other than narrative forms and modes is rapidly vanishing from the scene.

We can take two examples, Henry Jenkins and his so-called comparative media studies and the concept of remediation coined by Jay David Bolter and Richard Grusin. However valuable they might be or however much sense they might make in other respects, their blind spots in relation to both media and transmedia dynamics are surprisingly compatible. For some reason they seem to want to do away with the whole question of specific media formations and modes of expression and communication.

In particular, the concept of remediation carries worrying stabilising effects with it. Whatever new form, mode or medium there is, there's no time to study it and build a decent scholarship around it, as we are supposed to be immediately stuck with remediating it. It would be so nice if we actually knew what we were remediating before doing the deed. This approach obviously privileges the already well-established discursive fields and objects to which all newcomers are forced to assimilate. For example, in the strange billion-dollar case of computer games this strategy means there is no shortage of scholarly work tracing down even the remotest tiny similarities and overlapping areas between games and mainstream narrative and cinematic practices. Everything else will be excluded and ignored, almost in advance. The fact that stories and their contents circulate seems to be good enough for these theories and theorists as well as to big media conglomerates.

This way computer games end up being remediated cinema instead of being remediated games (what they still were in Chris Crawford's *The Art of Computer Game Design* in the mid-80's) in Bolter and Grusin's model; in Jenkins' model computer games are just one story-selling and storytelling channel among others, maybe a bit different, but that difference is never specified or closely studied in pannarrativist repetitive media studies capable of seeking, finding and forging stories and nothing but stories everywhere, at any cost. This simple trick is played out by systematically overlooking and downplaying crucial formal differences between different modes of discourse – and by ignoring the most sophisticated theories of both narratives and games. While all this might sound trivial, the consequences of this operation are not: everything that is not sellable or re-

definable as a story will be wilfully ignored, which guarantees that the business of reinventing the wheel will be profitable in the future too. Still, as we just saw, there's a cybertextual alternative to this stagnation: the interplay between media positions and ergodic modes allows us to recognize, theorize and design much more than simple stories, remediated or not. Not to understand this may very well be an indication or a symptom of posthuman anxiety of influence.

The relation of cybertextuality and hypertext seems to cause endless confusions, too, although it shouldn't, as hypertexts are just one mode or type of static ergodic texts. On the other hand, hypertext as a concept could perhaps be relevant here, as the dynamics of cybertextuality often require a set of textual elements to be assembled and reassembled according to various methods and procedures. But here it is essential to note that we are dealing with hypertext in a highly abstract way, not just as a certain notion of links and nodes. And often it is the procedure of adding, deleting and changing the parts of a text which dominates over the connections between different sets of text. Even though it is possible to see, at some abstract meta-level, these dynamic processes as instances of hypertextual practice, there seems to be a threshold where it is not, however, convenient anymore. It seems to us, that at some point the tendency towards even smaller, or finer, elements, taking hypertext into the fine structure of language, "just barely above the word" as Jim Rosenberg has put it (not to mention the way below as practised and theorized by John Cayley and Eduardo Kac), does deconstruct the whole notion of hypertextuality – is it really still worthwhile seeing a string of letters changing to some other string, morphing pixel by pixel, at a certain pace, as a hypertextual practice? Are we not, rather, witnessing a dynamic process, which is performed upon a piece of writing?

The aspect of performance is vital for ergodic textuality, as it is the other face of the functionality coin. It may be the sampling author, the text as a program, or the participatory reader, or any possible combination of these, who acts the performance, but what should be noted too, is that the performance is not only acted upon the text, but also on the medium through which the text is mediated. It should be a commonplace for any literate person by now, that the medium really is the message, and in a very concrete way, not only as a handy metaphor. We can take as an example the real time, dialogical textual practice known as chat. Internet Relay Chat started as a separate piece of software, which gave the user a possibility to

log in the so called chat channels, and chatting with other users in that specific channel. Even though IRC was, and to some extent still is, very popular, chatting truly became a part of everyday culture only after the introduction of web chats, which do not require specific software, but do work in a standard browser environment of choice. Not only does the chat now work in a browser window, but also as an integral part of a web site – thus, chatting became a part of web sites, often singles life style promoting ones, or, to an increasing amount, as a community building element in company Intranets, etc. The way how these textual interactions are performed and perceived varies hugely according to the respective media, IRC or browser. But the difference is even more striking, when we look at the latest incarnation of the chat phenomenon, that is, the television chat programs as practised at Finnish tv channels. Now you can participate in the textual exchange by sending SMS messages (through your mobile phone), which will be shown on television screens all across the country as any other tv program. Here, the user doesn't have to log in to any site to be able to follow the textual performance, she can also watch it as a regular, anonymous tv spectator. And as it is often the case with watching television programs, the tv chats too are often watched in a group, as a social practice. For many different reasons, not gone here into detail, the television chat is already a totally different kind of beast, compared to the web based ones. And this is mainly due to the different operational characteristics of the respective media.

These differences cause people to treat chatting in various ways, which means that chat also functions in various ways in various media. Cybertext theory is not intrested in, or suited for, pondering what television is, or even, what technological constraints there are in combining mobile communication and television broadcast. Rather, it offers us a perspective and concepts through which we can make sense of the ways the television chat, for example, functions; how it may be used, how the discourse is controlled, what are the basic elements involved, and how television as a medium can be intergrated in the ongoing process of the chat. It is good to keep in mind that cybertextuality is a perspective not only on computers, or the Internet – the traditional media like print book and television offer us a huge variety of textual and audiovisual practices, the understanding of which requires this functional perspective.

And it is exactly here that hypertext theory loses its descriptive or heuristic power. There is nothing much we can say about works like Wardrip-

Fruin's & Moss' *The Impermanence Agent*, taking advantage of the agent technology, or literary MOOs, or holopoetry of Eduardo Kac, to name just a few, on the basis of hypertext theory and its inherent limitations and contradictions. Thinking developed around the hypertext theory is far too much committed to the static (or mostly static) link and node structures to be able to capture the "essence" of dynamically ergodic works in the present day digital media landscape. In many cases, hypertext known as the Web may well serve as a navigable space offering various pathways into the gates of works of interest (like *The Impermanence Agent* & al.) – but we should have a conceptual and theoretical toolbox to deal with the works themselves, possibly employing hypertextual practises, but almost never limiting themselves to hypertextuality alone. It may well be that in applying cybertext theory, at times, one has to discuss works of imagination, something that not yet exists. For us, however, that is a far better position than limiting ourselves within a theoretical framework which has had its day, and now tries to face practices widely exceeding its own premises.

In this volume of the *Cybertext Yearbook* we are proud to continue to publish the series of papers on the cutting edge of the programmed media. The innovative uses of agent technology as practised by Noah Wardrip-Fruin & Brion Moss, the MUDs used as poetic environments by Katherine Parrish, and Eduardo Kac's manipulated genetic materials are all discussed here, the latter as interpreted by Steve Tomasula. In addition to being exceptionally interesting and innovative in their approach, they all also pay particular attention to how the medium is functioning in each case.

There are also important articles dealing with the fundamentals of the notion of virtuality by Johanna Drucker, the classification and descriptive typology of hypertext links by Anna Gunder, and the popular discourse on the would-be metamedia by Anders Fagerjord. Fagerjord's critical take on the ideology of the Überbox especially resonates with the functional media theory proposed here. The closing of this book is a challenging opening for a discussion of central importance: are we witnessing the birth of a whole new scientific field? The answer according to Francisco J. Ricardo is a definitive yes, and he proposes *interaction science* as the name for this rising field. We are extremely happy to include this ground breaking essay in our present volume, and we expect it to be just a beginning in what will eventually turn into a wide ranging discussion. And as always, every mumbojumbo needs its own Sokal...